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Filming the Sahara

T. A. GLOVER, F.R.G.S., A.R.P.S.
(Leader and Cameraman of the Capitol Films' Sahara Expedition)

AFRICA's eleven million, five-hundred-thousand square miles contain such a wealth of photogenic material that British Producers would be well advised to utilise it more to their advantage. For, while the journey there may be expensive, crowds are cheap, and locations plentiful, favourably comparing in cash and production value with many locations nearer home. Photographically, weather conditions are perfect if the humid zones are avoided; but even these are good if the right season is chosen.

To give an indication of light values at the beginning of this article will save me referring to them again in the text, and be of help to any photographer who may visit these parts.

Using Kodak Super X stock, operating at normal speed, and using filters 5 N 5 and 3 N 5, our exposures were f8 and f11 respectively for normal development and work.

The Capitol Films' Saharan Expedition left England
early in October, and its objects were to reach Agades in the Central Sahara, and there to join the Great Salt Caravan that treks to Bilma, five hundred miles away. The shots we were to take were to be used in the Paul Robeson film, "Jericho." It was a task not easily undertaken, as time was limited, and Agades lay two thousand miles south of Algiers, our kicking-off point.

Strangely enough we left this North African Paris in a torrential downpour (but it was the last rain we were destined to see until Victoria Station loomed out of the fog five months later).

Our two cars, laden until their springs bent in the wrong direction with camera-gear, rostrums, food, and camping-kit, set out on this hazardous Desert trek. Although those who are interested enough to look on maps of this section of the road will find it marked with hotels and petrol-pumps, there is no guarantee that at any given time they will reach any of them. For a few hundred miles the cars plowed along a passably good road, but soon we ran into soft sand in which we laboured to free the cars that had embedded themselves axle deep in it, which, if exhausting, hardened us up for the difficulties which we knew lay ahead.

Hours were long, and we camped where the setting sun found us, taking time enough to snatch a hastily prepared meal before pushing on into the night to make up lost time. To add to our discomfort, our wheels disturbed clouds of red dust that covered everything we possessed, and it was with fear that we watched our cameras slowly but surely becoming covered with it. In spite of difficulties the miles were slowly left behind us. Over the long waterless stretches water was an additional weight added to our sadly overloaded cars until we reached Agades, that French outpost and capital of Air, which has not advanced along the road of progress since I visited it in 1922.

Here we were informed that the rest of our journey must be undertaken by camel as the caravan route diverged from the motor road, which had not been crossed for a considerable time, and was reported to be deeper in sand than the roads we had traversed. Ten thousand camels were to make the desert crossing to Bilma. Four hundred miles with only one water-hole, the Oasis of Fachi, where we would be able to replenish our supply of this precious fluid. Nevertheless we soon obtained thirty-five camels, and after we had loaded all our belongings upon them we were off, out into the blue, on the heels of our lumbering beasts.

Seventeen hours a day we rode, with only occasional halts for food, or when the saddles became too wearisome to plod along in the soft sand to ease our ache. Nothing disturbed the endless stretch of sand; not a break in its flat surface until the fourth day, when we came to a mighty field of dunes, that extended across the country like a gigantic scar.

Two days beyond Fachi we halted to await the arrival of the caravan we had come so far to photograph. Like a black wave we saw them approaching; at first, movement seemed to have been halted, we could see no animation till they were upon us. Then they came, black wave upon black wave, extending East and West as far as the eye could see. The camels, tired and thirsty, groaned under their heavy loads of salt and dates that had been traded for cloth in Bilma. Added to which, fodder for man and beast had to be carried.

Theirs had been a difficult journey, for sand-storms had hampered their progress, and the native camelmen looked weary and jaded with their exertions.

Our task was now more trying, for not only had we to photograph this mighty host, but no sooner had we finished that work, than necessity forced us to be under way immediately to get ahead of the long columns that were fast disappearing into the horizon.

Fachi is indeed well named the City of Shadows. Man-wide streets run from each other in bewildering profusion; its native population is a mixture of every black tribe that has passed this way. Once it was a rendezvous for all the desert raiders who played havoc with any caravan that passed its walls, and the natives' hard, villainous features confirm how few years have passed since to venture so far unarmed would be courting danger.

Fachi is built in a series of connected circles which fortified strength makes it obvious how Fachi has existed so long, hidden away as it is in the heart of the desert, and at one time subject to any raiding band that cared to take toll of it. Its walls, built of salt and sand, glitter in the noon-day sun. Outside its walls were collected thousands of camels resting before taking the last step of the journey back to Air. At night our cameras worked overtime, photographing this great camp with the aid of flares.

Mystified natives gazed at our strange equipment, a little disconcerted at our curious behaviour. It was fine to rest a day before pushing on into the desert hours before the camp was awake to await them at the first suitable "set-up."

We had been forty days in the saddle, averaging seventeen hours a day, and it was with relief that we saw the Mosque of Agades rise above the surrounding country—as if greeting us in return for a task well done.

We were tired, but happy!

**Back Projection (continued from page 5):**

prove they are possible. Pictures that have had such apparently enormous backgrounds have invariably used two or more synchronised projectors side by side. Such scenes as large rooms with three big windows showing background beyond each, or wide landscapes on either side of a foreground clump of trees, are shot in this way.

It is, of course, physically possible to enlarge one frame to even more than the 350 diameters of the average theatre. But in so enlarging on the back-projection screen, the following insuperable disabilities arise:

- (a) Tremendous light loss at sides of screen;
- (b) Enormous magnification of grain;
- (c) Loss on contrast;
- (d) The amount of residual movement of the background (which is only detectable in relation to a truly stationary object in front of the back-projection screen) is increased proportionately to the areas of magnification.

Talking on recent pictures, Mr. Dickinson praised the back-projection logging scenes in the Goldwyn picture, "Come And Get It," which he thought some of the best he'd ever seen. It is interesting, he added, that the background of all these shots, with one exception, were snowscapes, and snow, of course, with its whiteness automatically gives that hard contrast we have found so essential to good back-projection.
1. Hauser Girl.

2. Tuareg Girl of the Sahara.

3. T. A. Glover.

4. Lynx seen along the road.

5. The Unit: T. A. Glover (leader of the expedition and cameraman); Thornton Freedland (director); John Boyle (cameraman); K. Kettkwell (assistant).

STILLS OF THE CAPITOL FILMS’ SAHARAN EXPEDITION.
Desmond Dickinson
talks on BACK PROJECTION (in an Interview)

"At Stoll's," said Mr. Dickinson, "we shoot a variety of pictures for a variety of companies. We have had a great deal of back-projection to do, with backgrounds of varying quality, and we have had some interesting problems to solve. A perfect result, as for almost anything, requires infinite care, thought and patience. We have tried to apply these qualities, and our experiences may be useful to others."

The main initial problems fell under the following heads:—

(1) The "hot spot," or bright patch, in the centre of the screen;
(2) Insufficient light;
(3) Lack of sharpness in the background.

These are remedied by introducing a thicker screen, thus diffusing the light more evenly. It might be thought that merely increasing the light on this thicker screen would provide exactly the same "hot spot" as before. But this is not so. Mr. Dickinson uses a 300 amp. arc, with a 24-in. parabolic mirror focussing the light down to a circle 1½-in. in diameter. This intense light would, of course, not only burn the film, but melt the gate of the projector (which is an adapted Bell & Howell shuttlegate camera ensuring absolute steadiness). It is, of course, impossible to have the arc in the booth. It is, therefore, placed outside and the booth given a glass back. The only satisfactory cooling method was found to be an air system passing through a bath of liquid air, and blown on to the film in the gate. The cooled air-pipe in the liquid air bath can be raised and lowered to regulate the degree of coldness. It is thus possible to ensure that the film will not buckle. This is extremely important, as it means a dead sharp picture (in the absence of any other disturbing features).

Lack of sharpness is due usually to the back-projection screen being too far away from the next nearest thing in the shot (in a mid-shot this will probably be the artiste). This will have been done because of the necessity of shielding the screen from the spilled light from the lamps illuminating the actors and/or the set. If the projected background can be made intense enough, the spilled light will not have the same de-grading effect. In other words, provided the background print is made with a greater contrast than a normal print, and the light used for projection is very intense, the contrast of the projected background will be similar to that of a normal print with front lighting on the screen.

Working in this way enables the cameraman not only to put the artistes near the screen and keep the background sharp but also to light them from whatever angle is correct, even though the spilled light then hits the screen. This, of course, does not mean that you can train H.I. arcs straight at the artistes from the side of the camera!

Having satisfied himself as to the projection, Mr. Dickinson turned his attention to the backgrounds themselves. He sometimes found those he was asked to shoot were so bad as to be quite unusable. From his experience, he gives the following hints:—

Photography of Backgrounds.

(1) Use the old silent-film aperture when shooting backgrounds, so as to give the maximum size of frame. This will give, on the back-projection screen, as large a picture with less magnification. This, of course, has bearing, too, on the magnification of grain and the intrinsic sharpness.

(2) We have found at Stoll's that stock known as special "background" stock gives better results because it is capable of giving slightly greater contrast with less grain size than ordinary panchromatic stock.

(3) In my experience, for stationary backgrounds the only camera that ensures rock-steady pictures seems to be either a Mitchell or a Bell & Howell Shuttegate. In any case, the camera should be tested by shooting a double-exposure of crossed lines, the second exposure being taken from a very slightly different angle from the first and the amount of variation (if any) in the distance between any one line in the two exposures checked. This test should be shot on a portion of the roll of stock to be used in shooting the background, since the perforations may not be accurate. To ensure rigidity, it is valuable to insert expanding screw-jacks between the tilt and the pan-head (a practice common in U.S.A.).

(4) The focus must be pin-sharp.

(5) No gauzes should be used. A "beautiful" shot is not necessarily good for back-projection. The same shot, photographed to be less "beautiful" in texture, will be better for back-projection purposes.

(6) It is important not to over filter the sky; a grey sky tends to give a dirty appearance to the composite. For travelling shots (such as from a car or train) which include trees or other objects covering most of the frame both vertically and horizontally, the sky can be absolutely white, in order to give contrast between foreground and background in the background itself. For backgrounds with large expanses of sky, such as wide plains (which do not lend themselves so readily to back-projection), the sky may be corrected slightly if there are woolly clouds breaking it up.

(7) The camera should always be level, unless any special angle effect is desired. When the camera is tilted for such effect, the exact angle should be noted with a view to the subsequent placing of artistes and properties in the studio. It is a help, before shooting a background in front of which artistes are to appear in mid-shot length in the composite, to stand people in the foreground in the positions those artistes will occupy, and to shoot a test. This will help greatly in fixing the baseline of the projected background when projected in the studio.

(8) It is necessary to get the size of the background correct—e.g., if the background is one of cars travelling, to go behind a foreground car in the studio, it should be known whether the composite is to take in the whole car or only the rear seat, and how much is to be seen around the car.

Processing and Projection of Backgrounds.

(9) It is impossible, on the ordinary printing machine, to obtain from any negative a print which is steady to within some 100ths of an inch. Such machines, of course,
are quite accurate enough for theatre projection purposes, where such meticulous accuracy is not needed. They are accurate enough also for printing travelling backgrounds. But when the background to be printed is stationary, and will be compared by the eye with some foreground object which is truly stationary, it is essential to have the print made on an optical printer fitted with dowell-pins, which will ensure absolute steadiness of the print (assuming, of course, steadiness in the original negative).

(Note.—When everything is mechanically perfect and the above points have been observed, it will be found that some street backgrounds are still unsteady. This, upon investigation, will be found to be due to shake of the surface of the street or pavement on which the camera was resting, due to traffic. Such shake, for example, will inevitably occur in backgrounds taken in a busy street where an underground railway is close to the surface. This, of course, can only be overcome by a change of camera-position).

Any back-projection machine which projects a really steady background is fitted with dowell-pins. All, or almost all, of these machines are made to take Bell & Howell punch negative perforations. Therefore, the projection printer must be fitted with similar pins. And therefore it is necessary for the print to have the right kind of perforations for the machine from which it is to be back-projected.

Prints which have been dried too quickly, and consequently have developed excessive shrinkage, may be found difficult or impossible to run in a shutagate projector, because the shutagate is made to run film with perforations of a pitch of unprocessed film. Obviously all processed film is slightly too short, but film which has been carefully processed will run perfectly and be rock-steady.

(10) The background must be of a quality that would look too hard if projected normally in a theatre, owing to the inevitable loss of contrast in the composite.

(11) For night backgrounds, very great contrast is essential, and if the shot includes any sky, the high-lights of any object also in the picture can safely be white. If necessary, the sky can be darkened when back-projecting by masking the top of the projected background between the projector and the screen. It is obvious that the edge of this mask can be as hard or as soft as required, according to its distance from the projector lens.

(12) It is a great help, when ordering prints, to tell the laboratory that they are for back-projection. Realising this, the laboratory will be sure to print to bring out contrast. Also (though this is not a rule and depends upon the subject) the print should be lighter than normal by two Bell and Howell printer lights.

Photography of Composite.

(13) No matter at what angle the background has been shot, the camera photographing the composite in the studio must be square to the screen. The angle of the composite is determined by the angle of the background, the artistes being placed in the studio in proper foreground relation to that background.

(14) Please, says Mr. Dickinson to producers, don't ask for a 60-ft. screen and quote American pictures to

(Continued on page 2).
Harry Stradling comments on British Film Production

Without Fear or Favour

HAVING worked for the past eight months with one of the leading British film companies, I am now in the position to form impressions concerning the manner in which films are produced in England. These impressions, for what they are worth, are mainly favourable, but there are undoubtedly some depressions as well.

As I trust that these depressions are rapidly passing away from the British Isles, I will attempt to describe them while they are still with us. A few months back when British studios were running at capacity there appeared to be a lack of studio electricians. I have found on many occasions electricians highly proficient in their own line but with no knowledge of studio technique working on the set. The result is that they have to be instructed while the film is in the process of being made, and this holds up production. Would it not be feasible to put them through a two or three weeks' course before allowing them on the set?

Although this is out of my line, I have noticed that a picture is put into production before the scenario is properly finished. It is very praiseworthy to be optimistic and to say that everything will be all right in the end, but why not ensure this happy result by more preliminary preparation? It is obvious that an extra week or so spent in preparation when overhead costs are comparatively low is better than a week of revision during the course of production when the overhead is extremely lofty.

In these days of talking pictures, a great deal of the pep, punch and vitality of the film depends on the dialogue. The dialogue should be bright, crisp and witty. It should be up and on its toes instead of dragging round flat-footed. The words should come trippingly off the tongue as slick as quicksilver.

Those of you who have seen "The Thin Man" and "It Happened One Night" will understand what I mean. Take the sparkle out of the dialogue and remove the absurd little situations or hokum and what have you?

Now, I am convinced that British films need not suffer from their present standard of dialogue. You have the writers with the necessary talent. I do suggest, however, that specialists, such as gag-men, should be available.

Referring one moment to the artistes, there is one point as a cameraman, that affects me. An experienced film actor understands his lighting. He knows that he must not wander outside the radius of the lighting that has been prepared for him and that he must not infringe on the lighting that has been prepared for other actors on the scene. This knowledge is part of his technique and he takes pains to acquire it. Miss Dietrich, with whom I have recently been working, has this knowledge of lighting to perfection. She knows instinctively where to move and where to stop in order to catch the lighting to the best effect. This, of course, is of immense help to the cameraman. In England you will find, with very few exceptions, that the artiste has not acquired this knowledge and does not sufficiently appreciate the assistance which the cameraman can give.

And now I have finished discussing the depressions. It is possible that many people will disagree with my criticism and it is equally possible that I may be wrong, but it is given in the most friendly spirit and with a sincere desire to be helpful.

Let us turn to the bright side of the picture. In my opinion, British photography compares very favourably indeed with the American product. There are a number of British cameramen whom I could mention who are the equal of any of their opposite numbers in Hollywood. The camera crews, also, are excellent. There is one young lad I have in mind, still in his teens, who is the best that I have ever had working for me. I have nothing but praise for the equipment.

Perhaps I should award the fullest number of good marks to the laboratories. They are excellent. Their organisation is beyond reproach and the staff one hundred per cent. competent.*

Recently, while working on the "Knight Without Armour" picture, I have had to shoot under all conditions...

* Technicians will be interested to know that "Knight Without Armour" was processed at Olympic Kine.
of English weather—all the fifty-seven varieties. In spite of drizzle and bad visibility, I was never dissatisfied with the results when they came from the laboratories. I confess that I have been filled with grim forebodings on occasions, but they turned out good prints every time. Dealing with low-key lighting stuff is pure jam to the British laboratorians—I claim no copyright for that word—and their work in this connection has been outstanding.

Generally speaking, I have found everybody connected with the studios delightfully easy to work with. There is a spirit of enthusiasm and friendliness in a British studio that makes it a pleasant place to work in.

It is said that British Films are going through a tough spot just now. American films nearly bust three times. Why worry?

Technicians and Quota (continued from page 8).

Government Surveillance and Control

The Association welcomes the Committee’s recommendations to prevent control of the British film industry passing abroad, and particularly its suggestion that:

"The Government should, as soon as may be, take such steps as may be practicable to encourage financial interests to constitute one or more organisations to finance British film production, in approved cases, on reasonable terms."

The industry, and particularly its employees, have suffered from the mushroom-like growth of production companies, several of whom have been unable to meet their obligations, and on occasions have not even completed a single production. Employees’ salaries and wages are almost invariably in arrears on such occasions and there are no assets from which these can be recovered.

It is hoped that the Committee’s suggestions will be adopted, and further, that some form of Fair-Wages Clause, such as certain Government Departments insert in their own contracts, will be one of the conditions of the granting of financial assistance to producers.

Employment of British Technicians

The Association does not disagree with the recommended withdrawal of the proviso (embodied in the present Act) that the author of a scenario of a film to rank for quota must be British, since the clause has in practice been a dead-letter owing to difficulty of definition. But we regret that the Committee makes no reference to A.C.T.'s further suggestion that there should be instead a requirement that not more than one foreign technician be employed on any picture qualifying for quota. Foreign technicians who have come to England have not had to work on the despised "quickie." We do urge that an Act which is to aid the production of British pictures, and which will endeavour to make quota pictures good pictures, should also ensure that it is still the British technicians who make them. The British technician has had to make the "quickie." He should now be enabled, through legislation, to work on the better-quality quota picture, the production of which it is hoped will follow from a new Cinematograph Films Act.

TALKING OF RECORDING

Do you know that we record practically every worth while short made in England.

Hardly a day passes without a trade show of films recorded by Imperial. With over 800 successful recordings to our credit, it is not surprising that we are the leading people in the recording business.

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"Behind every foot of sound is a million feet of experience."
Technicians and Quota

The leading organisations in the film industry—production, renting, exhibiting and labour—have prepared and submitted to the Board of Trade comments on the report of Lord Moyne's Committee which enquired into the position of the British film industry, having in mind the approaching expiry of the Cinematograph Films Act, 1927, and made recommendations with reference to the continuance of Quota. A general article on the Report appeared in our last issue. A.C.T.'s official memorandum is printed below. The support of members of Parliament is being sought in order to look after the Association's interests in the formulation of any Act which may be forthcoming.

The principle of a film quota has always been welcomed by British technicians. They are of the opinion that the Cinematograph Films Act, 1927, has been one of the main factors which has enabled the British film industry to grow as it has done during the past ten years. A feature of this growth has been the considerably increased employment of British persons. The Association of Cine-Technicians, representing the technical employees, consequently welcomes any report which recommends the continuance of a quota. The production of British films is the sole livelihood of our members, a class of persons which has developed alongside the growth of the industry. We, therefore, note with pleasure recommendations which will continue to provide employment for British persons and it is only in specific details that A.C.T. has comments to offer. These are confined to the question of quality; the principle of British technicians actually working on British pictures produced mainly through Government protection; and any recommendations which in the Association's opinion may affect working conditions and salaries.

Further, we should like to express our approval of the Committee's recommendation to extend quota to short films, particularly as certain types of shorts, and more especially the documentary films, have been made almost entirely by British labour and enhanced considerably the prestige of British technicians.

Quality

The Association welcomes the continuance of the quota and equally welcomes the recommendation that exhibitors' quota shall be less than renters' quota, as the choice to exhibitors allowed thereby is one contributing factor which will tend to improve quality, the competitive element having been strengthened.

A.C.T. stressed in its evidence, given before the Committee, the importance of quality, and ventured the opinion that bad quality pictures produced simply in order to fulfil renters' quota were bad simply because no effort had been made to make them otherwise. The making of "quickies" was, in our opinion, reflecting detrimentally on the British technician, not merely from the point of view of prestige, but also as production of this type of pictures tended towards low salaries and bad working conditions for the technicians employed on them.

We, therefore, appreciate the attention which the Committee has paid to quality, but are of the opinion that the suggested viewing committee for all films is impracticable, unsatisfactory, and potentially dangerous. The Report of the Committee states that:

"If it is possible for problems relating to censorship of moral values of a film, to be solved satisfactorily, there would seem to be nothing impracticable in arriving at a decision likely to command wide agreement on the much less controversial aspect of general quality."

We cannot agree with this assumption. Many persons, both inside and outside the trade, will not agree that censorship values have been solved to the complete satisfaction of everyone. Further, we do not agree that general quality is much less controversial than the question of censorship. The Report says that "the entertainment value and general merits" is the quality to be assessed. We assume that "general merits" includes technical values. It is recommended that the viewing committee should consist of a "chairman and not less than two, or more than four, other members, all being entirely independent of any professional or pecuniary interests in any branch of the trade."

We feel that such a Committee, with all the integrity and goodwill in the world, cannot be the best judges of value and merit.

The following are certain aspects of detailed criticism:

(1) An expensive film may lack entertainment value but be technically good—and a cheap picture may sometimes book to hundreds of halls though having little or no technical merit;

(2) We assume that the estimate of quality is to be a fluid one, based at any one time on the standards of the pictures viewed in the preceding quarter. If this is, there is a probability that after a quarter of bad films the standards for the next quarter will be lowered. In such conditions, worse and worse films might be allowed quota;

(3) If there is to be a fixed standard (since the Report mentions a "minimum" standard) how can this be assessed?

(4) British pictures desiring to rank for quota will have to be shown to two committees (censorship and quality) before they can be trade shown. This seems excessive.

(5) Renters would have no guarantee that any of their pictures, however expensive and ambitious, would qualify in the suggested circumstances. Without the liability for the bigger Renters rising to about 18 British pictures a year this is a serious point.

A.C.T. feels, as it stressed in its evidence, that a cost test is the most satisfactory quality safeguard. We appreciate that such a test has loopholes, but they can be safeguarded against (suggestions in certain directions were made in our evidence). Such a quality test is much simpler to operate. If a film costs, say £2 per foot, it qualifies for quota. Otherwise it does not. There should still be a committee, but it should serve merely as a Court of Appeal to which films could be submitted whose cost does not reach the required level but whose producers claim that their quality is such as to atone for that lapse.

We do urge the Board of Control, therefore, to reconsider this particular recommendation very seriously before drafting a new Act.

(Continued on page 7).
Square Eye

“Square Eye” is almost a sixth sense. It is peculiar to cameramen, many of whom view the world from an outlook entirely different from the rest of mankind, for even when they are not shooting that sixth sense makes them still regard life through that little glass square, which eliminates all that is unessential and all that is distracting or superfluous. This sixth sense is only now becoming evident in British films, although it has shown itself for many years in the American product.

Why do American films get there every time? Why do they reign supreme while the films of the rest of the world lag behind? Is it that the United States have purchased the cinema brains of the world, or is it for some much deeper reason?

Looking through that little square for so many years has enabled me to centralise and concentrate on a given point, while eliminating everything that fails to register acutely. This practice and habit has taught me there is something more than a mere composition of a pleasing picture. “Square Eye” almost unconsciously, or at least subconsciously, teaches one to register on the emotions, or, to put it another way, teaches one to “photograph thought.” With this in mind I am going to venture a few criticisms and also, I hope, some helpful constructional data on some of the major difficulties in making our British films take a proud place in the world’s market.

The outstanding factor of American films is their sincerity. They are made from the heart, and utilise the violent emotions of life. The emotions that everyone can recognise and understand. They concentrate upon youth with a capital Y, a thing we all of us have or had, a thing we love to appreciate and try to keep, and those of us who are no longer young in years have still our memories of that happy time. Albert Samain, famous French poet, writing of Youth, says: “Memories are like a beautiful book, never to be finished, always to be picked up and read, never to be laid aside.” This knack of being able to portray these emotions belongs to people who are sincere, and this is particularly true of American film people, no matter what the subject of their picture may be.

I saw an American picture some weeks ago—and case-hardened as I am by years of studio work, it made me cry, as it did most of the audience. It was not until the next day, when I held a technical post-mortem on the film, that I realised the story itself was utter trash—but it made me cry; it served its purpose in exciting my emotions while I was in the cinema. This film has definite emotional entertainment value, because even with its sentimental story, the director and the players gave from their very souls this sincerity, rarely seen in British films. In England, unfortunately, we are content to lag behind, giving, with a few exceptions, only a mediocre imitation of American technique. Too often our British films are packed with what I call camera fireworks, such as freakish shots and all sorts of “intellectual” monstrosities, while entirely overlooking the fundamental purpose of films, which is to arouse the emotions of the audience by the display of emotion on the screen. We have all of us seen films of this sort, and found that they lacked that sincerity, that power of giving straight from the heart, and we feel that the director has either his tongue in his cheek or is obsessed by his own brilliance. Either attitude is fatal, and this way of making pictures is going to send us back to that obscurity from which we are only now beginning to emerge. Such a state of things should never be in a country like England, a land of culture, romance, beauty, the birthplace of some of the greatest artists in the world—the very soul of sincerity.

British films can only save themselves by ceasing to feebly copy the big American successes, by forgetting to make their films “camera conscious.” Let us only copy the one thing that has made American pictures great—telling the story . . . their belief in the emotions. Let us go back to our traditions, to Shakespeare, Dickens, to drama, to telling our story sincerely, whole-heartedly, enthusiastically. We have a few directors in this country who have done all this, but others must follow their example, for these few, be they ever so brilliant, ever so untiring, cannot carry the whole British film industry on their shoulders.

Furthermore, we have got to create new technicians: young men who show promise of being directors, etc., must be given a chance, so that they can, in time, put the

(Continued at foot of next page).
Stanley G. Double on
REDUCTION OF NOISE IN FRACTIONAL H.P. MOTORS

Motor designers, in view of the increasing demand for drives of small horse-power, have lately given increasing attention to improving motors of up to one horse-power, and in the latest types no commutator or complicated short-circuiting mechanism is used, so that a potential source of trouble on single-phase motors is eliminated. The absence of brushes is also an important point when considering the maintenance of these small motors. The high-starting torque which is developed by fractional horse-power motors of the split-phase type makes them suitable for driving domestic apparatus. Split-phase motors are also suitable for many other applications when the maximum starting-torque required does not exceed 125 per cent. of full-load torque. The starting winding is switched out of circuit automatically as the motor attains full speed by means of a centrifugal switch. The rotating position of the single-acting centrifugal switch is mounted on the rotor shaft, and the switch is free from any rubbing contact at standstill or at full speed, rubbing only taking place for an instant at about 75 per cent. of full-load speed. This is, in fact, the only moving contact on the entire motor.

Fractional horse-motors designed for capacitor-starting and capacitor-running have many advantages when compared with other types of single-phase motors. The condensers are of the solid-dielectric, hermetically sealed type, and a special arrangement of connections is adopted. The condensers are in circuit throughout the starting and running periods; thus silent running with minimum radio interference is ensured.

These capacitor-type fractional H.P. motors are often used on Moviolas and are found to stand up to the heavy duties required of them, the contacts requiring attention say every 3-4 months, and renewal on experience every 18 months.

One of the problems upon which motor designers have been concentrating for the past few years is that of reducing noise. Although the noise produced by good quality fractional horse-power motors has never been excessive, the fact that they are nearly always working in confined spaces and are in many cases used for domestic purposes, accentuates the objectionable character of such noises. To solve this problem there is now being put forward a fractional horse-power motor which is said to be one of the quietest in operation. Although it is impossible to build electric motors absolutely free from noise, it is possible to minimise the noise which is inherent in any type of motor. It is far more important, however, to prevent the transmission of noise through the driven machinery, when greater amplification may arise. Since noise is often largely due to the location of the motor, the first step is to isolate the motor frame from its drive, and from the base framework. The most effective way of isolating the frame is by mounting it on rubber cushions, placed round the bearings of the motor.

Another source of noise in some machines has been the end-bumping of the rotor shaft shoulder against the bearing, often caused by minute inaccuracies in alignment of the drive. The rotor end-play in the new motors is controlled by an indestructible steel diaphragm allied to a cushioning device, which eliminates end-bumping.

When belt-drive is applied, noise is sometimes caused by incorrect tension of the belt. This not only causes noise but results in excessive wear of the belt and bearings on both driven and driving machine. The machine, rubber-mounted in an inner base, is pivoted in an outer base. The belt tension is provided by torque reaction about the outer base-pivots, and the result is that the belt is always at just sufficient tension to transmit the load with maximum efficiency, being automatically tightened for heavy starting loads, but slackened again for normal running.

In the normal belt drive, the belt must be of such tension as to transmit the starting load, which, on such devices as compressors, is sometimes in the nature of three times the normal running load. A fixed belt must, therefore, be of sufficient tension to take the starting load, otherwise slipping will occur during starting.

Square Eye (continued from preceding page).

soul of England on the screen, something that will stamp our films with a national spirit and "Tell the World." This, to my mind, is a better proposition than importing a lot of foreigners, many of whom are "washed up" in their own country.

And, as a start, let our British producers discard those sliding cameras, those very odd angles, and all their silly little stunts, which, unless used for a very definite reason, mean nothing to the picture. And let us get back to the fundamentals of making pictures with that enthusiastic sincerity for which I have been pleading.
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Cinema Log

Producer-Renter-Exhibitor Combines.

Production losses claimed to have been made by Producer-Renter-Exhibitor combines rather point to too many bookings and not enough cash passing between production and theatre departments. It is no good making expensive pictures and then selling them cheaply to your own theatres. You can’t make the profit out of the rest of the exhibitors. Also, those people who are in a position to know what their patrons want and to distribute their product on very economical terms, go on for years making films that they know must make a loss.

France and Italy in Film Pact.

An agreement has been signed between France and Italy for the exchange of films, giving France right to export twelve films to Italy in exchange for eight Italian.

Signed between Chargé d’Affaires Count Blondil and Minister of Foreign Affairs Count Ciano. Exact film lengths and monetary stipulations are not yet to hand. Perhaps Mr. Neville Kearney, of the F.B.I. Film Group, will find time to look into the British film interests. A spot of export would be very welcome, particularly at the present time.

G.B. Finance.

The following details will be of help to readers in following the present G.B. crisis.

Passing dividend of preference shareholders would raise voting control. If preference dividend is six months in arrears, these shareholders have one vote for every £1 share held.

G.B. Preference Capital of £3,250,000 against Ordinary Capital of 5,000,000 10 - voting shares. 2,915,000 of these are held by Metropolis and Bradford Trust, and majority of ‘A’ ordinary voting shares of this Trust are held by the Ostrer Bros.

Passing of dividend would give voting power to Preference shareholders to wrest control from Metropolis and Bradford Trust and American interests; if supported by privately-owned ordinary shareholders who are opposed to present control, on account of the passing of last year’s dividend.

Voting position would then be Metropolis and Bradford Trust 2,915,000 votes. Preference shares 3,250,000 votes. Ordinary shares 2,085,000 votes. Giving anti-control majority, subject to considerable modification of 1,420,000.

India.

Paul Perry, American cinematographer, writes that he was surprised at the motion picture activity in India. Says there are over fifty studios making 300 pictures a year. Feature films run from eight to fifteen reels. Bombay is India’s film centre, with Calcutta second. Bombay Talkies most important—heads of departments are German; these include directors, cameramen, sound, laboratory men and art directors.

Film City Studio lease studio space in Bombay; Imperial Pictures make Cinetone pictures; in Poona, Wadias

By KENNETH GORDON

Films and Prabhats have studios. Northern India has a large studio owned by the East India Film Co.

Modern automatic developing machines are used of European make. Cameras are about fifty-fifty British and American. The same applies to the lighting equipment. Sound is nearly all American. Cutting plant is mixed. There is still a big opening for equipment—it’s up to you British equipment manufacturers, and there may be a chance for a spot of British labour.

‘Joe’ back at Elstree.

Had a chat with that old-timer, Joe Bamberger, who tells me that he has again taken over the J.H. Studios at Elstree and is busy getting together equipment to bring it up to date; says he is not quite sure yet what he is going to do there, but I know Joe, and it is a safe bet to say you will be hearing about him soon. First met him before the war, when he was running the Francis Claire & Bamberger Enterprises, who had their studios in the Crystal Palace. He taught me a lot for which I am thankful, so we will say “Good luck, Joe.”

A Good Time coming to Beaconsfield.

Tudor Films, under the direction of the Marquess of Ely, have taken a long lease on the British Lion Beaconsfield Studios, where they will shortly transfer their production activities. They have been filming at Highbury studios.

News from Strand Films.

R. Bond, member of A.C.T. General Council, has nearly completed his first directorial effort for Strand Films.

The film, which is being made in conjunction with the National Council of Social Services and the Land Settlement Association, deals both with the depressed areas and with rural community life and takes the form of a “story” documentary. Real people are cast as characters, but, contrary to previous documentary work, a considerable part of the film was shot in the studios.

Considerable progress has been made by this new Company, which, in their first year of production, have made 14 films. “Cover to Cover,” the film of books and writers, is now having a wide showing, after a ten week’s West End run. Four films about London—“Rooftops,” “Statue Parade,” “London Wakes Up” and “People in the Park” are being especially successful. “The Way to the Sea” recently received its London première.

Bond’s film is one of 12 new films that Strand have in production for 1937 (3 more are being scripted).

Financial Chat.

Overheard in Wardour Street:

““What’s the financial standing of Artful Studios?”

“Quite good, old man, I have always found they pay cash on receipt of writ.”
Growth of Camera Hire Service.

Mr. Shaw Jones, an A.C.T. member, started professionally some six years ago as a still photographer to a Rockefeller Expedition on Anthropology in Central East Africa. Since then he has worked in several film studios and short film production companies in various capacities, finally settling down as a cameraman, specialising in exteriors.

His experience made it evident that there was a continuous demand for good silent cameras for use over short periods. After using several makes of camera, experience proved that the Newman Sinclair Autokine was the best and the one Newman Sinclair in his possession had often been let out to various firms urgently in need of a camera. Frequently the demand could not be met, and in this way the idea of a camera hire service was evolved. It was decided to specialise in Newman Sinclairs, and in September, 1936, the Shaw Jones Camera Hire Service was started.

The idea worked well and further cameras were added to meet the demand. After six months the equipment has grown to a fleet of eight Newman Sinclairs, each one complete with a selection of lenses, etc. In order not to disappoint clients, it was decided to supply only the very latest equipment and each of the seven new cameras added to the fleet came straight from Newman and Sinclair workshops.

As the business expanded, cameras were provided for work in the Sahara, the Mediterranean, the Antarctic and even Piccadilly Circus. Calls frequently come through in the small hours of the night and a "day and night" service is now instituted.

These cameras, maintained under the personal supervision of an expert cinematographer, ensure that they are in perfect condition at a moment's notice. Those who work with hired tools know how important this is.

Sit-Down Strike of Kids.

Let down, when Western thriller failed to arrive on time, hundred Lewistown, Montana, youngsters staged sit-down strike in local picture theatre.

Manager had to give them tickets for another performance after kiddies had stayed all day and well into night. No doubt action will be taken for damages against Renter.

Real Economy.

I like the press report of one of the leading British film companies. Finding it necessary to cut down expenses by thousands of pounds a year, its first economy measure has been taken. From now on, members of the staff will have to pay twopence a cup for their afternoon tea (formerly free) and will have to provide their own towels, with a charge imposed of twopence a week for laundering.

Technically Speaking.

A newly-promoted circuit supervisor is lecturing engineers on sound equipment. At last very fed-up listener stands up and suggests that theatre sound can only be improved by the addition of Oximeters to the various circuits. Supervisor, full of enthusiasm, assures proposer that this shall be added to every theatre in circuit at once and congratulates him on suggestion. Another engineer stands up, enquiring exact function of instrument, when original proposer explains simply for measuring Bull—

Western Electric Introduce Mirrophonic Sound

Coinciding with their tenth anniversary, Western Electric introduced to the British film industry Mirrophonic sound. A series of demonstrations were given in London and the provinces, and at once the new system was acclaimed by exhibitors, renters and producers alike.

With marked unanimity, the industry welcomed Mirrophonic, and within a few days after the first London demonstration, orders for its installation were taken. In the case of one Midland cinema, the new equipment was installed exactly a fortnight after the theatre had opened to the general public.

For the purposes of the demonstration, Western Electric screened excerpts from a number of current films that were considered particularly suitable, and the results were truly amazing. From a sequence of "Born to Dance," Eleanor Powell's tap dancing beats could be clearly heard above the sound of a large band, while in striking contrast was Charles Laughton's recitation of the twenty-third Psalm from "Rembrandt," which was reproduced in a remarkably effective half-whisper. It needs to be emphasised here that no special recording was undertaken in connection with the demonstration.

The name Mirrophonic was chosen, because any sound can be recorded as faithfully as a reflection in a mirror, while the outstanding features of the system are versatility, clarity and audio verity.

Modifications and additions can be made to existing reproducer sets, and new amplifiers of advanced design are introduced for new installations, and necessary modifications or additions to existing ones.

If an existing installation is converted, sound heads will require new lens assemblies and new drives. If these are already fitted, as in the case of Wide Range, it will not be necessary to carry out any further modification other than to the photoelectric cell amplifiers.

A new range of amplifiers of advanced design are used in Mirrophonic systems, all of which are A.C. operated, and in addition there is employed for the first time a "Harmonic Suppressor." This may be compared to an electrical governor which automatically causes the amplifier to maintain constant quality, free from distortion, over an output range so enormous that the loudest sounds heard in the theatre may exceed the weakest by more than 100,000,000 times.

All parts of the circuits in new amplifiers requiring adjustments can be checked by means of a selector switch associated with a "Percentage Meter," graduated to read percentages of the normal or correct value. All the operator need do when checking valves is to turn the selector switch to whichever valve he requires to test and read the percentage meter, which should show a reading of 100 for a valve with satisfactory emission.

The Mirrophonic equipment employs an entirely new horn system, the Di-phonic loud speaker, which was developed by Dr. Harvey Fletcher of the Bell Telephone Laboratories. The Di-phonic loud speaker is a two-way combination which employs a low frequency combination of baffle and dynamic speakers of the cone type for reproduction of frequencies below 300 cycles, and a multi-cellular horn system with dynamic units for the reproduction of frequencies over 300 cycles.
Experiences of an Amateur Film Maker

By W. N. McLAREN

At a meeting of The Royal Photographic Society on December 8th, 1936, Mr. W. N. McLaren, an A.C.T. member, gave the following account (reprinted from "The Photographic Journal," by kind permission of the Editor) of his experiences as an amateur, and showed two films made when he was a student of the Glasgow School of Art. The meeting was held in connection with the Exhibition of Kinematography, and was arranged by the Association of Cine-Technicians.

I was an amateur for about four years before becoming a professional, and in my spare time I still carry on amateur work on sub-standard film, because, although an amateur is limited in technical equipment, he has a freedom in certain respects which is not possessed by a professional. He has a freedom of choice of subject matter and treatment of subject matter, and there is no censorship of 16 mm. film. The only dictatorship that exists in the case of the amateur is the dictatorship of a limitation of technical means; but that in itself is not a bad thing. Often limited resources call forth greater ingenuity in the amateur; circumstances encourage him to think of fresh ways of doing things which, if he had more resources, he would not consider.

I am going to show you two of the films that I had a part in making and to describe very briefly my experiences as an amateur with an amateur group. When I was a student at the Glasgow School of Art there was an amateur group composed of about four people, who were very enthusiastic and willing to devote all their spare time to making films, and there were also about a dozen people who were interested and anxious to help. We had one Cine-Kodak, a B.B. Junior model, with a 50-ft. capacity and a 1.9 Kodak anastigmat lens. We had for lighting equipment two 1000 watt lamps in stands and reflectors. We had to work within £10.

The first question we had to decide was the subject matter of our film. There were a hundred and one suggestions made, because, like all amateurs who are about to make a first film, we did not realise the difficulties. After much discussion, I managed to convince the rest of the group that we should treat the material at our own doorstep, for the very good reason that we knew this subject matter well, it would be easy and cheap to film, and we should be working amongst people whom we knew and could rely on for co-operation. There were about four hundred students in the Art School, and the institution catered for all branches of art—painting, sculpture, design, architecture, lithography, pottery, embroidery, metal work, modelling, and so forth. That was a very wide and varied subject matter from which to choose, and we thought of many different ways of treating it. We could deal with the subject matter in an impressionist way; we could treat it in an instructional way; by taking one particular subject in the school and showing the processes involved in that subject; we could treat it in a sociological way, by showing the school in its relation to society, the function that it has as an institution, and in a historical way, by showing how the art students and artists had in previous centuries served the dominant ruling class, such as the Church, at one time, then the aristocracy, then the rising merchant class, and to-day, the industrialists and manufacturers, and showing how the Art School curriculum is adjusted to suit its present function and also how there are in the curriculum to-day, remnants of outworn functions of former centuries.

For our first film we chose the simplest method, an impressionistic treatment of subject. Thus our purpose was not to show the exact nature of a process, as in an educational film, or the accurate relationship of a set of factors to a situation, as in a sociological film; our purpose...
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THE Fleet consists of eight new and completely up-to-date Newman Sinclair Cameras. Each equipment has at least 4 Magazines; Tripod; Viewfinder corrected for Parallax; a selection of Lenses ranging from 1½ in. to 17 in.; usual Filters; Filter and Gauze Holders; Leather Carrying Cases, etc. Some also include Reflex Finders; Telephoto Lenses; Polar Screens; Court Treat Release and Loading Bags.

The Equipments have been engaged on Productions by the following:

Herbert Wilcox Productions Ltd.
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Capitol Film Corporation Ltd.
Pinewood Studios.
British Antarctic Expedition for 1937.
Neville Clerk Productions Ltd.
Stafford Studios Ltd.
Wainwright Productions Ltd.
G.M.P. Productions Ltd.

Educational and General Services Ltd.
George Smith Productions Ltd.
Norman’s Film Library.
Gee Films.
Stoll Picture Productions.
Widgey R. Newman Productions.
T.H. Productions Ltd.
Butcher’s Film Service Ltd.
Etc., etc.

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was simply to make an interesting pattern of visual material. Our idea was to give an impression rather than an explanation of the subject.

(Mr. McLaren then showed his first film)

The scenario of that film took a week to plan. It was composed, to begin with, of a series of very small drawings, a rough sketch for each shot. Every drawing fixed a particular angle, distance and lighting.

Then, mentally, I timed the action of each shot and put down against each drawing its exact duration in seconds. By the end of the week I had a very tight script visualised, and timed in every detail. For amateurs, I think the following is very sound advice.

Think before shooting rather than after shooting. This will save time and—which is even more important to amateurs—it will save stock.

The shooting took three weeks; there were three of us engaged on it. We worked in the evenings during those three weeks. In 90 per cent. of the film we kept strictly to the scenario, and only in 10 per cent. did we depart from it, when we found that the actual handling of the situation suggested a course of action which we had not thought of before.

We always aimed at using lighting to emphasise our points. For instance, when we were taking a shot of pottery, we illuminated it in such a way as to show up the rotundity of the pot. When we were shooting a student's hand painting on a canvas, if we wanted to emphasise what he was painting on the canvas we lit the hand in a flat manner and the canvas more brightly than the hand. Whereas, if we wanted to emphasise the movement of his hand or the way he held the brush, we lit his hand in a modelled manner and more brilliantly than the canvas. Again, in a shot of the polishing of a piece of metalwork we arranged the lighting to achieve the maximum specular reflection.

As to the duration of each shot, we aimed at avoiding the slightest redundancy at either end. When shooting we reckoned in terms of seconds. When editing we reckoned in terms of frames.

The editing of the film took one week, and amounted to a purely mechanical job. We had shot according to script, and as a result had only 20-ft. of scrap in a 400-ft. film. With the film finished we were only 58 out of pocket.

The next film you are going to see took a very different course. It was our second film, and it was shot with quite a different camera. A comparison of the film you have just seen with the one I am now going to show you, brings out very vividly the difference of treatment caused by the use of a different camera. We were working with a Cine-Kodak special camera, a very efficient instrument which has dozens of gadgets all over it for trick work and special effects. To use it after the ordinary Cine-Kodak was like playing on an electric organ after tootling on a tin whistle; and our first impulse was to press all the stops and use all the gadgets. I was so enamoured with the possibilities of the Cine-Kodak Special that I designed a film specially to exploit all the possibilities of such a camera. The film, when finished, was appropriately called "Camera Makes Whoopoe."

The film took about nine months to make and had a very fluid script. We shot about 900 ft., 700 ft. of which we used, so that we had a 30 per cent. scrap, due to a much less tight script. We also tried out sound effects for the first time on sound discs, built our own recording apparatus and cut our own records. To cut our final sound discs we used three channels, fed simultaneously by a microphone and two turntables.

The theme of the film was the Christmas Carnival Ball, at the Glasgow School of Art, a subject specially chosen to justify extravagant use of trick work.

All the superimpositions, dissolves, bisected frames and effects were done in the camera. We were to a certain extent working blind. In many of the shots we superimposed about seven or eight times and had to plan it all out very carefully before taking the shot.

(Mr. McLaren then showed his second film)

In reply to questions, Mr. McLaren said the method by which the musical instruments got into the cases was by the usual single frame animation process. First of all, the instruments were tied on threads and lowered into their cases, but the threads snapped, so the method was adopted of moving each instrument a fraction of an inch and then photographing it, and repeating that process until the whole movement was completed. A great deal of money had been saved by using very cheap sets. None of the film was photographed at the ball; that had been tried, but the material obtained was found to be no use, so it was all built up afterwards.

Sprechen Sie Deutsch?

Six thousand miles from Hollywood, he came, to this proud shore,
To film a British epic, upon a British "floor."
The studio, to greet him, presented a brave sight,
Bedecked with flags and Union Jacks, to symbolise our might.

Upon the set, he asked the camera artiste—"If you please—"

But, "Me no spleeekee Engleesh," replied that quaint Chinese.

So, with a hopeless gesture, he approached the leading man,
Who merely shrugged his shoulders, for he came from Japan.

Then he tried the lighting expert, and to him a mouthful split,
Though he guessed him either Greek or Scot, because he wore a kilt.

So he rounded up the chapper-boy and muttered, "Listen, Bill,
Are these guys nuts?" The boy replied, "I, too, am from Brazil."
The leading lady chatted with some friends upon a bench,
But the gist of it was lost on him, because he spoke no French.

He tried the "props" and "make-up," and delivered them his sermon,
But they looked askance and murmured, "You undress us, pleas, in German."

He tore his hair, while in his hand the script he kept on crumhin,

Then, with a yell, cried, "What the hell, the darned thing's all in Russian."

He raised his voice, in language new—unfit for reproduction,
Which, censored and in mildest form, was: "British production."

(Reprinted from the Kinematograph Weekly, by kind permission of the Editor).
The Key to the Door

By REG. BARTLETT, The Newly-appointed A.C.T. Organiser

The growth and progress of any such organisation as ours is marked by definite stages of development; closely resembling our own individual human attainment of wisdom and stature.

First comes the period of early infancy, accompanied by the devoted nursing and self-sacrificing attention of the parent pioneers.

Our infant grows: its youth is a period of difficulties and adjustments, of conditioning by the influence of its environment. Expansion is often accompanied by growing pains. Mistakes are made, and the lessons of experience are assimilated.

Then a further phase is reached, and our young organisation becomes conscious of approaching maturity. It is now time to put away many childish things, for there are serious responsibilities to be assumed.

Perhaps we can all agree that this significant stage—in itself but the very beginning of things—has now been achieved in the natural existence of our Association. A.C.T. has grown up, and we are in a position to claim the key to the door!

It is a very important key. It opens the door to all-round agreements, regulating decent conditions for our members throughout every department of the film industry—studio, laboratory and newsreel—which is covered by our Association.

Well, we have claimed that key, and we are opening that door. Let us pause for a few minutes on the threshold for a little healthy introspection and self-criticism. What are the responsibilities that we must be expected to assume, to ourselves no less than to those with whom we seek co-operative agreement? Perhaps if we can get to know ourselves a little better, we can acquire a higher standard of self-discipline; and nothing but good can come of it if we grow more self-conscious as an Association.

* * * * *

Now the first point which occurs to us concerns our quantitative membership. We can congratulate ourselves on now having enrolled in our ranks the majority of technicians in the majority of studios, laboratories and newsreel companies, many of which are now 100% organised. This is good; but it is not enough. Nothing less than 100% of all available technicians throughout the industry must be our standard.

It is here that a definite responsibility devolves upon every member.

You don’t have to be a leading member of your appropriate committee before you interest yourself in the all-important task of winning further members for the Association. Are you working with any non-A.C.T. colleagues? If so, is it in spite of the fact that you have attempted to persuade them of the advantages of joining; or because you have tended to neglect your primary responsibility as a member?

After all, it is to be assumed that every member joined in the fundamental belief in an Association, which would further the common interests of a small but important section of the community. Surely it is but a step half-taken if membership is not followed by discussion with those who are not yet associates. (I know it sounds very obvious; but it does seem apparent also that there are members who tend to see their organisation, not as an association of cine-technicians with common interests and objectives, but rather in the light of a central nucleus attached to a host of hermits by separate communication channels, each of which is utilised for the one-way passage of subscriptions. This is a definitely unhealthy conception).

The question of mere numbers thus seems to have led us to the much more important aspect of the quality of our membership, in the mass. I think we should measure that quality in terms of organisational unity. Quite frankly, some of our (numerically) strongest units have need of adjustment in this respect, and I am sure that we can all benefit by briefly running over a few of the essentials of adequate organisation before passing through that door which opens upon new and greater responsibilities.

How many of us can say that we have a thorough working knowledge of the rules and regulations governing our Association? And how many of us have consciously broken any of the rules?

If we regard our rules book merely as a rough working guide, then the result will only be expressed in various forms of disorganisation—in serious arrears of contributions,
in the neglect of common responsibilities, in increasing apathy and a generally disheartened attitude.

Let us be frank. The responsibility of organisation rests primarily upon the General Council, the highest executive committee of the Association. At this moment of self-searching it is necessary to admit that in the past the responsibility of maintaining the strict observance of the rules has not always been adequately shouldered. But to-day the General Council is fully alive to its responsibility, and the rules that govern our internal organisation, as amended and improved upon from time to time, henceforward will be rigidly observed.

These questions should now be engaging the attention of every member. What is your viewpoint? Much more important, how are you expressing it? Let us hear your voice, and your committee's voice, at the next General Meeting.

This brings us to the question of our essential local studio or other committees. The prime importance of these basic committees cannot be overstressed. They are relatively much more important than the General Council, for unless this body is supported upon a solid basis of functioning representative committees, then it becomes a junta divorced from the membership.

However difficult it may appear in a few special cases to set up efficient representative studio committees, the problem must be tackled and overcome. How can any section of our membership take the Association seriously if they find themselves isolated and unrepresented in their own studio, for the lack of an efficient committee and regular personal contact with headquarters? Then let us agree that the formation or strengthening of our local committees is our really urgent necessity. Our immediate aim must be no less than this—in every studio, in every laboratory and newsreel unit, a strong, correctly functioning committee.

What is a correctly functioning committee? Naturally we must be flexible enough to adapt ourselves to local conditions, but the following essentials should, I think be observed:

Firstly, correct balance. Every department should be represented. Then the committee can speak with the voice of the entire membership.

Then meetings should be held regularly. They should be brief and to the point. Watch this carefully. A degeneration to rambling studio conferences marks the beginning of the end of efficient committee work.

It follows that a definite agenda should be adopted. It should always include such important points as local departmental problems and the recruitment of backward members. Regular reports back from the higher committees should be taken. And, therefore, another essential is the regular delegation of at least one representative to the weekly General Council meetings.

Simple points, all these, and obvious ones, surely! In their practical realisation, however, we naturally encounter little difficulties and obstructions.

If we can agree that our self-criticisms were justified, if we can appreciate the real need for a little more self-discipline and co-operative effort, if we can shoulder our increased responsibilities in the period that immediately opens before us, then we can laugh at all difficulties.

And all the quicker can we step through that door that leads to all the things that we believe in, and that we are banded together to achieve.

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**NEW EQUIPMENT**

We print below illustrations of photographic (stills) and sound equipment which have come to hand from the G.E.C. and Western Electric, respectively. One illustrates typical G.E.C. Photographic Studio Lighting Equipment shewing easily portable distribution box for safe handling of the apparatus. The other is a Western Electric Mixer Wagon showing "QB" recording channel.
OUR VAST EXPERIENCE HAS TAUGHT US THAT THE "AMERICAN MOVIOLA" IS THE MOST EFFICIENT AND UNIVERSALLY USED.

WE HAVE INSTALLED THESE AMERICAN MOVIOLAS WITH OTHER MODERN EQUIPMENT AND THE PRICE FOR HIRE OUR PRIVATE EDITING BAYS REMAINS THE SAME.

A CUTTING ROOM IN 1900

1937

86/88 WARDOUR STREET LONDON, W.1
GER. 6413 and 7481

86/88 WARDOUR STREET LONDON, W.1
GER. 6413 and 7481
Crowned Heads and Others
Twenty-five Years with Pathé Gazette

FRANK A. BASSILL

DURING the years' service which I have had with the Pathé Gazette Newsreel, I have a sincere and sentimental respect for the friendships I have made during that period, and the newsreel to which I have been attached for so long.

To give a record of twenty-five years in the same newsreel is perhaps similar to sitting with a crowd of chaps after a re-union dinner and searching over memories to find stories which we hope are new, but there are certain facts in that period which will remain with me for ever.

In the service of the Gazette I have been sent to nearly every country on the Continent, Egypt and India, and events crowd only too quickly into my mind when I recall these various incidents, but there is one thing which I am quite certain of, and that is that there is every bit as much romance and strangeness in real life as in fiction. I can sympathise with the chap who goes to his office at 9 o'clock in the morning and remains until 6 o'clock, from January until December. However, one must realise that there are two sides to every question and we, of course, only remember the good and forget the other side.

I joined the Pathé Gazette on November 11th, 1911, on the day the late King George V. left England on the "Medina" for India. On the same date in 1918, as an Official Cinematographer in France, I was called to the Town Major's office in Cambrai to make a picture of General Hugh Haig and his army commanders. On this occasion they were gathered together as the Armistice had been signed. The same evening I was among the German patrols outside Enghien in Belgium, and was asked by one named Schmidt to take over some guns. He said that he would be back at the Ritz Hotel in London in a month. On returning to C.P. (b) I was informed that I had broken the terms of the Convention of Armistice, and was threatened with Court Martial, as the following communication shows:—

With reference to your C.P. (b) of 16th inst., I have the honour to report that Lieuts. E. Brooks and T. Aitken, Official Photographers, and Messrs. F. A. Bassill and F. L. Wilson, Official Cinematographers, proceeded from Lille on the 14th instant with orders to accompany the Allied advance to Brussels and record the entry of the King of the Belgians, which was understood to have been fixed for the 15th. I understood that Messrs. Brooks and Wilson would go by Courtrai and Ghent and the other party by Tourna and Ath, but it appears they went together by the Tourna road to Enghien, where in the wake of some other British cars they passed the sentries and unexpectedly found themselves face to face with a party of Germans. As they were in a narrow road where it was difficult to turn their cars, they appear to have made the best of a bad situation, but it is regretted that photographs were taken; these will be destroyed.

The party returned to Enghien, where they passed the night 14th 15th, they appear to have met a D.A.P.M. of the L. Army Corps. On the 15th they again advanced towards Hal and again took photographs of German troops.

The whole of this affair, though in direct contravention of my instructions that no car was to go beyond the Allied line, must be regarded as in implicit obedience to the general order that the party were to arrive in Brussels immediately after King Albert.

I should, however, feel bound to request that these four gentlemen be tried by General Court Martial but for two considerations, viz.:- Lieut. Aitken having this day proceeded to England on duty (and being about to resign his commission on grounds of ill-health, greatly aggravated by his devotion to duty during the continuance of hostilities), while Messrs. Bassill and Wilson are attached to this Section by the Ministry of Information. It follows that Lieut. Brooks and the A.S.C. Drivers are liable to incur all the blame, although the responsibility for this foolish action is equally shared by the four operators concerned. In the second place, I feel that more harm is likely to arise from the publication of this story than was probably done by the actual adventure.

These gentlemen are now thoroughly aware of the possible consequences of their folly, and I hope that you
1. Schmidt, who, unwittingly, almost caused a Court Martial.

3. Frank A. Bassill.


2. Zeebrugge Mole.

5. Frank Bassill in the first British car to enter Ostend towards the end of the War (October 17th, 1918).
will consider that they have been adequately punished by my reprimand.

I have the honour to be

Sir, Your Obedient Servant,

Captain, i.e. Photographic Section, General Staff.

16th November, 1918.

To be present on H.M. ship “Princess Royal” when H.M. King George V. knighted Vice-Admiral Pakenham, and only nine feet away from the actual ceremony, was a most embarrassing position for me. I felt that I was intruding on a very intimate and solemn occasion.

H.M. King George V. was always very considerate to us. I remember once when the Grand Fleet called, I had arranged all the crew of the “Queen Elizabeth” on the gun turrets, and His Majesty and Earl Beatty, Commander-in-Chief, suddenly appeared on the quarter deck and stopped in front of me. King George asked me whether I was getting some good pictures. I replied that as a matter of fact the camera had become jammed. He threw back his head and laughed heartily, and said to Earl Beatty, “We have broken the camera!”—but the fact remains that their departure was delayed until I had re-threaded my camera and the picture had been taken.

To recall a few instances from war days. I was lucky enough to get into Zebrugge while the “Intrepid,” “Iphigenia” and “Thetis” were in the channel and the piers still burning, and Captain Hamilton-Benn of M.L. 532 took me to the end of the Mole and said, “Touch nothing! Something will go up very shortly.” In army parlance—“Booby Trap.”

At the end of my journey to Cologne to record the entrance of our troops to take over the bridge-heads, I stopped at a place called Zulpich and demanded billets for myself and Jack Brooke. We were received and entertained handsomely, but in the morning Herr Schaller, the owner of the house, showed me very proudly his factory, which he was altering from a shell-case factory to boot making. Whether he misunderstood my keen interest or not may have been the reason for the following letter:

SCHUHFABRIK SCHALLER

Zulpich, den 7 Dezember, 1918.

Mr. Frank A. Bassill,

Official Kinematographer of the British Armies.

In France.

Dear Sir,

I don’t know if the address is right written, but I hope so.

I would ask you something: don’t you know an English Shoe Factory, which makes heavy boots and shoes for streetwear? I should like to become General-Agent for Germany. Of course, it would be very easy to sell these shoes with my Workmen-shoes together.

This may be a good business just the same for You, as for me. I hope, You will find any occasion to let me know if there is any possibility.

Yours faithfully

(signed) John Schaller.

In the United Provinces of Central India, with H.R.H. Duke of Connaught, my seat for a Tiger Hunt was an elephant, and four hours on that would satisfy anyone. The elephant preferred to go down and up the other side of a ravine instead of taking a doubtfully safe bridge. Each time he reached the top of his climb, he just cleared his throat and covered me with a very sticky mess which, coupled with the extreme heat, soon conveyed to me that if I wanted to remain popular I must keep a fair distance from my friends.

The stage was set in a small clearing in the jungle. Four shooting platforms made of bamboo were erected, and we settled down to wait, with the regular tap-tapping of the beaters gradually getting louder and louder. Then we were treated to one of the greatest acrobatic demonstrations I have ever seen in or out of a circus, by herds of monkeys climbing with tail, hand and foot, swinging screaming through the trees, so many of them in fact that they created what seemed to me a strong breeze. Then stag or “sambre” gave a wonderful jumping performance, but no tiger—so I had to look forward to another little jaunt back on the elephant.

Another time I was making a film of a terra-monta—an earthquake in other words, near the Marble Hills in Italy. I was in Carrara when the earthquake occurred, and by the time I arrived on the spot, all that was left of the city was a heap of concrete slabs and plaster. Old peasant women were sitting on the spots where their homes once stood—wailing and refusing to leave the wreckage of where their homes had been for so many generations. It was a pitiful sight, and great cracks appearing in the road made me anxious to get back.

I would also briefly sketch such things as the Siki-McTigue fight in Dublin on March 17th, St. Patrick’s Day, where there was a little trouble between the Free State troops and the rebels. The venue was a theatre in O’Connell Street, and the whole vestibule was occupied by men with very big revolvers, determined to have a peaceful night. One of my colleagues, Ken Gordon, slept on the equipment all night, and we were escorted to the boat in the morning. Also, an aeroplane flight from Belfast with another colleague, Jack, with the picture of the opening of the Union Building by the King, when we dropped in a ploughed field at Weedon, and still got our picture back to London to publish the same night.

The advent of sound has certainly added a lot of entertainment to our section of the business, but it has done away with the travelling part of it. I cannot help reflecting, however, that if sound had been applied to some of the early pictures, such as the Investiture of ex-King Edward as Prince of Wales in Carnarvon Castle, with all its wonderful setting, ceremony, singing and cheering, it would have remained one of the most impressive records of the cinema business.

(Copyright in all countries by Frank A. Bassill and The Cine-Technician.)

Brunel’s Play for Stage Presentation

“Only Yesterday” (reviewed in our last issue), a play by Adrian Brunel, adapted from the film, “Blighty,” by the author and Ivor Montagu, is shortly due for a London stage presentation in the West End. We wish every success to Mr. Brunel’s first theatre venture and may his play have a long and remunerative run.
Lab Topics

This Week’s Fairy Tale

Once upon a time there was a film lab, built; no expense was spared to make it the most up-to-date job of its kind, and the manager was paid a fabulous salary. Then a little bird whispered to the manager: “There’s no need to pay big wages to your staff; after all the machines do the work and all they need is feeding with film like one feeds coal to a fire.” So the manager engaged a lot of boys and girls at 1/- per week, without overtime, out of which they had to buy their own shovels to feed the film to the machines.

Now the factory started into production, work went on day and night, the staff worked like a lot of ants, and the manager fell asleep at the trade shows. Millions of feet of film were churned out; and every picture was a Masterpiece of Processing—but alas! the sandpaper bath method wasn’t appreciated, and so the end.

Reprints

I am sure few will oppose the statement that the greater percentage of waste in the laboratories is due to “sparkle,” caused mainly by dirt on the negative being printed through to the positive. The mere acts of cleaning and dusting a negative causes the celluloid base to become statically charged with electricity. Consequently, as soon as a negative is pulled down into a bin or exposed in any way to the atmosphere, any dirt particles in the vicinity are magnetically attracted to the film. So you see how important it is that everything which comes in contact with the negative should be spotlessly clean. It has always been my contention that every printing machine should be fitted with suction apparatus for both sides of the negative and positive, just prior to entering the gate of the printer. By sucking away the dust at this vital point at least 25 per cent. of the present waste would be eliminated.

Method

I t is often an advantage to pool ideas, and because of this I think it would be interesting to find out the way things are done in the various laboratories in running the different departments. From the data thus collected a detailed account of what is considered the best method could be published in the Journal. I suggest that those who are interested should send me a description of how their departments are run. If this request receives sufficient response, I propose to deal with one department in each issue of the Journal. I will start, in the next issue, with the negative cutting room. Let me know how your lab handles the job from start to finish; pay particular attention to the breaking down, filing and storing of the negative before assembly, also to the handling and filing of negative cuts. These are the important items, because on them depends the time factor and to a large extent the condition of the negative when finally assembled after recuts have been made. Address communications to: Lab. Topics, c/o The Cine-Technician.

A Printer’s Lament

The following is the work of Mr. M. J. Soper. He suggests that it should really be set to music and sung by the dark-room chorus to the accompaniment of film bins and take-up flanges:

A Printer’s Lament

I was seated one day at my Printer,
Eating a roll and some cheese,
When desire for a “make” came upon me
And my chin nearly fell to my knees.

I didn’t know how I was printing,
The subject was also unknown,
But I dreamed that Laboratory workers
Were at last coming into their own.

Chaps sitting in chairs with their names on,
Names also were tacked on the door,
We even wore “plus-fours” and “berets”
And chewed gum, like they do on the floor.

We yelled “Quiet please” and “O.K. boys,”
But nobody bothered, I’m sure,
We were loud-voiced and rude, our opinions were crude,
You know, like they are on the floor.

We got tickets for every trade show;
Our salaries started to soar;
Big noises discovered that “creative brains”
Were not only found on the floor.

The gatekeepers ran when our motors drew up,
Touched their hats as they opened the door,
And we gave them big tips, such as they never got
From the people who work on the floor.

But alas, such state couldn’t last very long,
Which can be enjoyed only by few,
And the sound of the “buzzer” then shattered my dreams,
So I woke, “cos my “end” had run through.

A Grand Carnival Whoopee

A.C.T. Laboratory Section held its first Carnival Dance
on February 26th, at the Imperial Hotel, Russell Square.
It was a wonderful evening. Workers from a dozen labs
were present and there were many reunions of people who
had not seen each other for years, some for twenty or more.

A letter from one of those present, on behalf of himself
and his “fellow-confederates,” aptly sums up the evening:

“I do not know or care what the Hotel Imperialites
thought of us. I know that I was abounding with
hectic hear-says, for which my apologies will be forth-
coming if necessary. However, I want to say how
much we all enjoyed ourselves and my thanks are
due to all concerned (although I spent about a week’s
pocket money) for an evening that was more than an
enjoyment. Hoping we shall exist and still live with
the humble wages of an industry that talks in millions
and gives in pennies, to see us all together, living for
another night as, shall I say, imaginative aristocrats.”

Great thanks and appreciation are due to Vic Filmer
and his Pathé Studio Orchestra for so joyously entering
(Continued at foot of next page).
The Last Link

THE picture may approach a masterpiece, but if the projection fails, the picture can hardly help failing. The projectionist with his projection equipment is largely the master of our photographic destinies.

The above was quoted by Richard (Dick) Bartholomew some years ago. Since then the projectionist has had his equipment increased with sound. Admittedly sound engineers keep this up to scratch, but the chief projectionist is still held responsible for its upkeep. Do all the studios realise that from the producer to the editor, from make-up to the camera, from the star to the sound, right from top to bottom, all their efforts are shown by the projectionist, and without his constant help, where would any film be? Even with a feature or a super-film in the cinema, the projectionist is the last link in a great chain, because concentrated within the spool-box is the consummate artistry of playwrights, actors, producers and cameramen. Success depends on the diligence and craftsmanship of the projectionist, and according to his anxious care is the enormous expense of a super-film justified.

The cinema has the task of taking thousands of fellow-men and women away from the cares of an often drab and colourless life, transporting them on a magic carpet to a land of make-believe, sending them away refreshed to tackle the world of reality with renewed zest and courage. But if the showing of a film is bad they do not get that feeling. This is the responsibility of the projectionist, and not of the manager, producer or artiste, no matter how good the film may be. The same applies to the projectionist in the film studio, who is the first link in the long chain.

Adolph Zukor, in the "Motion Picture Herald," published the following article:

"There comes in the career of every motion picture that final occasion when all the artistry, all the earnest constructive endeavour of all the man-power and genius of the industry, and all the capital investment, too, must pour through the narrow gate of the projector on the way to the fulfilment of its purpose, the final delivery to the public.

That delivery is a constant miracle of men and mechanism in the projection rooms of the world's fifty thousand theatres. That narrow ribbon, thirty-five millimetres, flowing at twenty-four frames a second through the scintillating blaze of the spot at the picture aperture and coursing at an excitingly precise 90 feet a minute past the light slit of the sound system, demands a quality of skill and faithful, unfailing attention upon which the whole great industry depends.

The projector lens is the neck of the bottle through which all must pass. The projectionist presiding over that mechanism is responsible for the ultimate performance upon which we must all depend.

The projector must not fail, and, more important still, that man must not fail or permit it to waver in its performance. It is to the tremendous credit of the skill of the modern projectionist that perfect presentation of the motion picture upon the screen is to-day a commonplace, a perfection that is taken as a matter of course."

* * *

After reading that you, whoever you may be, must realise that the projectionist does exist. I myself have had the awful feeling of being ignored. Directors, editors, and cutters, have left the theatre without even saying "We've finished, thanks." Many directors must do their work after the floor has broken, thereby must work perhaps 5-6 hours after rushes have been shown, or production finished. We in projection must stay to show that film; many a time we are forgotten and passed over, but many have left with thanks, which makes the projectionist feel happier and lighter of heart.

I would like (and am certain that my colleagues at other studios would also) to be recognised a little more as a body of men who work to give the best co-operation possible (not forgetting there are others besides the chief, his assistants). We have our moans and grumbles every day, but there is a saying, "a happy man is happiest when he has something to grumble over." Projection, BackProjection, Re-recording, Synchronous Projection, Post Recording with Projection. Producers, directors, music directors, editors, cameramen and sound, all are our bosses in one way or another, and we are at their beck and call from 9 a.m. till—?"
PRECISION EQUIPMENT.

FOUR-WAY SYNCRONIZER

FILMS & EQUIPMENTS LTD.
145 WARDOUR ST. :: LONDON, W.1.
B.P.P.A. First Annual Dinner.

Illustration at top of page is from menu of first annual Gala Night, held at Criterion Restaurant on February 15th, of the British Press Photographers’ Association. Three hundred cameramen and their guests were present. Mr. William Horton (The Times), Chairman of the Association, presided and many prominent personalities in the press and film photographic world were present. Mr. Horton, in proposing the toast of “The Press and Newsreel Photographers,” briefly outlined the aims of the B.P.P.A., the formation of which was being celebrated by the evening’s function. Mr. Frank Bassill, Pathé’s Newsreel ace, in reply, stated how glad the film cameramen were to support their news colleagues and spoke of the happy spirit of comradeship existing between all cameramen on the road.

Mr. Frank Derry, Cunard-White Star Publicity Chief, replying to the toast of the visitors (proposed by Mr. Leslie Burch), paid a tribute to the work of press and newsreel photographers, declaring that in the pictorial “cover” of shipping news they were helping to keep British shipping on the map. Dinner was followed by several hours’ dancing and cabaret, including Britain’s No. 1 Pianists, Bruce Merrill and Harry Foster, in amazing syncopated duets.

A happy evening was rounded off by a visit from those “cads,” the Western Brothers, who made a special midnight journey from the provinces in order to join in the fun.

Facts from America.

American newsreel cameramen are organised by affiliation into the I.A.T.S.E. and M.P.M.C. of the United States and Canada, says the “International Photographer”—also in his local Union, depending on his territory. Through this medium there has been established a standard scale of wages and a definite set of working conditions. Were it not for this beneficial understanding between employer and employees, the basic reason for working as a newsreel cameraman would be in a state of uncertainty without end, as it is in England.

Newsreeling the Crown Jewels.

One of the most interesting jobs during the last months was the filming in the Tower of London of the crown jewels, this being a rota for all reels. The finished job got a good footage used.

The “gang” arrived at the Tower at 8.30 a.m. with cameras and lamps and were admitted to the Jewel House about 9 a.m., when the four 2 kw. sunspots were coupled on to the supply by the Office of Works. Lights tested and a few shots taken of the “cage.” Then the officials arrived, representing the Lord Chamberlin, O.C. of the Tower, the Chief Warder, police and other officials, in whose joint presence the jewels can be unlocked.

Then the iron doors at the entrance to the Jewel House were locked and each piece of the Royal Jewels brought out separately to be filmed. A still photographic background was used and the crowns, etc., placed on a turntable, each piece of jewellery being photographed in long shot and then details picked out with long focus lenses.

Everything went to time and by mid-day the jewels were locked back in their quarters, the alarms set, the jewels checked and the iron doors once again opened. The most striking thing filmed was the huge diamond in the sceptre.

All the officials were kindness itself, giving every help to make a grand picture. The value of these jewels makes this the most expensive film ever taken in the world, as the commentator remarked.

International Federation of Newsreel Cinematographers.

An International Federation of Newsreel Cinematographers (Union Internationale de la Presse Filmée) has recently been formed. A.C.T. has affiliated through its Newsreel section and Mr. J. C. Gemmell, Newsreel Chairman, is its Committee representative. Other countries to signify their support include Austria, Belgium, France, Germany, Holland, Italy, Poland, Greece and Palestine. The President is M. Henri Piron, President of the Association Belge de la Presse Filmée.

The principal object of the Federation is to safeguard the professional interests of all persons engaged in newsreel work. Questionnaires have been circulated to all supporting bodies to ascertain information on professional facilities, customs regulations and other matters. The replies will form the basis of a Report to be presented to a Conference which will be held in Paris about the middle of June and at which A.C.T. hopes to be represented.

Tenax et audax.
The Gold Rush

"Money Behind the Screen," a Report prepared on behalf of the Film Council by F. D. Klingender and Stuart Legg (Lawrence & Wishart, 5/-) reviewed by

GEORGE H. ELVIN, A.C.I.S.

It is the more dangerous to muddle along in an industry in which the differences between showmanship and racketeering is often slight and may pass in the confusion unnoticed. . . . With, say, fifty thousand pounds to spend on a picture it is important to know that only twenty thousand pounds will be left, after the extravagances and the rake-offs, to go on to the screen," says John Grierson in his introduction to this illuminating publication. The book aims to supply the answer to who owns "The Money Behind the Screen," of much more interest to film workers than may be at first apparent. Technicians and others who have collected a number of bouncing contracts during their film career will find at least part of the reason why in this book.

Mushroom Growth of Independent Production

A.C.T. has frequently complained of the formation of independent production units, most of which are private companies with relatively insignificant capital resources of their own. Production is financed by short-term advances against the expected returns from films about to be produced or in process of production. An analysis of the particulars of charges registered during the first ten months of 1936, which are not necessarily complete, as published in the Kinematograph Weekly, show that the total amount raised in the form of guarantees (and in a few instances in that of debentures) by production companies, other than studio enterprises, was in excess of £4,000,000.

The comparative ease with which it has been possible to raise money for production without many of the customary safeguards which might exist in other industries has been a contributory factor to the large increase of new companies registered during the past few years. New film, cinema, etc., companies were registered at the following rate during the first twelve years, according to particulars published in the Kinematograph Weekly and Kinematograph Year Book:

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Renting</th>
<th>Exhibition</th>
<th>Miscellaneous</th>
<th>Total</th>
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<tr>
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<td>15</td>
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<td>26</td>
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<tr>
<td>1926</td>
<td>21</td>
<td>25</td>
<td>138</td>
<td>26</td>
<td>210</td>
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<tr>
<td>1927</td>
<td>26</td>
<td>17</td>
<td>143</td>
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<td>3</td>
<td>150</td>
<td>58</td>
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<td>1930</td>
<td>36</td>
<td>4</td>
<td>176</td>
<td>48</td>
<td>264</td>
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<tr>
<td>1931</td>
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</tr>
<tr>
<td>1936</td>
<td>87</td>
<td>7</td>
<td>196</td>
<td>47</td>
<td>337</td>
</tr>
</tbody>
</table>

(10 mths.)

* Including a small proportion of renter-producers.

It will be seen that 640 production companies have been registered during this period. Not more than about three per cent. are in production at the present time. Several of them have never completed a single picture. A still larger number have never made a second film. It is impossible to calculate the total sum due to technicians and other workers in respect of salary arrears or broken contracts through financial failure of production companies. But it is a large amount, and owing principally to the methods of financing production of many of the independent producers it is irrecoverable and hopeless to pursue claims. A recent case where A.C.T. members under contract to the company were concerned, showed, upon winding-up of the company, liabilities exceeding £11,000, and assets of £30 12s. 3d. (£3 2s. 3d being electricity deposit returnable and £27 10s. 6d due from one of the directors to the company). Nearly £500 was due to technicians under contract, none of whom received a penny. In this case the film was not even commenced.

Profits But No Dividends

There is another point of great importance to employees. Salary increases may be opposed on the grounds that shareholders are not getting dividends, and reductions imposed because a company is apparently working at a loss. But this does not necessarily mean that profits are not being made. Money Behind the Screen summarises

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the position concisely: "An analysis of earnings, in so far as these are published, shows that where there are any profits in the production and distribution sphere, these are not, on the whole, benefiting the ordinary shareholders, but the fixed interest bearing security holders. . . . There thus arises the curious situation that at least in one of the spheres most affected by expansion (production) the ordinary shareholders are not making any money even in the boom period."

**British and American Film Finance**

Inter-locking and subsidiary companies makes it extremely difficult to unravel the finances of big corporations, but the Film Council appears to have achieved the almost impossible. Details are given of the finances and financial control of the American and British Film industries together with directorate and shareholding details which do succeed in conveying a clear impression of the vast ramifications of film finance.

Film workers should study this book. "World Film News" articles upon which it is based have, as we all now know, caused a big stir. Let us hope it has made such an omelette that it will be impossible for the eggs to get back into their shells. John Grierson's introduction summarises the situation succinctly:

"If, through the Film Commission proposed by the Moyne Committee, order can be brought to the finances of our work, mismanagement eliminated and this rush of promoters abated, it is the creative worker who will most have reason to bless a measure of government co-ordination. We shall have lost an Arabian Night's entertainment and many of us, who have too much of the cinema in our blood to dislike even its insanities, may shed a sentimental tear for the old mad days. But we shall, no question, get on with the work we want to do. Under the conditions attested in this story, that is impossible."

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**Correspondence**

**Give Us Credit**

**Dear Sir,**

Collingburn's article in your last issue confined itself to queries in film production. May I draw your attention to still another matter before we can say "O.K. for Stills."

If you have goods to sell they must be advertised and everyone knows that a set of really good stills is of far greater value in selling a picture than pages of letterpress. Indeed they will, in nine cases out of ten, sell a bad one.

If it were not for the long-suffering stillman weekly film papers, etc., would be non-existent. It is, therefore, high time they realised that the majority of the film-going public don't buy the papers for their letterpress but for the pictures. They like to see what is going on. So why not give us the credit we deserve by acknowledging our work, which, goodness knows, is hard enough. If the press had to pay fabulous fees for publicity stills it would be a different matter—but they don't. Giving credit to the stillman would not make any appreciable difference to the cost of the layout, nor labour involved. In other words, we enable the press to sell their papers and get little or no thanks.

It is not my intention to run down the press. Far from it. With photogravure it does our work full justice. But what I do want to see is a little more appreciation towards the still cameraman, and if this can be achieved it would do us all a tremendous amount of good. I am confident that other stillmen agree with me.

*Yours etc.,*  
*Eric Coop.*

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**78 Studios, Production Companies and Laboratories contacted**

**671 Technicians through the A.C.T. Employment Bureau during 1936**

We can supply all Technical Staff Requirements for

- **Camera**
- **Sound**
- **Art**
- **Stills**
- **Floor and Production Laboratory**
- **Scenario**
- **Newsreel**

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(Licensed Annually by the L.C.C.)

A service of the

**ASSOCIATION OF CINE-TECHNICIANS,** 30 Piccadilly Mansions, London, W.1

'Phone: GERRARD 2366
What Your Association Means

By RALPH BOND

THE almost unanimous decision taken by the members at the Annual Conference last May to seek affiliation with the Trades Union Congress was an event of no little importance in the history of A.C.T. It means that our members are convinced that there is everything to be gained by associating with the wider Trade Union Movement.

Among professional and technical workers there has occasionally been a tendency to "look down" upon the T.U.C., because of its overwhelming preponderance of manual workers, but this outlook is fast disappearing under the pressure of hard facts. Technicians can no longer afford to stand aloof as somewhat superior beings. In our own industry, co-operation in the studios between cine-technicians, electricians, carpenters and many other grades is necessary as part of the day’s work. What possible objection can there be, therefore, to extending this co-operation to the trade union field? Through the Trades Union Congress it will be possible for all employees in our industry to co-operate in their mutual interests, without in any way interfering with the right of each separate organisation to conduct its own business in its own way.

The advantage of T.U.C. association has been recognised by many other groups of professional and technical workers, teachers, doctors, health officers, insurance workers, film artists, wireless and cable telegraphists, engineers, and shipbuilding draughtsmen, press typesetters, compositors, etc., and to-day the T.U.C. has an affiliated membership of nearly 3½ millions, organised in 214 unions. This is a far cry from the time—not so many years ago—when trade unions were illegal bodies whose members were liable to fines, imprisonment, and even deportation (as in the case of the Tolpuddle Martyrs) for the "crime" of possessing a trade union card. These early pioneers were loyal to their faith and their ideals and eventually compelled the Government of the day to recognise the right of every worker to belong to his trade union. In 1868 the Trades Union Congress was formed so that all unions could combine to obtain badly needed improvements in their wages and conditions, and despite many vicissitudes it still remains the one central co-ordinating body of the British Trade Union Movement.

If, as we hope, we are accepted, certain additional responsibilities will fall upon us all. It is not simply a question of paying affiliation fees, but, more important, of loyalty to those principles upon which the Trade Union Movement has been built. And that means—above all—loyalty to our own Association, the A.C.T.

To-day our membership stands at a higher figure than ever before. There is not a studio or newscast company without its A.C.T. members, and in most they are a majority. Our laboratory section has a fine and growing body of members. But the larger our membership the greater are the tasks and responsibilities falling upon the General Council, the Secretary, and the Organiser.

Complaints are sometimes received from members that they are unaware of what the Association is doing. The General Council has recognised that there is some truth in this, due largely to the fact that the studios are widely scattered and consequently difficult for the Secretary to visit at frequent intervals. The General Council, to meet this difficulty, has appointed an Organiser (Reg. Bartlett), who by now will be known to many of our members, and who will be available at all times to visit studios and laboratories and render advice and assistance. If an emergency arises at your studio, 'phone for him. He's always available to help you.

Ours is, in every sense of the word, a democratic organisation—and every studio and laboratory is entitled to two representatives on the General Council. Studios and laboratories should send their representatives regularly each week, and those representatives should, as a duty, report back to their members. There would be no excuse then for lack of knowledge of the Association's very considerable activities.

The new year will be an important one for the A.C.T. The degree to which it can be made our most successful year to date depends as much upon the rank and file as upon the leadership. The strength of any organisation, in the last analysis, depends on the loyalty and co-operation of the membership, on their interest and participation in the union's work. Don't grumble in a corner. Let the General Council know what's worrying you. They try very hard to do the best for all of you. It's up to you to let them know what you think that best should be.

We have every reason to be proud of A.C.T. Let our pride take the form of loyalty to it in all things, of cooperation between members and with our fellow trade unionists in other unions, of observance of decisions taken by democratic majority, and above all of a sense of willing responsibility to the organisation which has in the past, and can even more in the future, protect our interests as technicians.

French Technicians’ President Visits A.C.T.

MONSIEUR BERTHOMIEU, President of the Federation des Artisans Francais du Film, has recently directed his first British film, “Girl in a Taxi,” for British Unity at Ealing. While in England he took the opportunity to call upon A.C.T. and convey through Mr. Elvin greetings to British technicians. It was interesting to receive details based upon personal experience of the workings of the new Labour regulations (40-hour week, no overtime and Sunday work, etc.) introduced through the initiative of the French Government. M. Berthomieu agreed that the new conditions were to the general benefit of studio workers, particularly from health reasons which directly resulted in improved quality, a fresh employee naturally producing better work than one hopelessly tired out through long hours and a seven-day week. There were, of course, occasions when these stringent conditions hampered creative work, but there is no doubt that employees are happier, a condition which invariably leads to better work. It will be interesting to see how the quality and quantity of French production is affected after, say a year's trial, of the new conditions.

M. Berthomieu told us that he will carry away very pleasant recollections of his stay in England and we are pleased to hear from our Ealing members that, on their part, it was a joy to work with their distinguished French colleague.
Wanted—A Staff College

By C. A. LEJEUNE

(Reprinted by kind permission from The Observer, January 24th, 1937)

We welcome Miss Lejeune’s article, which advocates a development persistently urged by A.C.T. Our only comment is to stress the necessity of controlling the inflow into the industry (as is done in printing and other trades with apprenticeship schemes) which the operation of such a scheme would provide.—Editor.

THE British film industry needs a Staff College. That is one fact that has emerged plainly from the rumours, the panics, and the hallucinations of the last weeks.

The film is possibly the only major organisation in this country that has no recognised training school for all branches of its employees. The big stores, the police force, the military services, the post office, the agricultural industries, all have their training centres. Theatre and music have their authorised academies. Even the B.B.C. has lately taken up the floor.

The film industry, apart from a few specialised experiments, like the technical training course at the Polytechnic, has no centralised training-ground for young talent. Occasionally young men, luckier or more pertinacious than the rest, manage to break their way into the studios and pick up some scraps of knowledge for themselves on the floor. But these incursions are rare. For one man with talent, who gets past the gatekeeper, there are a hundred who hanker after the cinema for a time in vain, and, finally, take a job in their friend’s garage or their uncle’s cotton business. In the meantime the British studios, which ought to watch with care every penny of their expenditure, are paying £10,000 a picture to American stars, £500 a week to American scenario-writers, and £100 to American or German camera-men, simply because there is not a big enough supply of first-rate English stars, writers and cameramen to supply their needs.

A central college, heavily subsidised by the film industry, which would make us independent of Hollywood in the next generation, should prove in the end to be a rich investment. Why should not our major producers—Mr. Korda, Mr. Oster, Mr. Maxwell, Mr. Wilcox, Mr. Schach, Mr. Dean and Mr. Balcon—allocate a certain sum of money each week for the upkeep of some such place? It could be housed in one of the many superfluous studios, relics of over-building in this country, and serviced from the technical staffs of the contributory organisations. “Short ends” of film, left over from the products of the big studios, could be supplied to the students for practice work. Dramatic pupils could be tried out in studio productions. Stories to be used by the major studios could be set as subjects for scenario-writing. And periodically all students would be taken to Denham, or Elstree, or Ealing, for a thorough training in all departments of film-making and for practical work, under supervision, on the floor.

If the British film industry is ever to be anything more than a cut-throat business, some such plan will have to be ultimately adopted. It is all very well to argue that here, in London, we are near the source of all art and talent; that the studios can take their pick of West End actors and popular writers; that, on the doorstep of Mr. Wells and Mr. Gielgud and Sir Thomas Beecham and the Old Vic, we have merely to reach out and grab for culture. The film business, to be successful, must be learnt from the inside and from the beginning, slowly and painfully. No man who spends his nights in a London theatre and his days in an Elstree studio can do full justice to either job.

The world of Hollywood is a little, enclosed world, where the actors are film actors, and the writers film writers, and the musicians film musicians, and even a Hugh Walpole learns a new alphabet for his stories. Only in Hollywood, thousands of miles from the capital city, a non-existent town in a world of fantasy, are such intensive conditions possible. They have never existed in America’s Long Island studios, within reach of New York. They will never exist in the studios of Bucks and Middlesex and Herts, within reach of Shaftesbury Avenue and St. Martin’s Lane. Starting without Hollywood’s advantage of isolation, we have got to create our own intensive training centre for the cinema. It can only be done through some authorised college, where films, in all their different aspects, are made a whole-time curriculum. It must be run, or it is useless, with the full practical co-operation of the film industry; there must be no fancy stuff about it, no amateurism, no semi-official institutionalism or pedantry.

With a working college planned by the trade, helped by the trade, and used by the trade, British producers would find themselves ultimately insured against most of their troubles. It would cost money, but split between five or six companies, all mutually benefiting, the financial risk would be a small one. Half the cost of any recent British film failure would get the thing going nicely. And if in the course of one year it produced one potential Donat, one future Jessica Matthews, one budding Hitchcock, and one cameraman like Fred Young, it would have fully justified the expenditure. If in addition to this it produced one first-rate scenario writer, it would have done something hitherto unknown in the story of the British industry.

I appeal to Mr. Korda, Mr. Schach, Mr. Maxwell, and the rest to make good their claims that they are ready, in every way, to help the British film to prosperity. No trade can be prosperous if it is not continuously fed with a supply of fully-trained workmen. And the British film industry is the only one I know in which the man who wants to learn to work is denied the opportunity to try.

A Pat on the Back

“To-Day’s Cinema” paid a nice compliment to A.C.T. members in reporting the recent lecture by Capt. Round, which will be published in our next issue. “Onlooker” wrote:

“Pretty big gathering of technicians at a meeting of the A.C.T. on Thursday night... . Trade technicians are a pretty energetic lot. They come straight down from their studios late at night after a hard day’s work to attend a lecture which might throw a little light on progress, for the betterment of future British films. The A.C.T. are doing good work in arranging these affairs.”
Film Training and Production in the U.S.S.R.

By H. P. J. MARSHALL

The following article is based on a lecture given to the Association of Cine-Technicians by Mr. Marshall on February 18th. It will be of particular interest to readers in view of Miss Lejeune's article on the opposite page.

Mr. Marshall, a member of A.C.T., is the only British person (and the only foreigner) who has passed through the U.S.S.R. Institute of Cinematography.

The majority of intending technicians in film production in the U.S.S.R. have to take a three-year course at the various Institutes of Cinematography (which exist in Moscow, Leningrad, Kiev, Odessa, etc.). Only those who show by their work that they are suitable are allowed to proceed to employment in the film industry.

Every citizen has, of course, an equal opportunity to enter the Institute and a stipend is paid during training, averaging 350 roubles a month. Living accommodation is provided and students live in the various student-towns built around Moscow, blocks holding about 10,000 persons, each of whom now has a room to himself or herself. All jobs are open equally to both sexes, and the film industry is no exception. Each student has two months' holiday a year, generally spent in rest homes or sanatoriums, first choice being given to the best workers.

Between 1935 and 1938 the Institute aims to graduate 65 directors, 45 cameramen and 40 scenarists, the average study course being 4-5 years.

Method of Teaching

In "Life and Letters To-day" (Winter 1936-1937 number), Eisenstein outlines his programme for teaching the theory and practice of film direction. He says that not one of the generally accepted academic methods of teaching is adequate for teaching film direction. Film production is specifically distinguished from other creative designs of modern furniture, interiors, and exteriors; specialising in fulfilling individual programmes. Work recently completed ——— at Oxford University, Cambridge, Berkeley Square, Etc.
arts, despite the fact that they have much in common. Study is divided into two divisions:

Division I.—Work on Oneself.

1. Developments of the Necessary Physical Requirements.
   Physical culture, scenic movement, voice training and direction, drawing and sketching, etc.
   Problem of reconstruction of reality, work of analysis and synthesis, practical reconstruction of events, etc.
3. The Creative Processes.
   Creative methods and technique of work, self-criticism, study of creative personalities (Lenin, Marx, Edison, Ford, Balzac, Tolstoy, etc.), study of Western and Soviet masters of the theatre and cinema, etc.
4. Work in the Group and on Production.
   Tact and tactics in dealing with people—Bourgeois methods and proletarian approach.

Division II.—Work on Film.

The course is practical as well as theoretical, and part of the training is obtained outside the Institute, in which students are allowed to choose their own subjects.

1. The Director in Production.
   Study of all grades of work—production, scenario, editing, camera, music, art, acting, release of film, rental, distribution, etc.
2. The Director in Western Countries and the U.S.S.R.
   Study of films:
   (a) The Cinematograph of the West.
       Adventure, Melodrama and naive realism, comedies, historical, German expressionism, avant-garde and all other types of film.
   (b) Soviet Cinematography.
       Old masters and post-revolutionary films.

Employment Conditions

The nature of government in Russia makes for many differences in labour organisation and employment compared with other countries. On the floor, for example, there is the same discipline as in British studios. Afterwards, however, if a worker does not agree with the methods employed or the director's attitude to the workers, there is full liberty of expression and criticism at production meetings where all grades are represented. Representative conferences of the whole industry are held annually, at which the same freedom exists.

Still from "New Gulliver," directed by Ptushko, photographed by I. Remkov.

The working day is from 7 to 8 hours for a five-day week. Annual holidays are from three to six weeks, depending upon the type of work. Laboratory workers, for example, have longer leave than those employed in less unhealthy occupations. Wages are paid whether on or off production and during illness. Unemployment is nonexistent. All workers are employed by the State, whose responsibility it is, and not the workers, if there is no production.
Production Difficulties

In 1936 only 45%, of the film programme was fulfilled, while practically every other industry in the Soviet Union over-fulfilled its programme.

One of the greatest difficulties is due to the State's concentration during the last five to six years on heavy industries, with successive scarcity of labour and materials for other activities. The five-year plan schemed to concentrate on heavy industries and cut down on certain imports, including films and all luxuries. In 1931, however, only 100 million feet of film was produced, but in 1936 this figure had increased to 350 million feet and will probably show an increase of 150% per year. The second five-year plan is paying special attention to light industries and films should, therefore, jump ahead.

The Future

A complete reconstruction of the film industry is now taking place and new studios are being built. Three thousand more cinemas have recently been equipped with sound, and the total so equipped is now approaching 40,000.

A Soviet Hollywood is being planned in the Caucasus and initial production will be 200 feature films a year. The climate is ideal. There are 300 sun-days a year and every conceivable kind of natural location can be found within a radius of about 25 miles, including jungle, arctic, sea, prairie, hills, mountain and river.

The American method of organisation is being copied in many respects. For example, a greater division of labour is planned. Formerly, scenario writers were unknown, as most directors prepared their own scenarios. Scenario departments will now be set up. Colour and television are not being neglected in this development.

General Information

Many interesting questions were asked which drew forth the following information:

Nearly half of the films shown are home products. Very few American films are shown owing to renters requiring block bookings. Chaplin films are a great success, particularly "City Lights" and "Modern Times."

A special institute of Psychology exists to make extensive research in finding out the public's reactions to different types of films. Stars are not created and do not have stories built round them as is done in America and England.

(Continued at foot of next column).

Manor House Hospital

Advantages Available to A.C.T. Members

Many of us fight shy of hospitals, either because we have a natural aversion to all institutions or because we think that by paying nursing home or specialist fees better treatment is secured. It is not our place to argue the truth or otherwise of this tendency, but we do know that such reluctance and belief is definitely untrue of the Manor House Hospital—one that is probably unique both in its management and character.

The Great War was responsible for the Manor House Hospital; Peace Time has seen that the good work done then has been continued. The casualties of peace—accidents at work or away from it—can be just as damaging as injuries of war.

Members of the Association of Cine-Technicians may join 200,000 others in becoming members of this Hospital—privately owned and controlled by its members.

Rates of Subscriptions.

The subscription is only a penny per week, which entitles contributors to full benefits, and by JOINING THROUGH A.C.T. the customary qualifying period is waived and BENEFITS MAY START AT ONCE. It is expected, however, of those earning comparatively high salaries, that they will subscribe an annual fee of One Guinea.

What are the circumstances and conditions most to be desired about a hospital? They are, surely, that the treatment shall be of the best, the surroundings shall be as pleasing as possible, the atmosphere shall be friendly and conducive to wellbeing and devoid of any charitable taint, and, nevertheless, the cost shall not be prohibitive. The Manor House Hospital fills the bill in all respects.

Advantages of Membership.

The following are some of the advantages which the Hospital offers:

1. The very best medical care and surgical skill.
2. Specialist consultations and advice. Accommodation, not in a general public hospital in the middle of a great city, surrounded by a constant roar of traffic, but in a private hospital, owned

(Continued on page 35).

Film Projection in the U.S.S.R. (continued from preceding col.)

The sound system employed is made up of several systems. Criticisms of poor recording are probably due to having to start from scratch and there not being the huge research laboratories which exist elsewhere.

Wages do vary for different types of work, but there are not the huge differences which are found in other countries.

Newsreels are being extensively developed, but they are not yet as speedily efficient in presentation. Their principal purpose is educational and practical, and not just informational. In the last two years there has been a greater advance in production of technical films, newsreels, and educational and children's films, and special newsreel theatres have been built in Moscow. The Mosfilm and film studios are now exclusively used for the production of films. All cinemas show special children's programmes in the morning and as a part of their school curriculum children are shown educational films, interest films and play films.

A most informative and enjoyable evening concluded with the projection of excerpts from "The New Gulliver."
Recent Publications

Mees on Photography

Photography, by Dr. C. E. K. Mees. G. Bell & Sons, Ltd. 76 net.

Dr. Mees, the Director of Research of the Eastman Kodak Laboratories in Rochester, U.S.A., one of the greatest, perhaps the greatest authority on the science and chemistry of photography to-day, in his book “Photography,” reviews the whole field of photography in a simple and popular style. In fact, the book has its origin in a course of lectures given last Christmas at the Royal Institution. These lectures were intended chiefly for young people. Consequently the experienced photographer may not find much of very great interest to him in it except the chapters on the history of photography and the chapter entitled “The Formation of the Photographic Image,” in which Dr. Mees explains why a photograph appears. It is a fact that a number of experienced photographers, however beautiful their results, have no theoretical knowledge of sensitometry whatever. Camera assistants and perhaps “certain” directors, could with advantage read this chapter in order that afterwards they might have more respect for the medium by which they earn their daily bread.

Dr. Mees deals very briefly with cinematography, although he shows why the grain size of reversal film is smaller than that of normal negative-positive. His chapter on the photography of coloured objects (in monochrome), as one would expect from such a man as Dr. Mees who did so much work with the early panchromatic material and filters with the Wratten Company, very clearly states the reason for using panchromatic material and the reason for using filters of different colours according to the object photographed: the use of infra-red material, the use of ultra-violet light in photographing writings on paper which have been erased, astronomical photography, and X-rays.

In the chapter on colour photography, Dr. Mees explains the difference between additive and subtractive colour pictures. He explains some colour systems and gives a very clear illustration of the processing of Kodachrome films.

Perhaps it is only a book like this that can bring home to the average person the great many uses to which photography is put to-day and the great amount of work and thought which have been expended to enable it to reach the pitch of perfection it has now attained.

Money for Film Stories, by Norman Lee. Pitman, 76 net.

This unpretentious and rather parochial book contains, amongst other and irrelevant material, sound advice to those who desire to turn their stories into the excellent money obtainable from film companies. Incidentally, the money both for stories and scenarists is considerably more than appears in this book.

It may be of interest to a budding and inexperienced writer to know that specimens of shooting scripts, but it may also have the most unfortunate repercussion on hard-worked readers, for there is nothing more exasperating to wade through than a script put together by inexpert hands.

The most valuable contribution to the book is made, as might be expected, by Alfred Hitchcock, whose words have been carefully weighed. This contribution is the more worthy because it negatives, and rightly, the idea which seems to permeate the remainder of the book, that writing for the films is “ever so easy.” It isn’t. It is a fine and exacting art.

By the way, J. B. Priestley has no monopoly on Gracie Fields’ stories. The last two were written by other writers. What about George Formby? Mayn’t he rank as a star?

Some of the details in this volume are a little out of date—perhaps unavoidably. Certain studios have disappeared and others have arisen—notably Pinewood.

Perhaps one day we shall get a representative book.

WALTER MEADE.

Dictionary of Photography

It is perhaps unfortunate that technicans on picking up this publication (The Dictionary of Photography, Iliffe & Sons, 76) will turn most probably to the section dealing with Cinematoigraphy, and it is doubly unfortunate that this section should have been lifted almost without alteration and with obviously little revision from the previous edition. It is confusing, to say the least, to read in a modern dictionary such sentences as “the perforated negative is next placed in the camera and exposed upon the subject at the rate of about” (the italics are mine) “sixteen exposures a second, the exact number varying with the movement of the subject.” Another gem being “. . . in the dark-room the exposed negative film is wound upon frames, immersed in developers, and fixed in a hypo bath and washed just as an ordinary photographic plate. When dry, the negative is examined, faulty parts cut out, and the perfect portions joined together and made ready for printing”—news indeed for laboratory and editorial workers.

Camera men will quarrel too, I think, with the definition of “Depth of Focus” given as: “. . . the power of defining upon a plain surface, with sufficient definition to satisfy the requirements of the case, the images of objects situated at varying distances.” This definition is surely that of “Depth of Field.” Incidentally, “Depth of Focus” is clearly defined by the S.M.P.E. as “the range through which a photographic plate or film can be moved forward and backward with respect to the lens while maintaining satisfactorily sharp focus on an object at a given distance.”

The Society adds the following rider:—“This term is very frequently misused in the sense of depth of field.”

The reference to our old friend Gamma is:—“Gamma Infinity” is the term usually applied to the extreme density-giving power of a plate. It is usually expressed yву. Gamma is the term chosen by Messrs. Hunter and Driffield to define the degrees of contrast of any given negative.”

This definition is taken completely from the last edition and one could justifiably imagine that no thought of revision has arisen in this case either.

Amongst notable absentees are the following:—

Zoom Lens, Back-Projection, Dunning Process, Dupe, Photo-electricity, Resolving Power, Spectrogram, Millimicron, Haze, Watts, Ultra-Violet, etc. Under the heading “Grain” one reads “See Weighting and Measuring.” In the section dealing with Enlarging one may learn too that “Oil lamps are not used much now” and that “The ordinary
or old style gas burners, as fish-tail or Argand, are now practically obsolete as far as projection or enlarging is concerned." Of considerable interest to the more mathematically-minded reader is the statement that the focal plane "is the position at the back of the camera usually occupied by the focussing screen. . . ."

The liberal use of proprietary names will annoy many readers and altogether this book does not inspire the confidence that one should feel in a dictionary, since one frequently uses it to settle arguments, not to provoke them, being, as it often is, the final point in a quest for knowledge.

In concluding this criticism I would quote the following: "...and well-appointed theatres devoted solely to the exhibition of cinematograph pictures form a regular feature of everyday life in every part of the country. The latest development in the shape of 'talking pictures' has rendered the entertainment side even more universal."

T. S. Lyndon-Haynes.

* * * *

Don't Sign a Contract

before consulting A.C.T. We have a legal department, and it is part of our service to members to check and advise on service contracts. We have been of great service to members recently in this connection. Our experience can help you to safeguard your future employment.

Manor House Hospital (continued from page 33),

by its members, in pleasant surroundings at Golders Green, on the outskirts of London, within easy access from every district.

(3) Free Ambulance service.
(4) A well-equipped Out-Patients' Department.
(5) Qualified Optical and Dental Treatment under favourable terms.

It should be pointed out that the full facilities of the Hospital are not at present available to women. The Dental and Optical sections are, however, open to them and therefore make the scheme worthy of consideration even in its limited application, and it may be mentioned that steps have already been taken which it is hoped will lead to the building of a new Women's Hospital in close proximity to the present building.

For the payment of subscriptions there is an appropriate column on the A.C.T. membership cards. After the first payment, and as long as payments continue, members will be entitled to all the benefits the hospital affords. We hope all our members will take advantage of this fine opportunity. They cannot spend a penny a week, or a guinea a year, as the case may be, more wisely.

Less than 100 A.C.T. members belong, but of that number two have had specialist treatment (without any cost to themselves) and about half-a-dozen have utilised the dental and optical departments. All speak very highly of the treatment received.

Every member should, in their own interests, belong, and we trust that this reminder will be sufficient to persuade them to start subscribing immediately.

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The Journal of the Association of Cine-Technicians

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The Association of Cine-Technicians,
30 Piccadilly Mansions,
17 Shaftesbury Avenue,
Hi! Folks! Here I am again without any Blue Pencil marks, at least, so far???

* * *

The Crisis in the Film Industry

The British industry is so poor nowadays that it is only the sticky tape off film cans that is holding it together at all. Strong rumours that some companies are bringing in a new scheme, whereby the technicians share in the losses, but my advice is to ignore it and it won't trouble you.

And now a fitting tribute to the Situation:

The Crisis
Under the earth in its little room
The British film baby lay snug and warm,
When the crisis tapped at the door and said:
"Wake up, it is time you were out of bed;"
"Film time is here and you must not wait;"
"Harry up, little baby, or you will be late;"
"Oh, wait a minute," the baby said,
"I'm nice and warm in my little bed,
And I've tried and tried and I can't get through,
Please Mr. Crisis, what shall I do?"

Anyone answering this question, 6 days C.B.

* * *

Knotty Problems Solved by Pog.

Time and time again I have been asked what can be done with old razor blades and gramophone needles, and apart from giving the usual fatuous answer, no useful solution had I found. Whilst in my bath the other night (no, not the annual) the solution came to me, and here it is...the needles are used to stick into sleeping Film Executives; if this fails to wake them—then cut their throats with the razor blades...And don't say I don't give you nothing! (A.C.T. lawyer—have I committed a criminal act under the Incitement to Riot and Disaffection Bill?)

Make Money at Home with Pog

I have started some new industries that one can take up in and during the crisis period. (I claim no royalties as I am only too keen to help the boys and girls).

1. Develop Negatives in your bath—no skill required (much)...only personality counts...even the cameramen won't know them...you should worry...others don't!

(French Papers please copy.)
2. A warning was printed last issue with reference to Bucket Shops. This was most unfair in view of the new industry that these shops have created. You may or may not be aware of the terrific shortage of buckets... hence my newly-formed company "Pog Universal Bucket Providers." All new buckets manufactured from the tins of shelved productions.

* * * *

Continuing with my world-wide native poems, I print herewith a poem that I found S.W. of Wardourland. It illustrates the influence that Barrie had over this tribe:

There are fairies at the bottom of our garden
And it's not so very far away:
Just past the gardener's shed
And keep straight ahead!
Oh, I do so hope they've come to stay.
There are fairies, too, in the West End of London,
At least, that's what I've recently been told.
It sounds to me quite silly,
In the noise of Piccadilly,
I think such fairies must be very bold.
But by the statue that is there of Eros,
Just where the flower-maidens sit around,
With flowers to suit all fancies,
If you look among the pansies,
It's there they say that Fairies may be found. Isn't that sweet?  (It smells ... . . . Ed.)

International Incident
My Correspondence is opened

I feel that I must thank my fans for all the letters they have sent me. I should add, however, that as they were sent to the Studio, the "powers that be" opened them (imagine my embarrassment) and all spelling mistakes were corrected. On enquiry to legal advisers I was informed that this was quite in order for the authorities to do this. If there were any bills or demands amongst them, I must take this opportunity of thanking the firm for paying them, either in mistake or out of gratitude for the services that I have rendered them (sez You).

So in future don't send me or anyone else letters addressed to the Studios. This goes for everyone except debt collectors, tailors, etc. These (I hope) are sent to the Accounts Department, and get paid in the normal course of events, that is, of course, if they are normal. (This, maybe, is a reason for the recent financial crisis in the Film Industry).

I HAVE SPOKEN.

* * * *

Closing Note

I must close now (Must you really go?—Ed.) but I don't know what to say, except, perhaps "thanks for having me, I have had a lovely time. So long," Play the game, Cads, and now go jump in the lake.

And you, Pog.

THE CLAPPER BOY WHO WAS TOLD TO GET—

BY ERIC COOP 1937
Technical Abstracts

The Secret of Colour Optics

It is an outstanding tribute to British opticians that an American firm, experimenting with a process purely American in its origin, should have come to this country for the most vital part of its equipment. The opticians in question are, of course, Taylor, Taylor, Hobson, Ltd., whose patents, as well as those of Technicolor, are embodied in the optical equipment with which every Technicolor film has been photographed.

The chief point of difficulty in the computation of optical components for a three-colour process is that all three images must be of identical size, while in the Technicolor system, employing a bi-pack film, there must be a certain fixed difference of focus between two of the images, although for the third advantage is, of course, taken of the possibility of varying the position of the gate.

It needs but little optical knowledge to appreciate further that the insertion into the optical bath of a large piece of glass (the two prisms, which together form a cube) must lead to an alteration of the lens corrections, causing poor definition and chromatic aberration.

Large Aperture Lenses

These difficulties were realised by Technicolor as far back as 1918, when patents were filed for lens systems for use with prisms. Later, however, the need was felt for large aperture lenses for studio photography. Taylor-Hobson were already making a range of f/2 lenses, and were asked to design a special lens for the Technicolor two-colour process. Subsequently, of course, a three-colour process was adopted, and the need for colour correction was still more pronounced.

Lens Conditions

The conditions laid down for such a lens were that the red and blue foci must coincide, the tolerance being 0.0005 in. for the blue, having regard for the blue being on the rear of the bi-pack. The fixed or pre-determined adjustment for the green is made on the camera, imposing a tolerance of 0.003 in. for the common focus of the red and blue.

This was realisable with 50-mm. lenses, but with longer focus lenses the dimension of 0.003 in. became increased, with a 140-mm. lens, to 0.008 in. This necessitated a reduction in the secondary spectrum, requiring the help of the glassmakers. Fortunately, the Chance-Parsons Glass Co., were able to provide a glass having a low secondary spectrum—that is, having flatter curves and low dispersion. Very careful incorporation of this glass by the computer resulted in approximately the same difference between the green focus and red-blue focus as with the 50-mm. lens.

The Short Focus Lens

A different problem was presented when shorter focus lenses were considered. It became necessary to find a means of providing the shorter focus lenses with sufficient back clearance to allow for the prism for the light division.

Ball of Technicolor had previously tried using a negative lens in front of a normal lens. By having a distance between the negative and the normal lenses greater than the focal length of the positive lens, he decreased the focal length and displaced the nodal plane towards the focal plane, thus obtaining greater back clearance.

This, however, gave barrel distortion, and therefore led to two cemented negative doublets being introduced. Taylor-Hobson had to produce an f/2 lens for these conditions, free from distortion. This used two single elements for the negative lens and maintained the same accuracy for colour correction as was specified for the 50-mm. lens.

Processing the Negatives

The negatives exposed, the next stage is their development. It cannot be too strongly emphasised that the three negatives must throughout be handled together, under identical conditions of processing and shrinkage. For this reason every section of the laboratory in which negative is handled is supplied with air fully conditioned for temperature and humidity. Every foot of film used is perforated under the same conditions, on B. and H. perforators; the stocks used have been carefully developed by Kodak to ensure the minimum of shrinkage.

The negatives are developed in almost standard baths to a normal gamma. The only specialised treatment is the immersion of the front bi-pack film in a bleaching bath to clear the red filter dye.

Immediately after development black-and-white rushes are contact-printed, generally from the blue recording (yellow dye) image. Thus the producer can see the results of his work with no more delay than if he were working in black-and-white.

It is desirable to have colour tests of each shot as soon as possible. For this purpose, at the end of each shot a short length of about 5 ft. is exposed on the principal characters, and on a colour chart; the latter comprises three faces, one facing the camera and the others at angles of 45 degrees, so measuring the effect of direct and oblique lighting. The chart contains the customary coloured and grey squares. It is customary to make test colour prints of these sections immediately after the rushes have been despatched.

Colour Prints

The first stage in the preparation of colour prints is the making by optical means of three matrices. The matrix stock is specially made, again by Kodak. The developing process which the matrices undergo is of a specialised nature. After development the image is etched, resulting in a gelatine relief; where no silver has been precipitated the gelatine remains soft and soluble in hot water, whereas where a silver grain has been produced the gelatine is hard and insoluble. The dissolving away of the softened gelatine leaves the matrix ready for drying and spooling up, ready for use.

For the actual print a stock similar to ordinary positive is used: like the other stocks, however, it has a very low shrinkage, and is perforated by Technicolor under rigorous
conditions of temperature and humidity control. The first step is the printing of the sound track. This is a silver image, exactly the same as in black-and-white, except that, since the degree of picture development has not to be considered, it can be developed to any desired gamma.

Silver Key Image

Before development, however, a thin silver key image is printed, which serves two purposes. In addition to improving definition, it augments the density of the final image, which might otherwise necessitate an excessive density of the dyes. This key image may be printed from any of the three negatives, or occasionally from a combination of two of them, according to the requirements of the subject.

The film is developed in an ordinary developing machine, except for the addition of a special hardening bath, the direct reason for which is to permit the gelatine to retain the dye transfer, but which has the further advantage that it ensures the print being impervious to scratching, and gives a longer life than monochrome, while it is found that the virtual absence of silver in the picture image assists by reducing heat absorption in projection.

Next the dye transfers are effect ed. First the positive is brought into intimate contact with the yellow-printing matrix (made from the blue record image), next the magenta matrix (from the green-record negative), and finally cyan or blue-green matrix, made from the rear of the bipack negatives. The dye process is carried out on a clever machine.

The Imbibition Process

First the print has to go through a conditioning bath to swell the gelatine in order that it may take up the dye. Meanwhile the matrix is fed through a dye bath, is rinsed, and then meets the positive, with which it is pressed into contact, and thereafter remains in contact for a space of two minutes, during which time the dye is passing from the impregnated matrix to the print. After a brief rinse, the same operation is repeated with the other two matrices.

The machine which carries out this process occupies a long room on the first floor of the new laboratory. At the right-hand end the matrix can be seen winding through the dye bath, and on to a long endless band of this monel metal, fitted with innumerable registering studs, which fit into every perforation. The positive meets the matrix and engages with the pins in a glass-sided tank filled with water. A water jet impinges on the two films at the point of contact to prevent the retention of any air bubbles. After passing between pressure rollers, there is sufficient suction to keep the two films together.

The speed of the machine is 96 ft. per minute, and the band has a length of over 200 ft., and forms a double loop, at the end of which the matrix is removed, washed and dried, then rewound, while the positive goes to the second part of the machine, where, after another conditioning bath, the second matrix is transferred, then on again to the third of the matrices.

Temperature Control

The difficulty in keeping the film and the matrix in intimate contact over such a length needs no stressing. It is only by the absolutely perfect control of perforation and film shrinkage that it is possible. Temperature control is obviously important, and is maintained constant to very close limits by means of a thermostatic mixing valve.

After its three trips through the machine, the positive passes to the drying chamber, through a liquid waxing appliance, and reels up, a finished product.

From a given set of matrices a large number of identical prints can be obtained.—as many as 100 have been produced. The wear and tear on the original negatives is, of course, restricted to the printing of the matrices.

The Technicolor process represents a remarkable achievement in the overcoming of a host of almost insuperable difficulties. Its commercial success has been rendered possible only by the most rigorous standardisation of all materials and every process.

Due credit must be given to Taylor, Taylor and Hobson for the perfection of their optical components, and to Kodak for the production of stocks having such consistent photographic qualities and an unvarying low rate of shrinkage.

—Kina matograph Weekly, 24 1 37.

Three Types of Film Stock

Kodak's Specially Prepared Range

It is no exaggeration to say that ten, or even five, years ago the present perfection of Technicolor would have been utterly prohibited by the lack of film stocks capable of meeting the exacting requirements of the system. The stocks now made available by Kodak are the result of a close co-operation with Technicolor workers extending back to the very beginning of the process in 1912.

Three distinct types of Kodak stock are utilised in the Technicolor process. First are the negatives. That recording the green component is supersensitised pan-chromatic stock, specially sensitised by Technicolor to have the maximum sensitivity to the light passed by the appropriate filter.

The bi-pack consists, first, of an ortho-chromatic stock carrying a pink filter layer, which is bleached off in processing. The rear film is again of the supersensitive pan-chromatic type.

Next come the matrix stocks. These are needed to have very distinctive properties to permit of their being processed to gelatine reliefs. An essential is, of course, a very fine grain.

The film used for the prints is photographically an ordinary positive stock. Like all the other Technicolor films, however, it differs from normal positive in having a low-shrinkage base.

An obvious essential of the process is the maintenance to within very close limits of the physical dimensions of the films used in every operation. Constant experimenting has resulted in the perfecting of a base with a shrinkage as low as one-eighth of 1 per cent.—about a quarter of that of normal stocks. Furthermore, this very low rate of shrinkage is maintained exceedingly constant between different batches, varying by not more than 10 per cent. from batch to batch.

These special stocks are at present specially made in Rochester, U.S.A., but it is planned to manufacture the
complete range in this country, effecting an economy by eliminating import duties.
—Kinematograph Weekly, 28.1.37.

Duosonic Equipment

Speaker System

The speaker system is in many ways the most important part of any installation. The speakers have a performance not hitherto possessed by any speaker available commercially. Their response is sensibly flat from 30 to 15,000 cycles, and there is an absence of peaks or troughs in the response curve. The "Duosonic" speaker assembly comprises two parts, a large re-entrant horn driven by four cone units, and a smaller multicellular horn driven by two units. The large horn reproduces the bass, from 30 to 300 cycles, the smaller horn the treble, from 300 to 15,000 cycles. The treble horn has fifteen separate exponential air columns brought to a common throat, these preventing the focusing effect on high frequencies common to many speakers of normal design.

A matching unit divides the speech output of the amplifier at the appropriate frequency, 300, so that the two parts of the speaker assembly handle only the frequency range for which they are designed.
—Kinematograph Weekly, 4.2.37.

Light "Shock Absorber"

Colour Images Through Sound Waves

A number of interesting advances in studio equipment and production techniques have been achieved by M.-G.-M. technicians.

An optional "shock absorber" to smooth out the "bumps" in light is one of them. It is accomplished in new lamps being used at the M.-G.-M. studios.

The "shock absorber" is a new type of modified spotlight, of 150-ampere capacity and equipped with a Fresnel lens. Through combination of arc and the special lens, with a rheostat as an electrical balance, it provides a perfectly smooth field of light that can be widely spread. Older lamps cast irregular areas of light, "bumpy" light, as cameramen term it.

According to chief electrical engineer Lou Kolb, the balanced resistance transforms any unevenness in electrical current into a steady and even flow, thus keeping the light beam constant at all times.

"Turret Tops"

Exterior recording has always been a difficult task for the mixer or sound modulator, working with headphones, because of extraneous sounds interfering with his judgment. So the "turret top sound man" comes into being.

Studio technicians devised a sound-proof helmet, in which headphones were inserted, and with a double glass window to look through. It fits over the head of the mixer while actually listening-in on recordings and shuts out all sound save that which comes from the microphone.
—Cinema, 3.2.37.

Revolution in Lens Production

From the Mould to the Mount

The long-promised development of the moulding of optical lenses from plastic materials is now an actuality. Numerous types of lenses made from various substances developed by Imperial Chemical Industries were demonstrated on Tuesday, and will be exhibited next week at the British Industries Fair.

The application of such materials to optical work has been made possible by years of research work carried out by Arthur W. Kingston, the well-known kinematograph engineer, with whom is associated P. Koch De Gooreyn, an Englishman, whose inventions cover many fields.

Straight from the Mould

What is probably the most important aspect of the new development is the fact that a lens comes from a mould polished ready for mounting. Not only does this mean that the cost of lenses can be much reduced, since the grinding and polishing operations are eliminated; it also makes possible the use of all types of spherical lenses, one result of which is expected to be the development of single lenses, ready corrected for all forms of aberration.

It is claimed, furthermore, that the new materials are more transparent than glass. This point was demonstrated by a large cylinder, about 3 in. in diameter and 6 in. in length, which appeared to have a negligible absorption. It is claimed that a lens of given aperture will pass twice as much light as a similar glass lens.

Big Optical Range

One of the substances used is known as "Perspex." Actually, however, several substances can be employed, covering a wide range of refractive indices. The materials normally used cover the same range as normal optical glass, the index varying from 1.5 to 1.6; other materials, however, cover a range of from 1.45 to 1.64. Another feature of the new materials is their lightness, their specific gravity being only 1.19. This factor may prove of value in many applications, as, for instance, long-focus lenses.

Lenses made from these materials are practically unbreakable; a lens thrown with force on to a marble slab bounced back like rubber. On the other hand, the surface is far softer than that of glass, and in some applications may have to be protected by a thin cover glass.

For Projector Lenses

Plastic lenses would be applicable to many purposes in the cinematograph industry. Camera lenses and finders are the more obvious; while the materials will not withstand heat well enough to serve as condensers they could be used for projection lenses.

Other applications already studied are for spectacles, and for optical components of aircraft (for both of which purposes the lightness of the material is of importance) and for television and optical instruments generally. In regard to the last-mentioned application, the transmission is excellent in the visible and ultra-violet regions, and extends into the infra-red.

The cost of the new plastic substances is approximately the same as that of high-grade optical glass.
—Kinematograph Weekly, 11.2.37.
Evolution: A Peep into the Past

By CLAUDE FRIESE-GREENE

In 1912, about two years before the war, the number of cine-technicians was very few indeed; not more than a dozen or so in this country. I was quite a youngster then and happened to be one of the very few engaged in "film production," and just as a matter of reminiscence, I am going to recall in a very few words a day's work for me at that time. With an assistant even younger than myself, we collected a few magazines together and loaded them with 100 feet rolls of negative. The camera I used then was a wooden affair with a Zeiss 4-5 lens. I was lucky if I could get the camera to run 25 feet of film without a jam. However, if the sun was shining (and it had to shine in those days) everybody was quite happy if I was able to expose even a few feet at a time of some action on a two-reel drama we were making in the backyard of some large premises in Brighton. We kept shooting whilst the light permitted, and after collecting the exposed magazines, took them round to the Laboratories, which consisted of a few rooms which were darkened with paper and blankets and had running water laid on.

I prepared the developer, getting it up to temperature by heating a pint or two over a gas ring. The developing dishes were flat, and the negative had to be wound round and round a kind of square frame that fitted into the dish. This frame had hundreds of pins sticking up, hence the name "pin frames," and it used to take about twenty minutes to thread the film. The negative was then immersed into the developer and continually kept on the move by hand, until one judged the density to be correct. It was then put into another flat dish containing the hypo, and fixed; then into another similar dish where water was turned on from a running tap. After washing, the drying business was quite a work of "art," to get the film off the pin frame and feed it on to a hand-driven drum, which had to be turned round and round until the film was dry, a good two hours. Then came cleaning the negative and preparing for printing—no gammas to work to in those days.

The printing machine was also a hand affair—one turn, one picture—adjusting the light by placing it nearer or farther away from the film, and perhaps if it were a "thin" negative, it was necessary to wrap a few pieces of tissue paper round the lamp. However, when the exposure was thought satisfactory, off one went turning picture by picture and printing away.

Next, of course, the development of the print in exactly the same manner as the negative—the hand-drying drum again, and then at last the finished article. Join on a piece of lead and the day's "rushes" were ready for the projector.

Having passed the word to the "producer" and those concerned that all was ready, I then finished off by projecting the result of my day's efforts, for better or for worse, somewhere about midnight.
In other words, just doing everything from the start to the finish.

Now that was about twenty-five years ago. Picture for yourselves the tremendous advance this industry has made since that time. It is amazing that now every single phase concerned with the technical production of moving pictures has its own department, and inter-departments.

Such is progress. * * *

Having gone back so far, let's go back further still.

I enjoy looking up old books, new books and manuscripts, so that I may filter in my mind the beginnings of the wonderful science we are serving. Little discoveries and achievements, even hundreds of years ago, are now parts of the evolution of cinematography. There is no need to go into the general principles of photography; we are conversant with the camera, the exposure of light on to a sensitive emulsion, the development of the latent image, fixing, etc. But what I want to dwell upon for a short while is, "How did it all start?"

I should say that the first step in the direction of the evolution of photography, the predecessor of cinematography, happened somewhere in the middle of the sixteenth century. There were probably many men who must have noticed the peculiar phenomenon, but it is credited to an Italian philosopher, one Battisto Porta, who "exhibited" what is known as the camera obscura.

This is what he did. He covered up his window with a piece of wood so that all light was excluded from his room. In this piece of wood he made a very small hole, then—lo and behold—on the wall on the opposite side of the room was reproduced the scene of the view outside his window, but, of course, upside-down. It must have caused a sensation in those days. Anyhow it was the beginning, the nucleus of the idea of the camera. It was later found out that the image thus obtained on the wall could be made sharper by placing a glass lens over the hole in the piece of wood covering the window. (Lenses, by the way, were invented over a hundred years before, because the idea of focusing light with glass is known to date back to the time of the ancient Romans).

As time went on, it was discovered that by placing a mirror at a certain angle to the lens (hole and glass) it caused the light to be reflected down. Thus, instead of people standing on their heads in order to see the picture on the wall the right way up, they could at least stand in a normal position and view it more or less naturally. Sounds silly now, but this happened 500 years ago. This step which, as I say, one might liken to the camera itself, must have existed at least three hundred years before the actual art of photography developed, which could not take place until the camera and chemical discoveries were mated.

There is probably no doubt that at the time of the discovery of the camera obscura, old alchemists knew of the existence of silver nitrate. It is said that it was by chance that one of these old fellows dropped some ordinary sea salt into a solution of silver nitrate, whereupon the liquid took the appearance of something like milk, and it was observed that, when sunlight fell on it, it quickly turned black. This accidental discovery was, of course, not then

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Stereo-Daguerreotype. Tinted Portrait of Child, circa 1850. (From the original in the Science Museum, South Kensington).

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Early Calotype by Fox Talbot: "The Chess Players." (From Science Museum, South Kensington, Fox Talbot Collection.)
A little more than a hundred years ago, several men in many countries were striving to capture "pictures painted by light" and retain them permanently (it was an art in those days to trace the images of scenes on a piece of paper caused by the camera obscura); and it was the pioneering work, energy, invention and sometimes accidental discoveries of men like Daguerre and Niepce in France and Fox Talbot in England (who eventually mated the picture caused by the camera obscura with a sensitive surface that was affected by light and by chemical treatment) that resulted in the image being permanently retained.

Niepce discovered that a mineral substance known as bitumen of Judea (a sort of asphalt or pitch), when dissolved with some oils, was affected by exposure to light, an exposure in sunlight lasting many hours. He spread his preparation of bitumen on a tablet of plated silver or well-cleaned glass. This was very similar to the method Wedgwood and Davy had used, of paper soaked in silver salts. Daguerre and Niepce entered into partnership, and Daguerre (who had also been experimenting with silver salts) made many improvements in Niepce's process. Daguerre, however, soon became dissatisfied with the long exposure necessary, and earnestly sought after some quicker process. It is interesting to note that Niepce called his process "heliotherapy" or sun-drawing. He died in 1833, and his son joined Daguerre in the partnership.

The following paragraphs I quote from Mr. Charles R. Gibson's book, "Romance of Modern Photography"; they are extremely interesting at this juncture:—

"Daguerre had abandoned the bitumen process of his late partner, Niepce, as also his early experiments with silver salts, but he was evidently seeking once more to engage silver, in some form or other, in his service. It is said that Daguerre accidentally discovered that a plate treated with iodine was sensitive to light. We are told that on one occasion he noticed that a plate which had been treated with iodine retained the image of a silver spoon which had chance to be laid down upon it. Although I can only find one historian who has preserved this tale for us, it seems a very probable one. Daguerre had already seen Niepce use iodine to blacken his bitumen pictures, so that iodine would be sure to be among Daguerre's stock of chemicals. It would be quite natural that he should try to improve his own pictures by exposing them to the vapour of iodine, just as Niepce had done, and no doubt it would be upon a plate which he had thus treated that he accidentally discovered the image of a spoon. This would suggest to him at once that iodine would make his silver plate sensitive to light."

"This iodine with which Daguerre was working had not long been discovered. It is an elementary substance and was obtained by some chemical manufacturers from seaweed. Daguerre took a brightly polished plate of silver and sought to make its surface sensitive to light by exposing it to the vapour of iodine. Alas, when Daguerre exposed his plate in the camera, he could only get a faint sort of image of bright objects, and that after many hours of exposure. It seemed as though the hopes that he had built upon his silver plate, with its coating of iodine of silver, were going to share the same fate as his earlier experiments with paper soaked in silver salts: indeed matters looked even more hopeless.

"It so happened that one day he removed one of these silver plates from his camera, as the exposure, probably due to the light, had been insufficient to produce any image. Had the spool plate been a glass one or a prepared paper it would doubtless have been immediately consigned to the fire. But it was a Daguerre plate, and he took it to his friend, a picture dealer named Thibouville, who told him that the light would never affect the plate, but that the contrast of light and shade was weakest at the edges of objects, and that if it were fixed with a fluid which would be denser in the centre of the image and less so at the edges, the result would be an excellent daguerreotype. Daguerre immediately tested the theory, and in a few minutes had gone through the development process of Daguerre's which the world has since taken for granted."

"The history of Daguerre last night was sketched to a large gathering of the photographic fraternity by Mr. R. D. Wilson, who, with the aid of a daguerreotype of the late President, traced the career of the inventor, his labours and his success. His success was due to the fact that he persevered to the end. Daguerre had a painters eye, and he sought to accomplish his end in a pictorial and realistic manner. He worked out his process in the face of ridicule and unbelief. The world was slow in recognizing its worth, and for years it was neglected. But the daguerreotypist has now become an art, and the name of Daguerre is one of the greatest in photography."

"From that time, the daguerreotype became the rage, and every man was anxious to possess a plate of his portrait. There was a rush after daguerreotypes, and the demand for daguerreotypes was such that it caused a great increase in the price of silver. The price of silver shot up to a dollar per ounce, and the country was in a state of financial alarm."

"The daguerreotype was the forerunner of the photograph. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked eye. It was the first to enable us to see objects that were invisible to the naked ey..."
to the rubbish heap, but being made of silver it was naturally laid aside in a cupboard to be repolished and again prepared for a fresh exposure.

"How many of us would have lost heart at this point and abandoned the whole affair as a practical impossibility? Not so with the indefatigable Daguerre. It was no light task to repolish the silver plate; it requires great skill and care. I fancy that Daguerre must have come forward to open his cupboard next morning with a feeling of dogged perseverance: nothing for it but to try, try, try again. Imagine his surprise when he took the spoilt plate from the cupboard to find an exquisite picture upon it. Doubtless he questioned whether he was waking or dreaming; it was too like a fairy tale. A perfect picture! Nothing approaching it has ever been seen by man before.

"Wherein could lie the magic power of his cupboard? Will another short exposure in the camera—another 24 hours' imprisonment in the cupboard—present him with another 'perfect picture'? I very much doubt if Daguerre slept the following night. At any rate there would be no chance of his sleeping on and failing to remove the second plate on the expiring of the twenty-four hours.

"Another picture did appear, and equal in every way to the first, and so it only remained for Daguerre to discover wherein lay the magic in his cupboard.

"It was clear that the plate must have been affected by vapours from some of the chemicals in the cupboard, and so a little patience would be required to find out which dish of chemicals was the 'good fairy.' I think that the one which did prove itself to be the magical one was one of the last that Daguerre would have suggested. It was a simple dish of that bright semi-liquid metal known as mercury. In this way Daguerre discovered that if what he had previously considered to be a very much under-

exposed plate was exposed to the vapour of mercury, the invisible image was gradually built up into a visible picture.

"What really happened was that the mercury vapour attached itself to the sensitive plate in exact proportion to the amount of light which had previously affected the plate while in the camera.

"Here we have the sensitive plate receiving a latent image, which only appears when chemically developed. To the photography of to-day this has ceased to be a marvel, but to Daguerre and his compatriots it was indeed a true romance."

Daguerre had previously succeeded in making his pictures permanent by fixing them, washing them in a solution of common salt. By this means the remaining iodide of silver which had been unaffected by the light was washed away, so that there could be no further chemical action. Sir John Herschel, the famous astronomer, suggested later that hypsulphate of soda was a better substance than common salt (chloride of soda) wherewith to fix the image. This hypo-fixer is, of course, still supreme to-day.

At the same time when Daguerre was experimenting in France, William Henry Fox Talbot, in England, was also hard at work more or less on the same lines as Daguerre, and there seems no doubt that it was only because Daguerre announced his invention to the world first, that the official dates of this phase of photography are credited to Daguerre. Nevertheless, Talbot was in some sense ahead of Daguerre, because he was making prints from his negative papers. He apparently went through the same trials as Daguerre, starting off with silver nitrate and common salt, making a solution of chloride of silver. He also tried iodine to form iodide of silver, but it was not until he discovered the use of gallic acid in development, that he improved his pictures considerably in detail and found that his exposure in the camera could be much shorter. (John Frederick Goddard discovered that a vapour of bromine, a non-metallic element, greatly increased the speed of exposure used in conjunction with Daguerreotype plates, and he was able to make an exposure in 20 seconds instead of as many minutes.) Fox Talbot was therefore able to develop the latent image which was called the negative. (Sir John
Herschel was the first man to use the words “negative” and “positive” in connection with photographs. From this paper negative (which he made translucent with wax), he was able to produce any number of contact prints.

* * *

Now this all happened nearly a century ago. It was the beginning of photography. The whole world started thinking, and minds of many great men started improving and improving on this great discovery, which was destined to be one of the greatest sciences of the age. As time went by, it became known that a Swiss chemist had discovered that if ordinary cotton wool was immersed in a mixture of nitric and sulphuric acids, it became highly explosive. A little later there was a substance produced by dissolving gun cotton in a mixture of ether and alcohol. The resulting material was called “collodion,” being so named because of its adhesive qualities. Collodion was used in surgery to form a film over wounds, and thus prevent contact with air. Several scientists suggested that collodion might be used for holding chemicals together on the photographic plate. It was a London sculptor, Frederick Scott-Archer, who brought these suggestions into a practical form and made it known in 1851.

The collodion process quickly displaced Daguerreotype and Talbottype, and made photography a popular art. It was necessary, however, that these collodion plates should be exposed in the camera while the chemicals were moist, and they had to be developed before the chemicals dried. Chemists succeeded in arranging the chemicals so that the plates might remain moist and sensitive for a week or more.

Later, it was found possible to make plates that would remain sensitive when dry. Improvements in dry plates continued, and gelatine was substituted for the more dangerous collodion (the silver salts being dissolved in the gelatine). And so the chemical side of photography went on and is still improving. *

As the speed of emulsions became faster, so it became possible to take photographs instantaneously, and this possibility started the thoughts of men in the direction of reproducing movement by photographic means.

It is as well for me now to take you back to the starting point of Motion Pictures, a history which could never have been written were it not for the physiological phenomenon of Persistence of Vision, that basis upon which rests every one of the mechanical appliances for producing the illusion of motion.

One of the stock experiments which proves Persistence of Vision is of so elementary a character that man must be supposed to have noticed the effect long before he was capable of theorising upon its cause. If a stick with a lighted or glowing point is taken and whirled in a circle (an action doubtless performed in prehistoric times) it will be at once noticed, if the speed is great enough, that the glowing end of the stick is no longer seen as a point, but a luminous circle filling its whole path is visible instead. Again, take a flat steel spring and fix it at one end, strike the other so as to cause it to vibrate, and the spring will appear to fill the whole space over which it moves. Now, it certainly does not require much proof that neither stick nor spring can be in two places at once; and the only possible solution to the “mystery” is that the luminous point or spring appears to be in any given spot after it has moved away, and continues to appear there until its return to the same position, when its image again falls on the...
same spot in the eye. The observer thus gets an impression of continuous presence. This taking place all along the path of the moving object naturally causes it in appearance to fill the whole space.

Fortunately as this, like most other experimental facts, admits of simple verbal expression, one sentence suffices—we continue to experience the visual effect of light after it has ceased to act. Such is this phenomenon known as Persistence of Vision. There is a deficiency of the human eye of which we have taken advantage. This wonderful organ of ours has a defect which is known as “visual persistence.” The brain persists in seeing an object after it is no longer visible to the eye. Let us get it clearer. The eye is a wonderful “camera.” The imprint of an object is received upon a nervous membrane which is called the retina. This is connected with the brain, where the actual conception of the impression is formed, by the optic nerve. The picture, therefore, is photographed in the eye and transmitted from that point to the brain.

Now a certain amount of time must elapse in the conveyance of this picture from the retina along the optic nerve to the brain, in the same manner that an electric current flowing through a wire, or water passing through a pipe, must take a certain amount of time to travel from one point to another, although the movement may be so rapid that the time occupied on the journey is reduced to an infinitesimal point and might be considered instantaneous.

When the picture reaches the brain, a further length of time is required to bring about its construction, for the brain is something like a photographic plate, and the picture requires developing. In this respect the brain is somewhat sluggish, for when it has formulated the picture imprinted on the eye, it will retain that picture even after the reality has disappeared from sight. This peculiarity can be tested very easily. Suppose the eye is focused upon a white screen—a picture suddenly appears. The image is reflected upon the retina of the eye, and transmitted thence to the brain along the optic nerve. Before the impression reaches the brain, the picture has vanished from the sight of the eye. Yet the image still lingers in the brain; the latter persists in seeing what is no longer apparent to the eye, just as plainly and distinctly as if it were in full view. When the image does disappear it fades away gradually from the brain. True, the fading of this continued impression in the brain is very brief. In the average person it approximates about 1/10th to 1/24th of a second, subject to the degree of intensity, duration, and colour of the light received by the eye. Still, in a fraction of time a good deal may happen, and in the case of animated photography it suffices to bring a second picture before the eye ere the impression of the preceding image has faded from the brain.

It is interesting to note that the first written reference to Persistence of Vision is contained in the fourth book of "De Rerum Natura," by Lucretius, dated about 65 B.C. He says, "This (perception of movement) is to be explained in the following way, that when the first image passes off and a second is afterwards produced in another position, the former then seems to have changed its gesture. This we must conceive to be done by a very rapid process, . . . ."

This, of course, only expresses the fact of persistent vision, and mentions no means for its demonstration.

Throughout the ages many men put forward theories with regard to persistence of vision. This history needs a further article to give it full justice, and perhaps I may have the opportunity of referring to it at some later date, so we will take up our story again from the time when inventors were trying to reproduce movement by photographic means.

With the advent of snapshot photography, a Mr. Muybridge, an Englishman, resident in San Francisco, in the year 1872 conceived a novel idea for securing a series of snapshot pictures in rapid succession. He built a studio beside a track, in which 24 cameras were placed side by side in a row. On the opposite side of the track, facing the studio, he erected a high fence painted white, while across the track between the studio and the fence, 24 threads were stretched, each of which was connected with a spring which held in position the shutter of the camera. When all was ready a horse was driven over this length of track at a cantner, trot or walk, as desired, and as the animal passed each camera, it broke the thread controlling its shutter, so that the horse photographed itself in its progress.

After this method of photographing the movements of a horse, many men attempted taking pictures on glass plates.

Among them was William Friese-Greene, who in 1880 engaged himself in scientific research relating to photography, particularly with regard to photographing animated objects in motion. In 1885, he built an adapted camera which was used for taking "Motion Pictures" by merely turning the handle of the machine, this operating a circular shutter to permit the exposure of separate sections of a sensitised glass plate. In 1887 he devised and constructed a camera to take photographs upon a sensitised strip of paper, about 50 feet in length, which was wound upon two rollers, a feed roller and a take-up roller, which strip of paper passed through a guide across the light aperture of the camera, the strip being intermittently exposed upon the revolution of the circular shutter, when the apertures therein registered with the light aperture of the lens.

In this camera he employed a strip of paper perforated at both edges, the perforations being for the purpose of permitting registration of a pair of sprocket wheels with either edge. These sprocket wheels were driven by what was termed a star movement, to give the intermittency of motion. Turning the crank of the camera caused the star movement intermittently to engage a toothed wheel fixed to the shaft carrying the sprocket wheels, which in turn, when operated by the star movement, moved the film forward step by step across the light aperture, permitting successive portions of it of equal area to be uniformly and regularly exposed while stationary, thus producing upon the strip of paper a series of equally spaced equidistant images, or negatives, each negative showing the animated object in its successive phase of motion. The pair of sprocket wheels were mounted on a common shaft and engaged the perforation in the edges of the paper strip at a point intermediate between the feed and take-up rolls and just below the aperture, drawing the strip downward across it.

The feed roll by the series of pulls of the sprocket wheels upon the strip was caused to rotate in a successive series of motions, each causing to unwind therefrom sufficient of the paper to produce a loop or slackness of the strip between the feed roll and the guide, so that in the taking of pictures and turning the handle of the camera, the paper strip should not be under such stress or strain arising from the pulling of the sprocket wheels as to cause a breakage or tearing.

(Continued at foot of next page)
The Visatone System of Sound Recording

Capt. H. J. ROUND

The following article is a report of a lecture given by Capt. H. J. Round, M.I.E.E., Director of Technical and Research Processes, Ltd., to The Association of Cine-Technicians, at The Crown Theatre, Wardour Street, on March 4th.

CAPTAIN ROUND opened his lecture by recalling that he was interested in sound recording as long ago as 1901, when he was still at the Central Technical College, South Kensington. Dudell, the inventor of the Oscillograph, was experimenting there at the time and he was fortunate enough to assist him in the making of these early recordings, which were of the type now known as Variable Area. The width of the track was rather wider than that in use to-day and the density was about 5, but this was probably the first recording done in the world, although some variable density work was being carried on by Rumer about the same time. He did not recollect that their recordings were ever played over and in fact no one was much interested, as the Boer War was then in progress.

The subject was, however, revived again in 1929 by Captain Round, who produced a disc system which is now in extensive use. Disc recording was then the principal method used in England, and he thought it time to take up the question of sound on film.

His assistant, Mr. Langridge, who is now at Stoll's, designed the first sound camera, and erected duplicating and fixing apparatus for rewinding film in 90 ft, lengths. This first recording was of one minute's duration and the only intelligible word was "the." Many difficulties were met with; one of the greatest being to keep the speed of the film constant, although speed was a comparatively easy question in disc recording. It is now quite a feature of the Visatone system that this problem was solved in its infancy and no serious trouble has arisen since.

Oil-damping was introduced in 1931 and is now in practically universal use. Another problem was mechanical oscillation, which could go on, once started, for as many as thirty or forty seconds, so Captain Round introduced a free fly-wheel inside the ordinary control fly-wheel with oil coupling and with such an arrangement oscillations died away after about one-and-a-half oscillations.

There seemed at one time some connection between flutter effect and sprockets, but no evidence was forthcoming to confirm this. If the recording drum was made to a certain diameter compared with the number of sprockets, the diameter being critical to a mill. or so, the film would be contacted by the first two sprockets alone, and no other sprockets would make contact. Furthermore, if the recording point was four or five sprocket holes away, any kick would be filtered out.

All the early work was done under the auspices of the Marconi Company, and after a demonstration to Sir Oswald Stoll, Visatone was fitted at the Stoll Studios, Cricklewood. The demonstration consisted of a three-minute film shot at 12 frames per second for the picture camera and 24 frames for the sound. Incidentally, the subject consisted of a game of cards between two typists and two clerks.

At this point a change was made to area instead of density, and an oscillograph was constructed with a one-eighth inch reed and a minute mirror, and immediately

Evolution (continued from previous page)

I have given the above description of this 1888 camera because if you read it carefully you will appreciate that it contains all the essentials to make cinematography commercially possible. It embodies the nucleus of all that pertains to cinematography even to-day; that is, a camera that carries a roll of material that is sensitive to light (the negative film); this film having imparted to it an intermittent motion so that it is stationary when the picture is being exposed, and when it is moved on for the next exposure, the light is cut off by means of a shutter; resulting after development in a series of pictures (snap-shots), one after another, on a long strip of material.

William Friese-Greene succeeded in utilising celluloid film in the latter part of 1888. It is interesting to note, however, that when using paper before, he made it transparent by treating it with oil.

It would be well for us all to remember that the Patent taken out in June, 1889, No. 10,131, by William Friese-Greene (copies of this document can be obtained from the Patent Office and a facsimile reproduction of the front page accompanies this article) constitutes the master Patent of the world for a camera that made cinematography, as we know it to-day, possible. This Patent has stood the test of time, having been upheld even in the American Supreme Court.

With pride we should remember it was the invention of an Englishman.
"S" trouble was met with, but was finally overcome by careful control of negative and positive densities.

The optical system was far from perfect and 12-volt, 50-watt motor head-light lamps were used, and over-run at about 19 volts with consequently only a life of three or four hours, sometimes even shorter.

Captain Round recalled an early scene in which he had to record and photograph a quintet composed of a 'cello, a brass instrument and three muted strings, but the scene was not a success, as the strings had disappeared in the reproduction. One film director had actually asked to have a singer taken off the track, irrespective of the fact that an orchestra had also been recorded on the same track.

The lecturer then pointed out the difficulties caused by making the camera speed 24 frames per second, involving the use of 48 cycles. He said that television was using 25 frames, which was the sensible thing to do, considering the nature of the supply (i.e. 250 volts 50 cycles).

Another difficulty experienced was in printing from the negative, and in the early days an old Debré printer was used, but now the problem has been satisfactorily solved.

Visaton Eel (Noise Reduction) Track.

An interesting experiment was tried in an attempt to record whole books on film for the use of blind people. This project, in order to be commercial, involved the use of a number of tracks on one film, and in an effort to make it still less expensive, the film was slowed down to half speed, nine inches per second. The result was somewhat muffled, and at slower speeds it became impossible. Mr. Wright, then Captain Round’s assistant, investigated this, and found that they were hampered by the thickness of the emulsion in the film. The question of getting a thinner emulsion was gone into, and then the idea of stopping the light getting into the film was investigated. The lecturer requested Kodak to stain some film red, and he explained why he wanted it. Kodak asked him to try ordinary duplicating stock, that is, yellow-stained film, and the result was startling, and brilliant recordings were obtained at four inches per second.

He thought he had found something new, but discovered the method was well-known in ordinary photography, and also that a great deal was known about using white light with yellow stock to give fine resolution. The American way was to leave the stock alone and change the light; in fact, the Americans went further and used ultra-violet light. In printing, since the picture cannot be printed on yellow stock, a solution has been found in using white light for the matte, and ultra-violet for the sound, as by using a blue filter, a finer resolution was obtained in the sound print.

Captain Round went on to speak of noiseless recording, and as he started rather late in the day, he found himself up against a great deal of difficulty in overcoming the American and continental patents. The volume expansion methods, in which both area and density were used, was abandoned at an early stage, and another method was tried—now in successful operation.

The first indication of silent track was in 1928, when Lee de Forest suggested that whenever there was absolute silence the track should be blackened out. In 1927, Siemens Halske patented a method of blackening out the track, but careful timing had to be observed, because 1/20 second was the fastest time for opening and closing the track, and even that speed was getting dangerously near to the audible frequency on some of the wide-range projectors. The method Visatone used was to employ a similar principle, but the control took place in steps. The track took a parallel form, and as the intensity of sound increased, the number of tracks decreased. The system was a push-pull one, patented in 1910 by a man who did not realise the full significance of his achievement.

In Captain Round’s opinion, recording was still ahead of projection, but nevertheless recent advances in the latter sphere had enabled recording to show off its finer points. In conclusion, he said that he hoped to realise his ambition of having his apparatus used on important films, as he thought that it was as good as the foreign systems, which were, at the moment, almost exclusively used for major productions.

**Hollywood Letter (continued from next page)**

of “Dead End.” Every little detail was perfect and the sky backing, to represent dawn, was so well painted one could scarcely tell it was not the real thing.

It must not be thought that Hollywood is all wealth and “super” productions. There is another side perhaps even worse than our own quickie business. They are the “hangers on,” struggling to keep going, making five-reel quickies for as little as £900 in two to six days! I think that just about beats our record! This type of producer is lucky if he realises ten per cent, above his expenses and the pictures of course never reach England.

This has only been a preliminary glance into the immense organisations of the American film industry—the third largest in the country. As soon as I settle down and learn the language—which takes some learning—I'll have something more interesting.

Leigh Aman.
Hollywood Letter

Leigh Aman, A.C.T. member, is on a visit to Hollywood and will contribute regularly to the "Cine-Technician" during his stay. There follow his first impressions.

IT is difficult to form any conclusions about a vast industry, having only studied it for so short a time. So here I shall only give a few isolated impressions.

First, a few words about the city itself. It is claimed that Los Angeles has the largest area of any city in the world. I can almost believe this. The distances are amazing and the studios are much further apart than are the London ones. However, no one seems to notice the distances, for of course everybody has a car. As far as position goes, Los Angeles is an ideal centre for picture making. Within two or three hours' motor run there is every type of climate and every type of countryside one could wish for, as well as the ocean on the other side.

My first visit was to the Warner Brothers studios at Burbank. These vast studios have 22 stages and usually keep six or seven pictures running concurrently. This means that there is always plenty of floor space and thus there are no delays moving from set to set. There are many other reasons why an excess of floor space is an economy in the long run. Some of the big sets, costing many thousands of dollars and known to be wanted in future productions, are left standing and the initial cost is divided between each production using the set. An example of this is the pirate ship set from "Captain Blood," which is still standing and is to be used for two future productions. While I am on the subject of sets, I should like to mention the "lots." These are really amazing. There is absolutely every set which could ever be wanted. Of course these have been built up gradually over many years, but when they were built, they were all built to last and not fall to pieces in a week. The perfect climate helps this, as there is very little heavy weather, and when the rain does come, they know when to expect it.

Economy is not always in order. Quite recently a major studio changed from Western Electric to R.C.A. sound. Rather than let any of the Western equipment go out second-hand, every bit was smashed with a sledge hammer! If you want to know what that cost ask Mr. Watkins.

Of the technicians I have met so far, the impression one cannot miss is that of enthusiasm. Everyone on the unit, right down to the call-boy, is equally enthusiastic about the picture in production. The heads of departments take pride in showing what their department is capable of producing. At Warners, for instance, the "prop box" on the set is a whole truck, which contains not only what is called for in the script, but everything that could ever be wanted on any picture. And all neatly packed away in a special place which is card indexed to facilitate its finding. Every minute counts might be a slogan. It is a very rare thing to have to send for anything to the property room. The effects and miniatures are departments in which Hollywood excels. Nothing is impossible for them and the more difficult or intricate a problem is the better pleased they are. It would be quite impossible to describe a miniature I saw at the United Artists studios. Nearly a whole stage was taken up by a vast panorama of New York roofs for the opening shot

(Continued at foot of preceding page)
What’s Wrong?

An Involuntary Symposium


This is an involuntary symposium, because the contributors were not asked to write specifically for this feature; but, taken together, their articles are an opportunity for comment on, and restatement of, A.C.T.’s general policy. As one of our contributors says, finding fault with the industry is a game of which people never tire. A.C.T. finds many faults itself; but it can claim to wield its criticisms into an integrated and self-consistent policy. The following articles reflect, as it were, facets of that policy.

Mr. Chevalier’s article, reprinted by kind permission from “The Kinematograph Weekly,” shows how distorted a conception of A.C.T.’s policy on particular issues can exist;—

MR. CHEVALIER writes:—

The time has arrived when we who earn our livelihood in British studios should face up to the facts concerning the employment of foreign technicians.

The Association of Cine-Technicians is urging war against the retention of foreigners, but is its attitude really in the best interests of our craft? Is there not a considerable measure of justification for the action of the producer in introducing these technicians?

My own opinion is that both the Industry as a whole and all the various grades of technicians have benefited very considerably by the presence in this country of these highly-skilled workers.

It cannot honestly be argued, either on patriotic or business grounds, that this country is self-sufficient where the making of motion pictures is concerned. With hardly any exception, the only pictures to measure up in technical quality with American output have been largely the result of international team-work.

Hollywood’s Example

Hollywood recognised long years ago that the film industry could never be confined within national boundaries, and offered monetary inducement to attract the best brains in every department of production technique. There is no bias in California against foreign technicians, and, indeed, anyone who can contribute to the advancement of picture quality or the improvement of technical resources is welcomed, irrespective of country of origin.

Why, then, should Britain in its endeavour to establish a British production industry, choose to ignore the experience extending over twenty-five years, derived at heavens only knows what expense, of the American technicians.

Lack of Opportunity

What opportunities have the majority of our studio workers had to acquire such experience? As recently as three years ago there were only 38 floors available. These, with the possible exception of Shepherds Bush and Elstree, were small, insignificant stages, totalling in area 207,798 square feet, a rough average of 7836 feet per stage.

The equipment of these stages, at the time, was perhaps adequate for the type of productions being made, but even the most nationalistically inclined must admit that it compared unfavourably in up-to-dateness and efficiency with installations in the average American studio.

No British technician who worked in some of these badly-equipped and out-of-date studios can deny the deplorable conditions under which they were called upon to work.

But while these conditions have prevailed only three years ago in England, Hollywood was equipped with high-grade plant, and was spending hundreds of thousands of pounds perfecting still more accurate and efficient studio equipment.

Suddenly there occurred the whirlwind development of the new British production industry.

By December, 1936, 40 new floors were added, making in all 73, with a total floor area of 765,588 square feet, an increase in three years of 467,790 square feet, or two-and-a-half times the original figure, with a new average per floor of 14,734 square feet, double the original figure.

Some £3,172,890 of new capital was invested in new film companies registered between January, 1935, and November, 1936: a peak total of £24,000,000 being sunk into the industry in 1936.

Stars’ Stipulations

Of this £4,100,000 was spent on production and international stars were brought over from Hollywood, together with top-rate cameramen, sound engineers and laboratory men. The reason for the increase of the latter is that stars with big reputations would not risk their future careers with technicians unknown to them. No one can blame them.

American companies were also establishing key feature production units here, and naturally employed people who they knew could deliver the goods.

Another all-important factor in this situation is that not at any one time was there a sufficiency of high-grade experienced technicians available to fill the positions open in our suddenly enlarged studio business. Consequently, we drew on outside sources, chiefly Hollywood, although the internal national troubles in Germany made available other highly-qualified technicians.

Pushing The Door To

It might have been thought that the advantages accruing from the presence of these men would have been patent to everyone acquainted with the conditions. The newly-formed technicians’ association thought otherwise, and initiated a campaign having as its aim the expulsion
of every one of these foreign visitors who had been busy helping and training our own workers to a knowledge of the technical requirements of modern film production.

Slogans such as "They are not ace men" and "They are keeping out our own technicians" were raised, and when these were exposed, were followed by "They won't allow us in their studios, so keep them out of ours."

Foreigners in Hollywood

This cry is as misguided as the others, for there are numbers of Britishers working in technical positions in Hollywood, where they have been employed for years. Hollywood has proved its kindly interest in our studio business by welcoming with true American hospitality every British representative who has gone to Hollywood. They have been permitted to study conditions, practices and technicalities, and given the essential information necessary for the building of up-to-date studios.

In Hollywood, the American, British, German, Chinese, French, Indian or Swiss all work together amicably, and whatever ability they show they are allowed to use. Above all, everyone specialises in some particular section of the industry.

The two facts which are the secret of American success are amicable international co-operation, coupled with specialisation.

In this country, before we have even learned how to produce a steady succession of first-class pictures, or before we possess the necessary reservoir of highly-trained studio workers, agitation arises to prevent employment of what is termed the foreign technician.

Where are the Specialists?

Touching on specialisation, where are all the specialists, so necessary adequately to maintain large-scale production in this country? Not even the A.C.T. can produce highly-skilled specialists out of the hat; a walk round any British studio quickly proves that fact.

The business of producing pictures is now an international business and the quicker the insular conception is ruthlessly eradicated, the sooner we can get down to the serious business of production. So quit the bickering and get on with the job.

The Secretary, in his reply, also published in "The Kinematograph Weekly," reiterates the facts of the situation and re-states A.C.T.'s policy in regard to foreign technicians:—

MR. ELVIN said:—

Mr. Chevalier, referring to foreign technicians, and linking the subject up with his interpretations of A.C.T.'s policy, says: "Do we need them—Yes!" He says that "with hardly any exception the only pictures to measure up in technical quality with American output have been largely the result of international team work." Has he never heard of Alfred Hitchcock and Herbert Wilcox, British directors, who, with entirely British crews, have for years been making films which have been universally praised for their technical qualities? Further, did he read the letter in last week's Kinematograph Weekly from Fanfare...
Pictures, praising the work of its A.C.T. crew? With one exception, every technician, including the director, on "The High Command," was British.

Mr. Chevalier mentions sound engineers. Can he name a single technically outstanding British production whose sound has been recorded by a non-British technician? There is not a foreign sound recordist at Denham, Pinewood, Shepherds Bush, Ealing, Elstree, Beaconsfield, Wembley, Islington, Shepperton, Teddington or elsewhere. Where are they?

Laboratory men are also mentioned. Perhaps Mr. Chevalier might care to ask Harry Stradling for a comment on British laboratory technicians. "They are excellent" was his comment in the April issue of The Cine-Technician.

Mr. Chevalier says British technicians can work in other countries. Can they? Can he negotiate the necessary employment contracts? If so, there are dozens waiting for such an opportunity, including many who, for example, have proved their prowess by work with Alfred Hitchcock, Herbert Wilcox, Alexander Korda (a British subject, Mr. Chevalier), and other leading British producers.

I agree that we cannot produce highly-skilled specialists out of the hat. But neither do we, Mr. Chevalier, talk out of our hat. I do not quite see how a walk round any British studio proves your point, whatever it may be. An empty floor proves very little, except that the millions of pounds sunk (an appropriate word) into the industry and spent on "international stars" and "top-rate" technicians, is not a very good advertisement for whatever you mean it to advertise.

Mr. Chevalier says the time has arrived when we who earn our livelihood in British studios should face up to the facts. Is it not also the time when those who are qualified, but denied the right to earn their livelihood, should also face up to the facts? Over a third of the British technicians are unemployed. Many of this number have records for technical quality of work which compare favourably with any other technician, whatever his nationality. Let us not underrate our own technicians while claiming art to be international. All A.C.T. asks is for an important British industry to be regarded in proper perspective.

We are not opposed to foreign technicians as such. We greatly appreciate the service some of them have rendered the British industry. But we also know that others have done work which could equally well have been done by a British subject. Let us remember that every foreign technician is not ipso facto an "ace." Equally, every British technician is not incompetent. All we ask is that British technicians be employed when they are available to do a particular job. The present is obviously such a time, except as far as those persons who may happen to be in a class of their own. Whether he be a Lee Garmes, a George Permal, a Vincent Korda, a Fred Young, a Bernard Knowles, or an L. P. Williams, we are proud to have them in our industry. But, even here, we plead for it to be equally easy for the latter to work abroad as for the former to work in England. On the grounds, if you like, Mr. Chevalier, that art is international.

A.C.T. is not opposed to foreign "aces," provided they are "aces," as long as there are no equally expert British technicians available. All we plead for is that employment be given to British technicians, provided (1) they are available, and (2) they are competent to do the job. Who can call this policy unreasonable?

Our two contributors, Mr. Fairbairn and "Flicker," now take up the theme with their comments on the positive need for training for, and control of entrance into, film production. While not committing the Association to every word of theirs, we may point out that this need for training and apprenticeship has been a point, at any rate of discussion, in A.C.T.'s policy for three years now; and we are shortly hoping to achieve results through collaboration with public bodies:—

MR. FAIRBAIRN says:—

Members of the audience, you have read about the rapid and romantic rise of the British film industry. You may also have read at a later date sad cases of studios shutting down, and it seems hard to reconcile these two statements. Actually the first is what Americans might call "boloney." If, on the strength of our rapid and romantic rise, the Clark Gables, William Powells, Greta Garbos and Ginger Rogers were barred from our screens to make way for the counter British attractions, what would you do? As an irritant, the subject would vie with the weather.

Here is a modern fable. There are two men, A and B. A lives in the United States and B lives in England. A, after many years' work, builds up a prosperous business and sells his wares, not only in his own country, which he can adequately supply, but in foreign countries as well. The manufacture of these wares requires skill and experience, and A is careful to have all but a negligible amount of the skill and experience at his disposal. Once upon a time, in the pioneering days of the business, A and B worked almost level-pegging. Circumstances arose which seriously handicapped B and allowed A to outstrip him. A forged ahead whilst B slid back into obscurity. Years pass, and B, who buys A's wares and knows he reaps a good profit into the bargain, decides to rebuild his workshops and make the same thing himself. An admirable spirit. B is in such a hurry to get to work that he does not ponder over A's formidable experience in a business where experience is of paramount importance. He gathers together the odds and ends which have not been garnered by A, together with a few more who have left A because A found someone better, and enthusiastically begins to copy A. The fact that he has the cream of the brains working for him does not deter B. He goes merrily ahead. Then he takes some of the articles he has succeeded in manufacturing and tries to sell them in A's home territory. Some people call it optimism. Others use a different word. B comes sadly home again and says it is not fair that he should buy A's goods whilst A refuses to buy his. It is still true that if a man makes a better mousetrap than his neighbour, people will make a beeline for his door, but if he makes a decidedly worse mousetrap, wild horses or super-salesmen won't bring them there. Not that A and B make mousetraps. They don't. A makes films in America, and B makes films in Britain. When a producer here sets out to make a picture with the hope of selling in a foreign market he should bear in mind that he is not doing it to fill a demand, or even as a favour (Hollywood can make enough pictures to fill most cinemas week after week, and keep it up indefinitely), but will have to meet competition on a grand scale.

Just now the British industry is going through a bad time. Quite a number of film technicians searching for work will tell you that. The general feeling is that it will pick up again in a few months. I sincerely hope it will,
but let us consider a few facts. Film-making, with the attendant glamour publicity, opportunities for big money, and variety, attracts many types of people. Glamour publicity, big money, and variety attract millions of them. Genuine love of the art attracts the remainder. I may overestimate the number who regard it as an art, but no matter. Mix all these types together and see the chances that the wrong ones will come to the top. It happened previously in American films, and they in their turn hit bottom before weeds out the shaft and having another try with a purer mixture to begin again and ground. We are undergoing the same process. Some of the dirt is bound to remain, and some of the mixture will unfortunately be lost, but the resultant mixture could be a better one. An American director, screenwriter, and part of our studios, and asked for his views on British films. Said, "I think your sound picture does are marvelous. That music, musical film, story, and art, could and should be a better job in every than most of our production of their foreign studio. Many of the Hollywood studios still show signs of their production days. Ransacked buildings have their found behind the newer ones which have been added. After all it is what goes on the screen that counts, and that it is too bad what happens into those buildings to work Beams in a barn will not penetrate. Empty heads in a picture will not benefit.

Finally, if I may be so bold, a name for success. Let us start a training school for selected young men and women in all branches who have given proof of their ability and desire to continue the art. More to one or two super talents would satisfy that. Let us keep them employed all the time at a reasonable salary. This is better than a huge salary one week and work the next. Remember what they are working, they are learning and becoming more mature. While they are not working, they are worrying and waiting. Let us send out present stars who now produce production are narrative at all. By spending more time and patience writing new talent and all may rise. New talent has its place in the towns and villages of England. The material is there at all right, believe me.

Let us drop the American technique; making pictures and develop a new one of our own. Let each of our studios concentrate on one type of film—comedy, drama, musical, spectacular, mystery, and so forth. It should instead of jumping from one type to another. Most of them do. Experimenting in a letter or a sort of experiment, but only when the experiment can bear the brunt of possible failure without passing its adverse effects out to those around him. Specialisation is one of the secrets of success in agriculture and Hollywood knows it. Except for maybe, the biggest studios which have a market corner in material, the rule is followed here. Here we aimlessly turn from one subject to another and expect to get good results. Compare the various doctors and his knowledge of the eyes, ears, nose, and throat, with that of the specialist in any of these branches, and you will see what I mean.

Here is the day when we can build up of our films not because of the money which has been spent on them, but because of the quality and entertaining value which there are in proportion to the money spent. When this happens, we can have the picture optimally, so far as the industry is concerned knowing that production is in the right hands.

**FLICKER** says —

Finding fault when making pictures is a personal occupation, but until last year the British producers had many people that convicted work. The films are made, and that is present conditions of the British picture industry. The alarm is being raised already, and it is good. There is where with the new studios and the new producers, the possibilities are enormous. It is well for them to know that. We hope that no one will confuse their picture business with the business, but to the screenwriter and the producers. A few hard words from the producers is necessary to appreciate the better and high standards which old British films and their cinema struggles. A few hard words from the producers is necessary to appreciate the better and high standards which old British films and their cinema struggles. A few hard words from the producers is necessary to appreciate the better and high standards which old British films and their cinema struggles.

Where is the blame for the present state in the art and what should be done about it?

To learn what there is for the producer. He has a great deal to say as to what sort of pictures are to be made and how it is carried out. It is his mission that is going to be spent. To be the head of a film production company. A man must be something of a business man and unfortunately the business man is seldom an artist of any sort. The exception to making two good films when only an average person can succeed. Many of the directors have been able to see beyond the practical and the thing is to get the manuscript and the reaction to come. As a result of pictures have been made and sold on a basis of misrepresentation and impression until the public is taken with advertising and publicity with a liberal dose of salt.

Now that one must believe the B.B. view. In a certain small percentage of a certain number of people. There is a change in the situation. The feature film has been the feature film. The subject is in the public mind, and the question is to make a feature film of the same type. We want an American picture producer. There are several in the field who possess the qualities in the unscrupulous producer. The type is this to be arrived at by the simple course of the survival of the fittest.

But, given the producer who is not only unscrupulous but has the idea of what he is trying to do. He must not be a director of pictures and ideas, and have a capable technical staff and players who will sympathetically carry out his ideas.

Where is he to get them?

There are, of course, the other studios. He may watch the people who show signs of ability employ them, and type them along lines of his own probably. It may mean that he goes into the byways and bypaths and selects people who seem to have the artistic instinct required. He will have subordinates who will write their productions. He may have the knowledge and talent he needs.
has not been any great opportunity presented to him. Obstacles have been constantly placed in his way owing to the attitude taken by dogmatic and, in some cases, "dilly-dallying" producers. But these conditions are now, through necessity, changing.

There should be a motion picture university, a school run by and for motion picture people. It should be run as an experimental studio for the training of directors, cameramen, scenario writers, editors, etc. It should, in short, duplicate a studio on a small scale. Such a school could be made profitable from a purely financial standpoint, owing to the wide interest prevailing in motion picture production. And think what it would mean to the producers eventually!

It would have to be a practical school, maintained with the co-operation of the leading producers, directors, writers, etc., and with the practicability there would be a fine idealism and venturesome spirit leading to a new advance in the film craft. The Russians (whom Castlerosse would have us believe are a great people at kidding!) have such a school run from economic necessity and foresight, and its value for raising the artistic standard is undeniable. This only goes to prove that the lectures given on various subjects, by arrangement of the Association, are of great value to the industry. I look forward to the not far-off time when these will be on a larger scale, thus assuring to the producers the aim of A.C.T. to improve the standard in all branches of the industry, as well as the status of its members.

But we must not forget A.C.T.'s basic policy is the maintenance and improvement of the economic status of technicians; that ensuring jobs to British technicians and starting apprenticeship schemes mean nothing if we allow technicians to do jobs for which they realise they are not receiving the proper remuneration. In Miss Lejune's article, which we reprint by kind permission of "The Observer," A.C.T. finds itself backbone from an independent and influential source its dissatisfaction with recent wage-cuts and its resentment at it as a piece of window-dressing after the crisis, with no real attention paid to the sometimes appalling executive errors in production that are really to blame for what's wrong. Readers should take this article in conjunction with the General Council's Annual General Meeting motion on the crisis.

**Miss LEJEUNE says:**

Henry Ford, speaking of wage-cuts in a time of financial crisis, once said that this was the easiest and most slovenly way of handling the situation. "It is, in effect, throwing upon labour the incompetency of the managers of the business. To tamper with wages before all else is changed is to evade the real issue."

It is a curious fact, from which we are at liberty to draw our own conclusions, that this policy of recovery is the one chiefly adopted, at the moment, by the British film industry. As soon as they felt themselves approaching, if not a crisis, at least a severe depression, the first thought of every responsible executive was to reduce the wages and salaries of his staff.

There is hardly a studio in England to-day that is not taking an all-round cut in salary of 10 per cent. or more. Some of the employees are said to have taken it voluntarily; others have undoubtedly had it thrust upon them. Although the amount saved on the weekly pay-roll would be light-heartedly thrown away in the next five minutes on the floor, nobody in authority seems to have noticed the paradox. Do the producers really imagine that they can save their companies by these small-time economies? A company that can be saved by the wages of the cutter, and the typist, and the cameraman, and the wardrobe girl, might surely be allowed to go bankrupt without regret.

Any producer who reduces a man's wages from £50 a week to £25 a week, confirms the evidence of his own incorrect judgment. Either the man was overpaid before, or he is underpaid now. In point of fact, underpayment of the smaller responsible jobs is one of our industry's worst evils. Ten pounds a week is not a generous wage for a cutter who has in his hands the material fate of a £100,000 picture. Five pounds a week is hardly excessive pay for a woman who handles the delicate business of a firm's publicity. Twenty pounds a week for writing a script for an expensive star is not an unreasonably dashing figure. Our film industry has not the first economic notion of payment for service. What the small wage-earners need, and what they would get in any sanely organised community, is not a cut, but a substantial increase.

The Government, which seems disposed according to the answers to questions in both houses on Thursday to offer the industry protection of a practical nature, would do well to consider this problem of the allotment of money. It has been said that the present crisis in production is largely the result of extravagance by producers. That is probably true, but the money that has demonstrably been wasted by the majority of British film companies in the last five years has not been wasted in workers' wages. It has not even been wasted on the floor. It has been wasted because nine out of ten British films go on the floor without sufficient preparation. It has been wasted by the sheer incompetence of the producers, who have not realised that the heart of every film is an adequate and adequately paid personnel.

The average British studio is under-staffed and underpaid in every department, but in none more than the scenario department, which is the foundation of the whole business of film-making. A company like Metro-Goldwyn or Paramount has something like sixty employees in its scenario department. We, if we are enterprising, have six. One of our companies, in the first panic of retrenchment, decided to abolish its scenario department altogether. At the same time it was running up the salary of a high-priced star for whom a story had to be found within a reasonable time under strict contract penalties. Another scenario department was so loosely organised that an author in England was writing a second script while an entire unit was ignorantly shooting on a first script many hundreds of miles away. It is no unusual thing for a picture costing £120,000 to go on the floor with a script half-written, or for the script to be re-written on the set before the day's shooting begins.

This sort of thing is the real extravagance, and films will never be made economically while it is allowed to continue. There is no extravagance in paying a man what he is worth in wages, in investing heavily in salaries with a view to a certain return in profits. The British film executive has still to learn, and he will not be successful until he does learn, that the labourer, the real labourer, is worthy of his hire.
The Young Idea

On Thursday, March 18th, the students of the Regent Street Polytechnic School of Kinematography showed nine sub-standard one-reelers they had made. Mr. Hibbert, the Principal of the School, in his opening remarks, stressed the fact that each of these films was purely an individual job. That is to say, each student was his own scenarist, cameraman, director and editor. It is, therefore, understandable that the films were very open to criticism in detail, but the impression they gave on the whole was a remarkably good one. The Polytechnic course in Kinematography lasts two years and these films are made by the students at the end of their first year. The ability shown suggests that, after their further year's training, some of the students should be well equipped to attempt on a professional career. The snag, of course, is that there is no definite entrance from such a course into the industry. It is a pity this should be so, and provides a further argument for an Apprentice-ship Scheme in the industry along the lines consistently urged by A.C.T., and the necessity for which Miss Lejeune stressed in her article reprinted in the previous issue of the Journal.

The most striking of the films shown was "Eight-Thirty-One," by S. H. V. Durell, which portrayed the routine of the suburbanite's daily journey to town. This showed a good grasp of three-dimensional cameraangle and had some interesting dissolves in which attention had been paid to composition in the dissolve itself, a quality all too rare in the professional cinema. Durell had the most naturally dramatic subject to deal with, and some of the other films, with more prosaic subjects, suffered by contrast. The films were accompanied by music from the non-synch., and by a spoken commentary delivered by microphone by the authors. The commentaries for "From Forest to Showroom" (C. B. Heath) and "Brickbats" (M. W. MacLaren) showed ingenuity and counter-balanced the sometimes un-cinematic nature of the mute. The other films were:—"Territorial Camp 1936" (J. Philipson-Moss); "Milk and its Products" (B. Westwood); "Quarrying" (G. A. Trickett); "City Street" (J. W. Ritchie); "Water" (P. D. Hunt); and "East Goes West" (Sing). While varying in cinematic merit, they all showed good observation. The commonest fault was the lack of sense of tempo, an inability to gauge the audience—length of a shot or sequence of shots. It is hard to throw away shots that it has taken pains to photograph, but it is a ruthlessness that has to be learned.

While it is obviously good that the Polytechnic students should experience the responsibility of these one-man films, I think that if it is the intention to train them for probable entry into film studios, it would be valuable to have a film made each year, on a larger scale, by the students working as a team, to teach them something of that multifarious co-operation needed in the commercial studio.

An interesting afternoon.

Sidney Cole.

SOUND RECORDING FOR FILMS

How often has a good film been marred by lack of attention to detail! In sound recording as in other branches of film technique, slapdash methods are out of date. That is why an ever increasing number of producers REPEATEDLY ENTRUST THEIR RECORDING TO LEEVERS-RICH.

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Mad Dogs and Location Units

By THOROLD DICKINSON

At the end of August, 1936, Fantare Pictures sent a small unit to West Africa to shoot scenes, take research stills, study local color, and bring back props and costumes for their first production, "The High Command," due on the floor at the Ealing Studios at the beginning of November. The Company ignored a tendency among associates to ridicule the project, a sentiment which evaporated when the results were shown in the finished film. The unit consisted of only four persons which was an acid test of their capabilities and temperaments. The four were Gordon Wellesley, producer; John Seago, production manager; James E. Rogers, cameraman; and the present writer, director.

Our itinerary consisted of a voyage from Liverpool to the Gold Coast, where we started location work. (Before this began there were fourteen days of fun and games, laced with benevolently fascist conversation and the kind of music that the B.B.C. emits in its morning programmes). After the Gold Coast, Nigeria, where we spent two weeks on a 2,000-mile railway tour; two weeks in Lagos, the chief port; and, additionally, half the unit spent a further week inland in Southern Nigeria.

Our problem was to complete a journey of some 11,000 miles in eight weeks, during which time we were to expose 16,000 feet of film, the greater amount of material to fulfill a required schedule of shots; the remainder to be used to make a two-reel documentary short. And all this before the end of the rainy season, for we were gambling on a combination of sunlight and cloudy skies to give us a better effect than the brassy skies of the dry season.

The cameraman controlled and operated the camera equipment (his own Eclair and a Newman-Sinclair hand camera), the 16,000 feet of film specially packed for tropical conditions, the magnesium flares for night work, and, occasionally, the local electric light supplies. Fortunately Rogers had been to the Gold Coast before and his advice was invaluable in planning the trip. This experience also made it just possible for him to work without an assistant, but we determined not to indulge in this false economy in future, for the time spent on work which an assistant would otherwise have done could have been better employed on survey and other preparation work, and the physical strain of working in the tropics under these conditions was intense.

The producer's function was two-fold; first to make all the contacts with the civil and military authorities in order to explain the nature of the facilities required, and to round off these contacts on leaving; secondly, to take and keep a record of all the hundreds of stills necessary for art direction and publicity work. Wellesley used a Leica throughout, with the usual reliable results.

The director accompanied the producer in all contact work of a technical nature; directed the shooting of all scenes (these covered back-projection plates, atmosphere shots, long shots involving the use of doubles of the studio cast chosen from among the local European and native population; and documentary shots) and kept a continuity record of all film exposed.

The production manager handled the finances of the expedition, arranged all supplies of food, transport, sleeping equipment (including beds, bedding and mosquito nets), etc., and had charge of the staff of four native boys; steward, cook, and two assistants.

The first thing we had to learn was the enmity of the tropical sun. On the voyage out one of us went ashore in a heavy rainstorm at Sierra Leone in an ordinary trilby hat. He spent most of the time in shops and in a taxi, and he was under cover in the tender going to and from the shore. But he suffered for three days afterwards from "a touch of the sun," headaches, sickness and dizziness. From dawn till 4.30 p.m. we learnt to wear a topee and like it; to wear aerytex underwear and change it often; sweat thoroughly at least once a day; and carry thick woollen jerseys for the occasions when we worked through the dusk into the night. We soon found that the European routine of work in the morning (indoors whenever possible), light lunch, siesta till 4 p.m., exercise before sunset, a bath, a quinine tablet with soda water, and a long disinfecting glass of whisky as night falls, is based on sound medical experience. Our own mad-dog routine was dictated by the demands of our job and was justifiable because of the short space of four weeks available to us.

Howard Carter Portrait.

THOROLD DICKINSON.

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Howard Carter Portrait.
We rose at 6.30 a.m., worked out of doors—sometimes from 11 a.m. till 5 p.m., or during the whole morning and again in the afternoon; sometimes all day and through till after nightfall, when the dangerous drop in temperature occurs. We all had bouts of fever, which we generally overcame by a night of sweating; except the producer, who had to endure a fortnight of malaria, a legacy from his previous tropical experiences.

Facilities in a British colony are only possible by one means. Once the Colonial Office had read and approved of the adaptation of our story facilities were arranged in Africa on a most generous scale. Wherever we went, instructions from the Colonial Office preceded us, and our requests were met with courtesy and despatch. It was therefore possible, as an instance, on our voyage out to land at 9 a.m. at Takaradi (on the Gold Coast), motor 80 miles to Cape Coast, where we reported to the District Officer and shot stills of the old Portuguese castle; then to drive back to Takaradi—taking in Elmina Castle on the way, where we shot all the necessary movie material and stills in four hours—and return to the ship by sailing time, 7 p.m. A good 10 hours' work.

The following day was spent at Accra—landing by mammy-chair and surfboat—calling on the Governor, Sir Arnold Hodson, a charming man who, among many distinctions, wears no topee on a cloudy day, and pursues the strange hobby of writing and producing an English pantomime annually, which is performed exclusively by native school children. He allowed us to shoot scenes in and around his residence, formerly the Danish castle of Christiansborg. These old castles and forts of Africa's Slave Coast are magnificent buildings with a bitterly romantic history.

Next day we landed at Lagos, Nigeria's chief port. With help both general and particular from many people we four set off within three days on our two-thousand-mile railway journey through the country, living in a railway coach composed of a living room, bedroom, bathroom, kitchen, servant's quarters, and an observation platform.

We spent a day on the banks of the Niger River at Jebba, reputed to be one of the hottest settlements in the whole continent, close to the place where the explorer Mungo Park was drowned. It was here that we first had the experience of finding our wooden number board too hot to hold in the naked hand. The climate on the coast was hot and steamy and sapped one's energy in a most unpleasant manner, but as we travelled north, inland, the heat became drier and the sky less overcast. Our coach and van were hitched on to passenger and fast goods trains, according to a very elastic schedule, and we had only to send a telegram to the next stopping place to have the very obliging railway officials change the schedule to our convenience. A remarkable amount of the goods traffic of the Nigerian railway consists of nuts: ground, or pea, nuts transported from the south (where they grow) to the north, whence caravans convey thousands of sacks full into the interior. And there are kola nuts, eaten as a stimulant, which are hospitably handed around as cigarettes in Europe. They are by no means cheap: a market basketful costs about 10s. We often used them as gifts in return for services rendered; and cows were used also as payment. In return for two cows and four hundred gallons of native beer (which looks like milky tea and tastes very odd) a pagan chief in the plateau country near Jos summoned 1,500 natives for us at a day's notice, and staged a dance which lasted far into the night. The most expensive item of this dance was the firewood, which we needed for a bonfire, for these plateaux, 4,000 feet above sea level, are nearly treeless, and in fact resemble the more dramatic landscapes of Dartmoor, with rocky hills rising out of rolling grass-land. The natives of the plateaux are pagans (i.e. not Mohammedans) and are friendly, graceful, and nude. The men wear a sheet of plaited straw, and the women a bunch of leaves, or a little straw seat with one leg, which hangs behind them between the buttocks. Like all the natives of Nigeria they always carry loads upon the head.

From Jos we travelled on to Kano, a sprawling mud city with several hundred thousand inhabitants, and the biggest market in Africa, which has been a junction for over a thousand years. Here the Emir took a keen interest in our work, and several of the younger native members of his administration service helped us most generously and intelligently in the tasks of organising crowd scenes. This district of some 2,000,000 inhabitants is ruled by the Emir, as certain provinces in India are ruled by Indian princes. We spent a week in this fascinating city, and exposed several thousand feet of film. The mud architecture here is simple and well-proportioned; bold patterns cut in the surface of the walls distinguish the more important buildings. The interior walls of some of the rooms in the Emir's palace are painted with similar patterns in vivid colours, gold, and silver, which gleam in the dim light from narrow openings in the thick mud walls. The roofs of these mud buildings are supported on arches of wood, and the rooms are high in proportion to their floor area. A few mud houses are still in use in the European quarter outside the native city, and some of these were copied as sets in the film.

The rest of our time in Nigeria was spent in and around Lagos, where the abnormal continuance of the rains was a handicap. Thus only our producer could return on the ship on which we had planned to sail home. At the last moment, so as to have a further week in Nigeria, I arranged to fly back to England; and as the Imperial Airways' route was not yet in use for passenger traffic I took the only other route—motor barge from Lagos along the inland lagoons to Cotonou on the coast of French Dahomey; thence by air, north, from Dahomey to Niamey on the Niger; along the Niger to Gao (near Timbuctoo); a long hop across the Sahara to Loughoun, an oasis south of the Atlas mountains; Algiers; Marseilles; Paris; London. Six days. The route has much to commend it. The planes are reliable, their crews efficient and cheerful. There are good hotels right across the desert, and the views over the desert are unforgettable. I reached London on the same day as Wellesley, and my entire expenses were only £15 more than his.

A fortnight later the other two arrived by boat with further excellent material which they had shot during their extra week in Southern Nigeria. They had with them, moreover, a railway van full of native costumes, furniture, a crate of cactus, and a monkey. And so our production was enriched by a number of invaluable shots and a great deal of authentic detail work in settings, story points, acting, and general atmosphere, which we could never have injected into the film by merely hiring a gang of "experts" and working to their views second-hand.
Studio Lighting for Kinematography
By BRYAN LANGLEY

The following is a report of a lecture given by Mr. Langley to The Royal Photographic Society on December 8th, 1936, and is reprinted, by kind permission, from "The Photographic Journal."

The meeting was held in connection with the Exhibition of Kinematography and was arranged by the Association of Cine-Technicians.

Instead of giving a collection of half-understood rules, which are, in this business, at least, only a collection of personal experiences (and, even so, one has the feeling that experience is simply plenty of mistakes that one has got away with), I am going to give a fairly detailed account of one particular sequence in a film which I have recently photographed. I believe that this should be more interesting to you, and far simpler for me, as it is about something that has actually happened. I have been lent a reel of film to illustrate this talk, so you can judge whether the methods I used were right or not.

"Kathleen Mavourneen"

This reel of film is from a picture entitled "Kathleen Mavourneen," starring Miss Sally O'Neil, Mr. Thomas Burke, and many other famous people, "Kathleen Mavourneen" was directed by Mr. Norman Lee and produced by Mr. John Argyle, to whom I am indebted for the kindness of lending me a reel of film. Co-operation like this between producers and technicians is a very good thing, and I for one do appreciate it.

When Mr. Elvin (the Secretary of the Association of Cine-Technicians) rang me up to ask me to contribute this talk, I was somewhat puzzled as to what to do. Mr. Argyle, with many nice suggestions, soon put me on the right track.

Upon reading a script we find that in the forefront of each sequence is a description of the scenery and general atmosphere of that sequence. For example, a ballroom sequence would give descriptions of the type of ballroom, magnificent or faded, local hop or Palais-de-Dance. A London street scene would give descriptions of the type of street, time, crowds and that sort of thing. In our particular case it is a farmhouse, and I will read what the script says:

The picturesque farm in Southern Ireland. It is a plain, two-storied lime-washed building, with a little porch over the front door, ivy growing round the windows and some geraniums in pots on the window-sills.
The jaunting car drives up to the front door. Mary Ellen, followed by a dairymaid, comes rushing out of the house to greet them.
Then comes dialogue and action of the following scenes.

Next we have details of the interior of the farmhouse.

Scene 89: Interior Farmhouse. Day.
The large oak-beamed kitchen, living-room of the farm. In the spacious fireplace a crane is holding a skillett (three-legged pot) over the fire. It is steaming.
Sides of bacon are suspended from the ceiling.

I am going to add that upon reading this I had visions of going to Southern Ireland and having a good time—plenty of fishing when it rained, and I am told that it rains every third day in Ireland—a nice holiday in fact! But this Utopian dream was not to be.

One day, while shooting, my chief electrician came to me and said: "Seen the set next door?" I said: "No! What is it?" "The Farmyard" I was told. "They are having real pigs and real chickens. Mr. Argyle believes in the proper thing. Will you come and light it?" I was staggered, but followed him in. There were masses of carpenters rushing about, the Master Carpenter leaning against a "No Smoking" sign looking as though he were puffing an imaginary gasper—perhaps he would have been but for Mr. Argyle and the pigs and chickens, etc.

At 4 p.m. the set was in this crude state. My job was to tell the chief electrician where I wanted my lights and necessary spot-rails and gantries.

Suggesting Sunlight

Now I always endeavour to reproduce Nature in its most attractive form and when reproducing sunlight with lamps the obvious course to take is to place the lamps at an angle such as the sun might make to the set. Consequently, the lamps must be as high as possible from the ground, so I had a hanging bridge constructed down the centre of the set. Upon this I ordered four 700 mm. sun arcs interspersed with 3 kos. each side of the bridge. These sun arcs are of a type which allows a ground glass diffuser to be placed in front to soften the light. The 3 kos. were for picking out details. Of course, the arc lamps generate a very blue ray, which compared to the yellow ray of the inky lights is not nearly so effective to panchromatic emulsion.

Looking at the ground plan I could see that the house was admirably built for relief lighting, so I ordered a 1000 mm. sun in the far corner of the studio. This was
to light the whole house. Opposite the gate I put a 700 mm. Also at the four corners of the set I placed a 700 mm. for emergency. Between these suns I put 3 kos.

A night staff of carpenters was ordered to build the set and a night staff of electricians to rig the lamps. As the set was wanted by 9 o'clock the following morning, I had to be there by 6 o'clock in order to check that my guesswork of the positions of the lamps was correct and also to blend and direct all the lights. I arrived the following morning at 6 o'clock. The electricians had not completed the cabling out to the lamps, so I collected a camera and set it up for the best long-shot. I remembered that in the preceding shot, taken in back projection, the pov and jaunting car were travelling from right to left of the screen. The set was constructed with the gate on the left of the set, so I decided to start the car inside the barn and cover its entrance with a tree. Then, as the foreground was empty, I placed a row of palings and added spindly trees to break up the picture as we panned across. While I was doing this the electricians had done their job and I commenced to blend the lights.

(At this stage a reel of the film containing the farmyard and interior of the farmhouse was projected.)

You will have noticed in the background of the farmyard, on the left, a white barn with an overhanging roof. I decided to make this my outstanding section. The face of the barn was white. I had a 700 mm. arc, burning 150 amps, trained on to this from a fairly high angle. The overhanging eaves made a natural shadow which caused a lot of contrast. Having got my key-point, or brightest section, the next job was to light the next bit of set, blending the light with that of the barn. This I did with a 700 mm. arc.

This business of blending is very simple. Every lit portion of the set must have a source of light and every light source must cause a shadow.

Now "blending" is the name given to the business of lighting a set evenly from two or more light sources, with only one shadow. Blending on a set with a fairly broken-up surface is simple, as one can arrange for the junction of the light to be at the angle of a wall or along some ivy, and if nothing is there then it is easy to have the property master place a tree so as to cover the overlap.

The next step was to light the farmhouse. I had the 1000 mm. arc 300 amps lit. This illuminated the whole house with a single lamp, which was what I wanted, but I found out that the difference of intensity between the near wall and the wall with the door was too great, so I increased the lighting of the door portion with one of my emergency 700's from the side rail.

I lit the pigstyes with a ground glass 700 from the centre rail and then continued lighting round to the right-hand side of the set with soft 700's, as this side is the shadow side of the set. All this time I picked out various parts of the set with 3 kos., such as the wall, chimney stack, tree, and so on. From the front rail above the camera I had two 700's with ground glass in to flood the set, and along the camera limits I placed a row of 1500 flood lamps, silk-screened to give a soft, even light.

On the scenic backing I put more silk-screened banks of light to give an even flood of light. From the back rail I put three 700's to flood the set with back light to make the actors stand out.

When I had lit the set and blended the lights I checked them over through my camera and was satisfied, so I told Mr. Lee to carry on and rehearse his action.

There is one thing I must tell you about set lighting before I go on to the next part.

When going on to a fresh set one usually starts with a long shot. Now one might light a set most naturally and run into a lot of trouble when doing mid-shots and close-
ups. Let us imagine a quadrangle of white plaster and the sun shining.

**Mid and Long Shots**

When the set is lit, two sides could be bright and the third dark. It is lit very nicely and evenly—not one part brighter than another in the sun-lit parts. In the long-shots this would look fine and natural; one could even have—as we call them in studio talk—"jingle berries," or more usually, foreground pieces.

In the long-shot we have light and shade, composition, and plenty of forethought.

A long-shot is the result of plenty of work, and therefore should be as the cameraman wishes.

Now here comes the snag—a mid-shot, a shot against the sun-lit wall or even against the shadow side wall.

In both cases we have a shot with a back-ground that is flat and even and most uninteresting. You cannot put shadows there because of continuity of lighting—a very important point, as important as continuity of clothes.

In my opinion, the mid-shot is the shot most used in motion pictures, and consequently the sets should be lit with this in mind.

Therefore, I make on my walls false shadows—areas of brightness—areas of dazzling brilliance—bits of dead black, all mingled and jostled together. Remember the white barn—it will be impossible to take mid-shots against that if it was of an even brilliance; as it was, there was the maximum of contrast which broke up the background.

I have an illustration in mind—compare Greta Garbo with the finest diamond in the world. That diamond looks very nice against a velvet background or against silk—but put that diamond in a fine setting—a crown—or in a nice ring upon a pretty finger and its looks are enormously enhanced.

That is why Greta Garbo is always seen in the finest sets and photographed by the world's best cameramen.

In fact, the jewel in the setting. You may think this highly irreverent, but I cannot stress too much the importance of set lighting and that of the type that gives a great variety of background.

It is permissible to let the long-shots go—they are only seen once—and concentrate on your mid-shot lighting.

After all, the long-shot is mainly a question of composition—not lighting.

Now to return to our farmyard. The actors are rehearsed, they know their lines; they act to Mr. Lee's satisfaction and my operator has given them places to start from and come to.

Now I come along and light the actors in their various positions.

**Reality and the Leading Lady**

Here we are up against a famous problem, reality versus the leading lady's face.

In reality we should light from the same direction that the highlights on the set come from; we can do that, of course, if we have a perfect face—it makes the job much easier.

I am always prepared to discard reality lighting on artists, if necessary.

After all, people go to cinema to see their favourite actress with her well-known face, not to see a lot of mathematically correct lighting.

Will you please remember the white barn again. The lighting obviously came from high up on the right. Suppose two actors enter the picture and look left; if you carry out the lighting as it should be the light should come from somewhere between 45° right of the camera and over the camera. At 45° it would make a bad shadow from the cheek upon the nose; over the camera it would flatten them out.

I would place the light so that it was directly above the spot where they were looking; this would render the faces nearest to the camera dark, or, in other words, give roundness. Coming from the right at three-quarters back I would put a spot to outline the hair and back of the neck. This back light would be brighter than the face light and so carry out the illusion that the right-hand side is brightest after all.

I will now give you a rule which is, as most rules are, a safety-first measure, which with very few exceptions won't let you down.

When photographing faces put the main face light as high as is possible over the direction in which the artist is looking.

If the artist looks right or left the side near the camera will be dark—the face will be round.

If the artist looks at the camera, place the light over the camera; this will fill in those unpleasant rings under the eyes and at the same time give plenty of modelling from the nose and lip and cheek-bone shadows.

The height of the lamp is determined by two things: (a) the nose shadow which looks most unpleasant if it comes over the mouth when the artist is talking, and (b) the overhang of the eyebrows over the eyes. Eyes look very bad when half-shaded off. It is these prominent eyebrows that determine 75 per cent. of the height of the lamps. Whatever is the position of your main face light you must have, at the angle of reflection from that lamp, another lamp to fill up the shadows caused by that high lamp.

If the high-light is 45 per cent. left, the other lamp must be at 45 per cent. low on the right.

In a case like this I often put a lamp heavily silk-screened under the camera as a catch-light for the eyes.

Working on this principle, my method is as follows: I light the sets, making the lighting as broken up as possible, then I turn out those lights and put on my main face light; this I get to satisfaction as regards height, angle, etc.

Then I measure the intensity of that light with a Weston foot-candle meter. I stand where the artist stood and the light falls on my meter. I have the lamp spotted or flooded until the instrument reads a predetermined figure. As I am a strong believer in "Gamma control," I always have one light of the same intensity. This light is normally the face light, and consequently my faces always render the same negative density. The differences in make-up and skin texture give all the variations necessary.

Having got my required light intensity I place my artist in position and turn on my shadow light; this I increase or decrease by personal judgment until I get my required balance of light. In night scenes I reduce this light to a minimum, and in day shots to about half the intensity of my main light.

I then pick out various parts of the artist with three-quarters back light—the hair, shoulders, dress, and so on.

When these three essentials—main, shadow and back lights—are satisfactory, I switch on my set lights and balance them, by my personal judgment, against the artist.

I might remove one or soften one off, the main idea

(Continued at foot of page 62)
PRECISION EQUIPMENT.

STEEL CUTTING TABLE

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Increase in Technical Facilities for British Film Production

Pinewood Studios at Iver Heath, Buckinghamshire, were officially opened on September 30th, 1936. These studios are designed on the unit principle, each unit consisting of eight stages. It is understood that in the future two units will be built, making a total of sixteen stages, but on the opening date only five stages of the first unit had been completed, consisting of three large stages having dimensions of 110 feet by 165 feet by 40 feet high, and one stage divided into two small stages 110 feet by 83 feet by 40 feet high. Constructed on a steel framework, with solid concrete walls eleven inches thick, these stages show that careful consideration was given to the various requirements of production. Internally, the walls and ceilings are sound-proofed with slag-wool. All approaches to the stages are under cover, an obvious necessity when one considers the inclement weather prevalent in this country, and covered ways are also provided between the workshops and the stages. Further, a covered space of about 15,000 square feet in area is located in the centre of the unit. Lighting equipment consists of large numbers of both tungsten and arc lights, principally supplied by R. R. Beard, Ltd., and Mole-Richardson. For sound recording, the Western Electric variable density system is used.

Additions to Existing Studios

During 1936 several English studios engaged in extensive additions to their premises.

With the additions completed during the year, Sound City Studios, Shepperton, Middlesex, now has seven sound stages, totalling 80,000 square feet of floor space. Built on the unit system, each stage has its own dressing rooms.

Studio Lighting

(continued from page 60)

being not to have the same negative density on the set as on the artist; it can either be greater or lower. I know that my artist is rendering a constant negative density to within a very fine degree, so providing the laboratory is up to the scratch in its sensitometric control, all is well.

To those of you who are in the studio business this does work out in practice. On a picture which I have just had trade-shown there was a variation of only three printer points in the whole picture.

There is one very pleasant thing about making pictures that I would like to mention.

During the shooting of the farmyard the animals created a lot of dust. It rather worried me in case the rays of the lamps should pick-up.

When we saw the 'rushes,' this dust softened down the distance and gave that delightful hazy appearance that one so often sees. I was very pleased and when asked afterwards how I got the haze, I replied that it was a very old trick. It was luck.

Discussion

In reply to a question on photographic backings, Mr. Langley said: A print of any given ‘still’ subject is approved by cameraman and director.

The art department tells the photographic backing department what size that print has to be enlarged to.

The backing department takes the negative and subdivides it into a number of equal parts dependent upon the width of the sensitive paper and the width of the enlargement.

Assuming a 10-in. by 8-in. negative to be enlarged to 30-ft. by 20-ft.

A roll of sensitised paper is of unlimited length and, say, 3-ft. wide.

The operator would divide his negative into 10 equal vertical strips and enlarge on to the paper, one portion at a time.

The paper strips of 20-ft. by 3-ft. are developed in a weak developing solution in order to reduce developing errors and when finished are pasted on to a wooden frame 20-ft. by 30-ft. covered with hessian (a kind of sack material).

As the paste dries the shrinkage draws the hessian drum-tight.

This photographic background is flooded with an even light and when photographed a little out of focus (focus being on the actors) is most realistic.

Asked about back projection, the lecturer said: Back projection is the name given to a diapositive when the subject is a kinematograph print.

The screen is of some translucent material, either of ground glass, paper or mott celluloid.

At the moment matt celluloid is the favourite method. Back projection screens are made in many sizes, the usual one being about 20-ft. by 15-ft.

The motor which drives the projector and the one which drives the camera must be interlocked by some electrical means in order that when the shutter of the camera is open the projector shutter is likewise and vice versa. I use a Vinten camera more often than any other—all the cameras are equipped with Cooke lenses. I shoot at f 2 in order to get the maximum exposure within practical limits.

This means that I use the minimum of light, and naturally the fewer numbers of light sources the better the personal control.

I use a Weston foot candle meter with which I measure the intensity of my key lights.

I point this at the lights from the positions of the actors and read from the camera to the actors.

I prefer a ground glass screen over the lamps to silk or butter muslin, because the glass was constant; it was not affected by heat and did not become yellow, as butter muslin did.
production offices, property rooms and many of the necessary accessory departments. In a separate block are contained twenty cutting rooms and three theatres. Standard sound equipment for these studios are the R.C.A. ultra-violet and the Visatone sound systems. A powerhouse generating 17,000 amperes provides power for the stages. It is understood that during 1936 Sound City Studios serviced over twenty per cent. of the total number of feature films produced in this country.

At the end of 1936 the Rock Studios at Boreham Wood, Elstree, had completed two new stages, part of a development scheme which will eventually total seven completely equipped sound stages. The new stage No. 1, with dimensions of 117 feet long by 80 feet wide, is typical of the constructional methods which have and will be used throughout. It is of steel frame design with brickwork panels, the roof and walls being treated with slag-wool. The floors are of concrete, faced with boarding nailed to fillets in the sub-floor. R.C.A. ultra-violet and Visatone recording systems are used, the arrangement of these installations having been prepared in such a way that each sound unit can be quickly patched through to any recording or re-recording stage, thus reducing the time of change-over from one stage to another to an absolute minimum. A large powerhouse is provided, containing three generators, two of 750 kws. and one of 500 kws.

The Warner Bros. First National Studios at Teddington, Middlesex, made extensive additions and alterations during the past year. The old studio, which has been in use for five years, has been modernised, and an entirely new sound stage has been built. This new stage measures 133 feet long by 100 feet wide, and is of brick construction, the inside walls being covered with rock-wool for sound absorption. The Western Electric sound system is used. A new powerhouse provides current for the stages. These studios do not possess a very large acreage, and a considerable amount of ingenuity has been expended in making use of every inch of available space. In the case of the new sound stage, for instance, one entrance has been fitted with revolving doors and hall so that it can easily be made to resemble an hotel. Another example is a set of windows looking on to a pavement, which can readily be turned into a big store. Constructed at the same time as the new stage was a block of executive offices of excellent appearance.

**Studios in Course of Erection**

Under construction during 1936, the Amalgamated Studios at Elstree will consist of four large stages, three of which can each be split into two stages. Dimensions of the large stages are 200 feet by 100 feet by 35 feet high. Two large and four small projection theatres will be provided, as well as all the other accessory departments. Western Electric sound-recording equipment will be installed. Of pleasing appearance and of efficient design, Amalgamated Studios will be a notable addition to the growing number of fine Motion Picture Studios in this country.

At the end of 1936 there were about twenty-five studios, totalling in all over seventy stages, available for production in this country, all situated in or near the London area. Some of these studios possess excellent technical facilities, and although others are not so completely equipped it would certainly seem that the number of studios is ample for the present requirements of British production.

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Cinema Log

An Apology to Highbury Studios

Our deepest regrets are extended to the Highbury Studios for any misconception of the report in our last issue re Tudor Films. The situation is as follows:—Tudor Films have a contract to make six pictures for A.B.F.D. release at the Highbury Studios, the first of which—"Intimate Relations"—having been completed, of course they go back to carry on as soon as they have finished their first picture for British Lion release, which, in accordance with their British Lion contract, was produced at Beaconsfield Studios. So you see, Tudor Films are producing in two studios—good work!

Talking of Highbury, it is a well-known trade fact that the conditions there are most happy from the point of view of rapid work, good staff, commercial terms and splendid relations between studio owner and tenant.

A New "Long Tom"

British Lens makers have excelled themselves in preparing for the Coronation. Taylor Hobson's Telephoto lens of 56 inch focus, built for Pathé, and mounted by Vinten, is the longest ever used by Newsreel cinematographers. Working at f.8 the lens itself measures 4' long and is 8" in diameter and will secure a close-up, head and shoulders, at 250 feet and a full-length figure at 750 feet. When testing the lens and mounting, a picture of the television tower at Alexandra Palace was photographed from Criclewood, 6 miles away. The camera and lens are 100', British workmanship and give rock steady results. The lens was used on the Victoria Memorial to secure the Balcony scenes at Buckingham palace.

Another fine piece of lens manufacture is the f/1.3 56 mm. lens used in the Abbey. This is also a Cooke. I have used this in securing flood lighting pictures; turning at 24 frames it gave very fine results and good covering at open aperture.

Hammersmith Studios

Riverside Studios have been purchased by a well-known British Producer, and although he wishes to remain anonymous at the moment, he assures me that they will be run on full Trade Union conditions. He is now lining up product and the "Boys" should be turning them out again in a short time.

Co-operation with the Royal Photographic Society

Closer co-operation between the R.P.S. and A.C.T. on technical and professional matters will follow recent joint meetings between representatives of the two organisations. Mr. Desmond Dickinson will represent the Association on a Special Technical Committee which is being set up to act upon similar lines to the American S.M.P.E. Mr. T. S. Lyndon-Haynes, A.R.P.S., will serve on the committee of the R.P.S. Kine Section, while Mr. L. Cave-Chinn and Mr. J. Collingham have been appointed the Association's delegates to the Central Association of Photographic Societies.

New A.C.T. members of the Royal Photographic Society include John M. Fennell, Derrick Mandel and Jeff Seaholme.

By KENNETH GORDON

Professor Einstein Finds Solution of True Colour Film

The "Paris-Soir" has published a sensational article on the recent work of the German Professor Einstein, now exiled in America, who claims an invention which will revolutionise film technique.

"The solid camera lenses will be replaced by hollow ones filled by a special liquid. This liquid will darken or brighten automatically according to the intensity of the exterior light. Thus, no further need for a diaphragm, and, therefore, no more error. Hence cameras fitted with such lenses would make possible the perfect reproduction of natural colours in film."

Experiment with Films in a Church Service

We are informed by the Cinema Christian Council, of which the Archbishop of Canterbury is the President, that success has attended an experiment, conducted this winter, with a new type of religious service (Evening Prayer with films), in a Parish faced with the addition of a population of some 5000 people in an L.C.C. slum-clearance housing estate. In spite of persistent visiting, the normal services failed to attract more than a very small percentage of these newcomers. It was, therefore, decided to try a monthly "Film Service," and a satisfactory technique has been evolved for a reverent and dignified use of the film in connection with Evening Prayer. A normal evening congregation of 100-120 was increased to over 400 for some of the "Film Services," and even on wet evenings never fell below 300. Films shown were—"Palestine," "Livingstone," "Inasmuch," "On the Bethlehem Road," "Japan," and "Africa." It is hoped to use sound films next autumn.

At a Conference, convened by the Cinema Christian Council, the Bishop of Croydon, touching on the instructional possibilities of the week-day cinema, said that at Croydon the showing of films on Sunday evenings, under a scheme which had worked well and had included educational films that would not otherwise have appeared, had resulted in the showing of such better films on week-days also.

The Rev. C. E. Penrose told of the experiments he had made in order to attract the children from the back streets. In fourteen months at Walthamstow there had been 32,000 attendances by children in a circuit of six churches.

Britain's First Rail Excursion to Studio

Britain's first rail Excursion to Filmland was run by the Great Western Railway, from Bristol to Slough, for the Pinewood Studios on Wednesday, April 28th.

The Great Western Railway were the first to introduce Educational Excursions in this Country—in October, 1927, when the first excursion was run to its Swindon Works. Since then more than a million passengers have been carried on similar excursions to "see Britain at Work" in chocolate, motor, soap and porcelain, works, biscuit factories and also to liners at ports; sites of historic interest and to Windsor Castle. The film excursion marks a further extension of this innovation.
BRITISH STUDIOS

1937

The ASSOCIATION OF CINE-TECHNICIANS

GEORGE H. ELVIN, SECRETARY. 30 PICCADILLY MANSIONS, 17 SHAFTESBURY AVENUE, LONDON. W.1
Details of New Western Electric Mirrophonic Equipment

Sound Heads

Two new sound heads of an entirely different design to the I-A sound unit fitted on the Universal Base, and the 206 Reproducer set, are available. These new sound heads, the 211 type and the TA-7400, do not employ constant speed sprockets of the 707 type, but depend on a kinetic scanner for pulling the film at a uniform speed past the scanning light. The kinetic scanner is an inertia controlled drum maintained at constant speed by means of a special double flywheel. The drum is mounted on ball bearings so as to reduce friction to a minimum. The double flywheel incorporates a mechanical filter, which suppresses any oscillation that might be transmitted to the scanning drum by the uneven passage of the film.

On the 211 sound head, the lens tube focuses the image of the exciting lamp filament on the sound track, thereby dispensing with the usual mechanical slit. The Photo-electric Cell compartment on the 211 type is located on the door of the sound head compartment. No P.E.C. amplifier is employed on either the 211 or TA-7400 sound heads, the output from the photo-electric cell being taken to the main amplifier via an output transformer mounted in the sound head and a combined volume control and change over control cabinet.

On the TA-7400 Sound Head the optical system is different from that employed on the 211 type. This system is termed the "Optical Bridge." It differs from the usual scanning methods, inasmuch as the beam of light from the exciting lamp is applied to the film on the celluloid side of the film. A microscope is focussed on to the sound track on the emulsion side of the film, which magnifies the image on the track and projects this on to a large masking slit and collimating lens, which in turn focusses the light passing through the slit on to the photo-electric cell. This method of scanning results in low ground noises and a greater efficiency at high frequencies. These new sound heads are driven by 110 volt, 50 cycle motors.

Amplifiers

A new range of amplifiers of advanced design are used on Mirrophonic systems. These amplifiers—types 86, 87 and 91—are all A.C. operated, and in addition to an excellent frequency characteristic and high degree of reliability which have come to be taken for granted in Western electric amplifiers, there is employed the important new device termed a "Harmonic Suppressor" (described in the previous issue of the Journal). All parts of the circuits in the new amplifiers requiring adjustments can be checked by means of a selector switch associated with a "Percentage Meter," that is a meter graduated to read percentages of the normal or correct value, which is taken as 100%. All that the operator need do when checking valves is to turn the selector switch to whichever valve he requires to test and read the percentage meter, which should show a reading of 100% for a valve with satisfactory emission.

The 91-A amplifier is used on the smaller Mirrophonic systems. It has a gain of 92 db, and an output of 8 watts. Contrary to usual Western Electric practice, this amplifier does not employ a push-pull final stage. The amplifier has three stages, resistance capacity coupled, the first two valves are 310-A pentodes and the last stage a 300-A. The 300-A valve is a new valve of improved efficiency. It has an oxide-coated filament rated at 5 volts, 1 1/2 amps. The operating plate voltage is 325 volts, and current 60 millamps. At this rating the valve is capable of delivering 8 watts speech output. It is of interest to compare the 300-A with the 242-A type now used in 43-A amplifiers.

Although the 91-A amplifier only employs one 300-A valve in the output stage, the harmonic content of the audio output is negligible. This is accomplished by employing reverse feedback in the amplifier. Compensation is also made in the amplifier for higher frequency scanning losses.

The 86 type amplifier is used on intermediate size Mirrophonic systems. This amplifier has four stages, the first three employ 262-A valves resistance capacity coupled, and the output stage is push-pull, utilizing two 300-A valves. The output of the 86 amplifier is 15 watts, the gain of the amplifier being 98 db.

The gain frequency characteristic of the 86 amplifier is flat from 50 to 12,000 cycles. The amplifier has its own power supply built in.

The 91- and 86-type amplifiers differ in appearance from the series of 40-type Western Electric amplifiers. They are built on shallow chassis and the complete units are housed in strong metal cabinets.

The 87 amplifier is a high-power, single-stage, push-pull amplifier and is used with an 86-type amplifier in large theatres. It has a gain of 10 db, and an output of 50 watts. If more than 50 watts output are required, additional 87 amplifiers can be added in parallel.

Two 284-D valves are used in this amplifier and the plate voltage is supplied by a built-in rectifier, which has two half-wave rectifiers. The rectifier valves are 249-B high voltage mercury type valves.

These three amplifiers are designed to operate from an A.C. supply of 105-115 volts, 50 or 60 cycles.

Horn System

The Di-phonics loud-speaker low frequency unit can consist of from one to four cone units according to the size of system, mounted at the base of a shallow cavity, which is in turn surrounded by a very rigid baffle. In the cavity there are fitted "deflectors," which improve the frequency response of the whole unit and also result in a better distribution of the higher frequencies radiated by this unit. The cellular horn which reproduces the frequency range above 300 cycles is composed of a number of separate horns of approximately the same exponential rate of taper. The wide ends or "mouths" of these horns are all joined together to form a large common mouth which has a cellular appearance. The narrow ends of the horns are brought together to form a common throat. Either one or two dynamic units of an improved type can be fitted to the throat according to the size of the horn and the auditorium to be covered.
The new dynamic unit, termed the 594-A receiver, is capable of handling a greater volume of sound than any previous units employed. It also has a superior frequency characteristic, especially in the high-frequency register.

The principal limitations of present theatre loud-speaker arrangements is poor directional characteristics. The conventional type of tapered horn projects sound through a relatively large area at the lower frequencies, but as the frequency range is increased the distribution suffers, and at high frequencies the sound becomes concentrated into a narrow beam. The result is that it is not possible to obtain a satisfactory balance between the high and low frequencies at the sides of an auditorium, through the falling-off of the high frequencies, and the reproduction becomes "boomy." The culiflar horn used in the Di-phonic loud-speaker combination successfully overcomes this trouble. The sound from the dynamic unit travels down the common "throat" of the speaker and then divides into the separate channels formed by the individual horns which form the cellular horn.

The result of the dividing up of the sound amongst a number of small horns in this manner is that the sound does not become concentrated into a narrow beam along the axis of the main horn at high frequencies, but is evenly distributed in a wide beam which covers the auditorium evenly.

Both the dynamic units on the cellular horn and the low frequency speaker have energised fields. These fields, each of which are rated at 24 volts, 1 amp., are supplied with power from a rectifier power unit employing Tungar bulbs. The speech input to the speaker system is distributed to the high and low frequency speakers by means of a dividing network, which introduces attenuation of approximately 12 db. per octave above and below the cross-over frequency of 300 cycles. The network is built into a unit which is separate from the main amplifier. This unit also includes a receiver testing panel which enables the operator to test the units on the cellular horn and low frequency unit. The design of the Di-phonic loud-speaker system is such that it takes up very little space backstage and can be arranged in such a manner that it can either be flown or mounted on a framework on castors, so that it can be moved off stage to enable the stage to be used for other presentations.

Don't Sign in a Hurry!

The attention of the General Council has been drawn to one or two members who have signed long-term contracts for a junior job which also bind them to doing a higher grade job, if required, at the same junior salary. The Council wishes to emphasise the undesirability of this, and to remind members that not merely their own interest but their responsibility to the other members of the Association demands a refusal on their part of such terms if offered. The General Council asks all members to acquaint themselves with the Association’s minimums for their particular grades. If you are in any doubt about the terms of your contract don’t sign in a hurry but consult the Secretary or the Organiser.

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A.C.T.'s Fourth Annual Report

First Studio Agreement with Technicians

Negotiations in the first agreement in respect of film technicians in a British studio were successfully concluded on December 10th, when the Association and Gaumont-British Picture Corporation Ltd. signed an agreement in respect of salary rates and working conditions for members of the Association employed at the Corporation's studios at Shepherds Bush. The signature follows long negotiations, and is not the Standard Agreement, discussions having commenced long before its preparation. The Agreement covers minimum salary rates and regulations with reference to late work, location work, travelling expenses, termination of employment, holidays, sickness, assignment of services, etc.

Agreement has also been reached with the Associated Realist Film Producers Ltd. and Strand Films Ltd. in respect of minimum salaries and working conditions of their employees, who are engaged in the documentary field.

Employment Bureau

The A.C.T. Employment Bureau has served a two-fold purpose. Firstly, it has become generally recognised by the industry and during the year 711 studios, production companies and laboratories contacted 671 technicians through this medium. Secondly, the Bureau has served as a barometer of trade. Statistics as to numbers and personnel unemployed have been invaluable in propaganda, particularly concerning the employment of foreign technicians in the British film industry.

Foreign Technicians

Two deputations have been received by the Ministry of Labour, each of which has stressed strongly the Association's policy concerning the employment of foreign technicians and brought to the notice of the authorities specific cases where there appeared to be no possible justification for the employment of foreign labour.

The serious position of the British film industry which developed towards the end of the year has made this question of even greater importance. The great slackening-off of production with the resultant heavy unemployment must lead to a necessary review of the position of foreign technicians holding labour permits to work in the British film industry. The main factor influencing the granting of permits has been that no British technician of equal talent was available. This no longer holds good. Over 30 per cent. of the qualified British technicians—most of them of long experience and undoubted repute—are to-day unable to find employment in the British film industry. The conditions under which the permits to foreign technicians were granted has entirely changed. A.C.T., therefore, strongly urged that the changed conditions must result in a changed policy, and we are glad to report that this view point has been reflected in permits refused and renewals not granted by the Ministry of Labour, resulting in employment of British technicians for the posts concerned.
Legal Advice and Assistance

Many members have taken advantage of the legal department and as a result it has been possible to recover in many cases sums due in respect of broken contracts and monies generally owing to members in respect of their employment. Advice has been given on individual contracts and in cases where alteration of terms of employment might lead to a breach of contract.

It should be emphasised, however, that the Association should be consulted immediately there are difficulties, as instant action may save considerable delay subsequently, and will generally aid speedy settlement of any disputes which may arise.

Manor House Hospital

It is regretted that only 44 members have taken advantage of membership of Manor House Hospital, which may be obtained by payment of one penny per week subscription. Payment of this small sum regularly entitles members to free treatment in respect of accident or illness, and treatment at reduced charges for optical and dental treatment. Those who have taken advantage of these facilities speak very highly of the treatment received. Every member is urged in his own interests to take up membership of Manor House Hospital, which he is entitled to do by reason of their membership of A.C.T.

The Quota Act

Mr. S. H. Cole, Mr. Desmond Dickinson and the Secretary gave evidence on behalf of A.C.T., before the Board of Trade Committee appointed, under the chairmanship of Lord Moyne, to enquire into the future of British films, having in mind the approaching expiry of the Cinematograph Films Act, 1927. The Association's evidence has now been published together with the findings of the Committee and it is pleasing to report that many of A.C.T.'s recommendations have been incorporated in the Committee's report. The leading organisations in the film industry—production, renting, exhibiting and labour—have subsequently prepared and submitted to the Board of Trade comments on the Committee's Report. The support of Members of Parliament is being sought in order to look after the interests of the Association in the formulation of any Act which may be forthcoming.

"The Cine-Technician"

Two volumes of the Journal have now been published. A pleasing feature has been increased circulation, particularly abroad, and letters of appreciation have been received from Hollywood, India and the Continent. Advertisers have also received enquiries from film producing companies in Asia and Europe.

Technical Activities

The General Council has continued to do everything within its power to advance the technical ability of its members in the belief that the film industry can only develop alongside the increased technical knowledge of its members. A Technical Research Committee has been formed and is responsible for preparation of Technical Abstracts, being a précis of all important technical developments, details of which are obtained from the various film technical publications of this country and abroad, and from such other sources as may be available from time to time. At first the Abstracts were issued free to members, monthly, as a separate publication, but in order to facilitate their retention as a more permanent record by members, they are now incorporated as a special feature of the Journal.

A Reading Room and Library is now available to members at the Association's offices, where the British and foreign trade and technical press and year-books may be consulted and where recent technical publications may be borrowed.

The Association was represented by Mr. Desmond Dickinson and the Secretary at a Conference on May 22nd, convened by the British Standards Institution, to discuss standardisation in the Motion Picture Industry.

The Association has maintained friendly co-operation with the Royal Photographic Society, with whom joint meetings are being held to discuss the possibility of co-operation on technical and professional matters. As in previous years, A.C.T. has co-operated in the organisation of the Kiné-Exhibition by supplying production and other stills, and arranging an evening's lecture programme.

The usual series of lectures and film shows have been held, and have been fully reported in the Journal.

Kindred Organisations

In spite of several approaches by the Association, agreements with specific reference to demarcation have not yet been reached with the Electrical Trades Union and the National Association of Theatrical Employees, which factor has delayed a decision by the Trades Union Congress with reference to the Association’s application for affiliation, made after its third annual meeting in May, 1936.

Following upon a meeting between representatives of the Trades Union Congress, the N.A.T.E. and the A.C.T., it is reported, however, that joint meetings have now been held with the N.A.T.E. and negotiations for an inter-union agreement are now well advanced.

Friendly contact has been maintained with kindred trade unions abroad, particularly in America and France. The newsreel section has affiliated to the Union Internationale de la Presse Cinématographique, a newly formed federation to safeguard the professional interests of all persons engaged in newsreel work. Other countries to signify their support include Austria, Belgium, France, Germany, Holland, Italy, Poland, Greece and Palestine.

The formation of the British Press Photographers' Association is welcomed. Close contact has been established between this new organisation representing the news press photographers and our own newsreel section.

Publicity

There have been over 300 references to the Association in the press, not only in the trade press, at home and abroad, but also in the lay press. In the latter connection, considerable publicity was given to A.C.T.’s Qonota Act evidence, particularly the attention drawn to the injury done to British technical work through the cutting of films after production; the Association’s comments on Lord Tyrrell’s statements to the C.E.A. Conference on censorship; foreign technicians; and labour conditions generally in the industry.

Finance

The financial position has maintained the progress of last year. The excess of assets over liabilities at the end of the year was £200 compared with £60 for the previous year. The main reason for the improvement is, of course, 

(Continued at foot of next page)
Ars Gratia Artis

On Friday, May 8th, 1931, Sir Arthur Crosfield, President of The Faculty of Arts, presented, on behalf of The Faculty of Cinema Art, the society's gold medal for the best film of 1930 to Carl Laemmle for his production of "All Quiet on the Western Front." Mr. James Bryson received the medal on behalf of The Universal Pictures Corporation, and novelty was introduced into the occasion by a speech of acceptance made over the transatlantic telephone by Carl Laemmle himself, who said, "Let me say that your award is an inspiration, not only to my own company, but to moving picture producers throughout the world, and from this inspiration I feel that you have done much to bring the industry to an even higher standard than it possesses already. Rest assured that we are not content to rest on our laurels."

The Derbysire Advertiser was not so sure about this. It said: "There are, of course, films of considerable artistic merit, and films which, without any pretension to Art, have won enduring fame by their epic qualities alone. But to expect an enterprise which flourishes on its popularity with a class which is essentially unartistic to maintain these standards is to expect too much!" Time has proved The Derbysire Advertiser to have been unduly pessimistic.

In the following year a similar award was made to Pabst for his remarkable mining epic called "Kameradschaft," and it might be thought that since then the number of outstandingly artistic films has been so great that encouragement of this kind is no longer a necessity. However, it is unfortunately true that such films are still the exception rather than the rule. It would, of course, be futile to expect an industry which has to cater for the entertainment of every class of mind to produce nothing but artistic masterpieces. Nevertheless, it is not unfair to say, in view of the extraordinary popularity and long runs evidenced by some outstandingly artistic films, that the industry as a whole appears to underestimate the artistic judgment of its public. The Faculty intends to offer further encouragement in the form of similar awards in the future; and at the same time, by extending its scheme of affiliation, to embrace a number of societies connected with the film profession and industry, will endeavour to stimulate a healthy spirit of self-criticism and creative urge in all those connected with the Film.

The Society has embarked on a series of presentations of "Masterpieces of the Silent Screen." Three of these have already been shown—"Waxworks," "Warning Shadows," and "General Line"—and will be followed by further examples such as "Mother," "Potemkin," and "The Crazy Ray." Most of the younger members of the profession have probably never seen these early masterpieces; and The Faculty of Cinema Art is out to remedy this by inviting to its presentations representative audiences of producers and technicians. A further project, which will be of very special interest to present-day technicians, is a series of showings of such interesting relics as "The Great Train Robbery," "A Trip to the Moon," and an early composite newreel of items filmed between 1900 and 1905.

The Society seeks to prove that the tenets of Art and commercial success are not always incompatible; it remains to be seen whether their efforts to foster the improvement of the Film as an Art, will convince the Industry as a whole. There is still a considerable and influential section of opinion which is by no means accepting the screen as the desirable medium for entertainment and education that it should be. This section of the community, containing as it does leaders of many branches of thought, and particularly that profession which goes so far to mould the thoughts of many millions of our younger generation, is asking for a higher standard of artistic merit before it, too, adds its considerable regular patronage to the Industry.

R. E. Bamford.

Correspondence

Appreciation of A.C.T. Production Unit

Dear Sirs,

"THE HIGH COMMAND"

In view of the favourable impression made by this picture at its recent Trade-showing, and especially with reference to its technical and production qualities, I am sure it will interest you to know that the production unit was composed mostly of A.C.T. men.*

This, of course, includes Mr. Thorold Dickinson, whose first directorial achievement promises a distinguished future.

A spirit of cheerful and efficient co-operation was very evident on the making of this picture and went far towards the final result.

Yours very truly,

Fanfare Pictures, Ltd.,

Gordon Wellesley,
Producer.

* A.C.T. members employed included the following: Director, Chief Cameraman and crew, Editor and assistants, Sound Recordist and crew, and Art Director.—Editor.
Lab Topics

I'd like to say a lot about studios remaining idle, hundreds being thrown out of work, quota w(t)angling, etc., but my job is lab topics. So far the trade and newsreel labs have not felt the draught: the newreels must go on and fortunately all American pictures are printed in this country, thanks to the tariff on imported prints.

The tale is different with the studio laboratories, but maybe soon there will be an awakening in the British film industry, then everything in the garden will be lovely. What we seem sorely to need is a leader, a man who would take the backing of the Government behind him and the interest of the British film industry at heart.

Economy in Stock

The following should be of general interest. It is taken from the Journal of the Society of Motion Picture Engineers, volume XXVII, No. 2, and is headed “Pre-selection versus the Split Film Method,” by H. G. Tasker of Universal Picture Corporation.

“At least one studio that has been using 17½ mm. film for sound recording has found it more economical to return to 35 mm. film and employ, instead, the pre-selection method, with the result that less processing is done, but much more film used. The 17½ mm. method consisted in recording along one edge of the 35 mm. film, then reversing the film in the magazines and recording along the opposite edge. The film was processed in the 35 mm. width, and then split before printing. The sound dailies were also on 17½ mm., and the resulting savings for an average large studio amounted to around 4,000 dollars a month. In practising this method all sound negative must be processed. In the pre-selection method the director designates O.K. takes and Hold takes, all others are marked N.G. All but the O.K. takes are broken out of the roll before processing. Since only one edge of the film has been recorded upon, the N.G. takes (and later the Hold takes) may be spliced together and the opposite edge used for printing sound dailies: thus effecting two economies, in that the N.G. negative is not processed and the daily print stock is obtained without cost. These economies alone amount to around 3,500 dollars a month for an average studio, and nearly offset the economies obtained by the 17½ mm. method. There remains, however, a reserve of 1 to 2 millions of feet of N.G. stock per year per studio. New ways of using this stock, including leaders, effects negative, effects positive, and even action dailies, have made the pre-selection method definitely more economical than the split-film method.”

“L.C.”

Who in the trade doesn’t know Leo Cass? If you happen to run against him don’t mention the day when Jim South sold him somebody else’s scarf for a couple of bob and parcelled it up nicely for his journey home. Leo was so pleased with his bargain that in the train the same night he undid the parcel to show a couple of pals what value he’d got for his money. Imagine his dismay and the chuckles of everyone else in the compartment when a dirty old towel came to light. There were ructions the following morning! Still Leo knows his hypo, when he sees it, and if you want any information about photographic chemicals or formulae he is your man.

Unbiased Technicalities

I’ve received the following heartfelt lament from Albert Dyas, lab. member ...

“I’m just a rather puzzled film printer who, although he works in a darkroom, has some bright ideas as to how this industry is carried on. Before I was a printer I worked in the chemical room. People from the sound and camera departments, who came in from time to time for quantities of developer and hypo., looked to me as though they were walking banks and seemed to have a new suit every week. One of them asked me for some developer. I said ‘Which kind?’ After much pondering he asked me if it mattered! I convinced another that perforation holes were invented for Friese-Greene by a Frenchman named Perforer. We used to have a photographic chemist for whom we made up developer. One day, there being no-one about, he decided to help himself— he took two lots of sulphite from two barrels that he thought must be carbonate and sulphite. Subsequently he asked us if our chemicals varied much, as his developer was behaving peculiarly!

I read an article some weeks ago about a film director who says he started at nothing a week (I wouldn’t like to tell you what my mother would say if I came home at the end of the week with this!). After six months he was an Assistant Director at £15 per week. Then he had the misfortune to meet with an accident. During convalescence he saved £1,000, and with financial assistance made a successful first film. He signed a contract and hopes to have £50,000 by the end of the year, since he says he only spends £10 per week. I seem to remember Alfred Hitchcock saying: After six years progressing in various departments I thought I was in the Director’s chair by proxy. There are many men in the industry who would be willing to study in order to get their break until their heads were missmphon with knowledge, but they have not had the good fortune, which often seems so essential in our industry, to start with financial equipment.”

Library Additions


“Journal” Cover

Our readers will have noticed in our last issue that we have changed the journal cover. It retains the essential character of the previous design, but makes it possible to see at a glance which issue it is and what are the main contents. The cover will be set in a different colour for each issue.

Both designs were the work of Joanna Macfadyen, A.R.I.B.A., A.A.Dip., wife of one of our members.
Recent Publications

Elephant Dance

Elephant Dance, by Frances Hubbard Flaherty. Faber and Faber, 12/6.

"It was almost too fairy-like for me to describe... By dawn and the light of the morning star we were rolling over the plains, and somehow the great thundering dawn above us and the great stretching plain before us and, dwarfed to the finest dry-point etching between them, ourselves on our fantastic beasts, and the delicate leaping buck, were like nothing but a Persian miniature painting out of a fairy story"—thus Mrs. Flaherty, in one of the many letters to her children which make up the bulk of this book, and which form an embroidery on, rather than a description of, the shooting of "Elephant Boy."

Occasionally Mrs. Flaherty's observational sense is directed to actual location events, notably in a circumstantial and vivid account of the shooting of the keddah, and her description of the illness of Kala Nag. For the rest, many people will enjoy her anecdotes, and her pen-portraits of the people and wild life of India; though at times a feeling of too-great intimacy, of reading other people's correspondence, may assail the more squeamish.

But there can be no doubt whatever as to the value of the superb illustrations, mostly from Mrs. Flaherty's camera. She has a master-hand, and the seventy odd photographs here reproduced reveal her as a fit partner to her husband's genius with a movie-camera. And why is the famous Jain statue shown only in parts, and not as a whole? True, it is naked, but there is no Board of Film Censors in the publishing trade, and it was a pity not to give some idea of its majestic size and perfect proportions.

Basil Wright.

Reviews of the following have been unavoidably held over until the next issue:—

The Romance of the Movies, by Leslie Wood.
Amateur Movies and How To Make Them, by Alex. Strasser.
Icy Hell, by Will E. Hudson, A.S.C.

Delegation to the U.S.S.R.

Thorold Dickinson and Alan Lawson have just returned from representing A.C.T. on a delegation to the U.S.S.R., as the guests of the All-Russian Film Trade Union. They made a special study of the film industry and a report will be published in our next issue. We are very grateful to our Russian colleagues for extending this invitation and trust that similar opportunities may be forthcoming from other countries.

Studio Guide

We draw readers' attention to the full-page Studio Guide elsewhere in the Journal. We feel this will be particularly useful to free-lance A.C.T. members. It is the work of Geoff Talbert, to whom we express many thanks.

Foreign Workers in British Industry

Report of the Ministry of Labour

The Ministry of Labour Report for 1936, just published (H.M. Stationery Office, 2 6 net), states that the demand for foreign workers was greater than in any previous year, the total number of applications being 18,072, as compared with 12,934 in 1935. Film technicians have had their full proportion of such increases, there being 50% more applications than in previous years.

It is, on the other hand, pleasing to report that many more permits than ever before have been refused to film technicians. The figures are given in two groups, (a) permits considered by the Ministry of Labour, (b) permits considered by the Home Office upon the advice of the Ministry of Labour in respect of persons of foreign nationality already in Great Britain. The following are the comparative figures for 1935 and 1936:—

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<td>Granted</td>
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<td>Group (b),</td>
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<td>Totals,</td>
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It is apparent that the sudden burst of activity in film production in the middle and towards the end of last year is responsible for the increase over the previous year. What is of importance to A.C.T. is that 44 permits were refused last year, as against 12 for the previous year. It is further no exaggeration to claim that the consistent pressure of the Association, both by deputations to the Ministry of Labour and press propaganda, is an important factor in this improvement. A further indication of the success of the Association's policy is shown in the reply by the Minister of Labour to questions recently asked in the House of Commons by Mr. R. Sorensen, M.P., when he stated that only five permits had been granted during January and February of 1937. (Most of these were in respect of a bilingual picture which employed certain additional foreign technicians for the French version). For a full statement of the Association's policy in respect of the employment of foreign technicians in the British film industry readers should refer to the correspondence between Mr. Chevalier and Mr. Elvin in the involuntary symposium "What's Wrong?" elsewhere in the Journal.

Summer Outing

A.C.T. has arranged a summer outing for members and friends for Sunday, July 18th. A steam launch has been hired for a day's trip up the Thames. The cost will be £6 per head, including lunch and tea. The capacity of the launch is limited and, although we have hired the largest one available, we fear, judging from previous experience of A.C.T. social activities, that the demand may exceed the supply. Tickets should therefore be purchased as soon as possible from the A.C.T. office or from studio, newsreel or laboratory representatives.
Panning Around the Globe

"How do, Unconscious?" Once more unto the breach beer friends! I come unto you with my eyes wide open . . . . and they need to be.

Pog Smarts Under An Injustice

I am cut to the quick by the Editorial Committee's action in cutting out my last 10 pages in the previous issue. They say "that owing to lack of space they regret the fact that they have excluded some of my copy." Friends! Believe you me, this is not the case. It's professional jealousy. I have set such an appalling standard they are afraid that they can't get enough articles written down to that level. So I appeal to you, my readers, as fair-minded citizens—"Fairminded" I said.

Pog Takes Unto Himself a Partner

May I introduce my co-partner—in other words, my illustrator. No expenses spared, no fortunes lost (as yet) . . . . Tuckets without (not tin trumpets)! Bells within! Crash! Bang! . . . . Enter my old and trusted friend "Pigswil." "The floor is yours: let us stoop together. No curbstone too low, no cracks too wise."

Pogram

Since everybody is composing alphabets, I have myself alone committed this one, all on my own free-will. (Editors, the crack is yours).

A is for Artists and they are united.
B is for Britain where the Natives are slighted.
C is for Crisis, it's now in the Trade.
D is for Denham where big films are made.
E is for Exchequer completely disabled.
F is for Facts of Film Finance, generally Fabled.
G is for Gold and Goldfish as well.
H is for Hollywood, Hades and Hell.
I for Insurance, just Companies pay.
J for the Junk that's turned out every day.
K is for Kudos that Korda did win.
L is for Lucky Lucie, the wages of sin.
M is for Money that's gone up the Spout.
N is for Nerds that don't cost you Nox.
O is for Organ that goes lower and higher.
P for Relief, thanks to Clapham and Dewey.
Q is for Quickies, from which they make Quota.
R is for Raspberries for Company Promoter.
S is for Super—a Guinea a day.
T for Technicians, who work without pay.
U is for Upstage Producers we know.
V is for Virgin and I o do-di-do.
W for Work, prospects none too cheery.
X for X, Unknown quantity of Foreigners—Query.
Y is for Yashmak and what does it cover?
Z is for Zounds, and thank God that's over.

World News by Pog

ENGLAND With this new Quality Campaign in sight, it is rumoured that in future any British Technicians who turns out bad work will have his birthright taken away and will then be deported as an undesirable alien . . . . so there yah!

ITALY Importing British Technicians, their own are too busy either in Africa or on non-intervention work.

Pog at Large

Did you hear of the cameraman who worked for nothing? Strange, neither did I!

In future at some of our leading studios, "money will not be used as a means of barter."

No Response to the Cry for more New Industries

Since my last issue I have been asked to carry on with my search for new industries. I tried my old way of taking a bath, but nothing came of it, except a couple of dead fish and a few odd bread crumbs. However, still un-daunted, I tried again but with no avail. I can't say how sorry I am about this serious breach of faith on my part. Even so, remember the old saying, "Genius will out." So have no fear, "the spirit will move me yet"—if it doesn't, something else will.

Pog Closes Down (Hoorah)

I must say that I think the tone of my page gets higher every time, soon it will be so high that you (that is you low underlings) will need a fire escape to read it* . . . . So long, Landanum! You'll be hearing from me in due course.

* Fortunately we don't possess a fire-escape.—Ed.
Technical Abstracts

A New Sound Recording Film

Kodak Limited has now made available in this country its new "1357" type Sound Recording Film, which has been especially designed to meet the present requirements of variable area recording systems and in particular the R.C.A. Ultra-Violet system.

The new sound film differs from the Kodak "Blue Label" Sound Recording material in two respects, for, while retaining the high resolving power of the Blue Label film, the new "1357" type film has considerably higher speed, coupled with a higher rate of development, both of which have been obtained without increasing the fog values above those obtained on the "Blue Label" stock.

In a direct comparison between the "Blue Label" and the "1357" film, it must not be assumed that the former is in any sense an inferior product. The "Blue Label" material is eminently suited to the conditions of variable density recording systems, where low gamma values are required, whereas the "1357" type, with its higher rate of development, is not designed to fulfil these particular requirements.

Under variable area recording conditions, however, the new type film presents certain advantages over the "Blue Label" film. At the present time it is felt that on certain sound systems the "Blue Label" film has not sufficient speed to produce the required track density value without resorting to over-development, with a consequent loss in quality, due to increased development fog.

The new "1357" type film is, however, fast enough to produce the required sound track density at a normal development time (within, say, a range of gamma values from 2/0 to 2:10), so that abnormal development fog is not produced.

—Kodak Report, No. 58.

Recording Improvements

Every improvement now available in sound technique has been used for the first time in "Maytime," a new Nelson Eddy and Jeanette MacDonald picture.

Among the features used are the new four-ribbon push-pull valve, new reproducer head, stabilised film movement and the Shearer multiple horn system, as well as the latest Western Electric sound. Studio press agents enthusiastically ballyhoo it as "all angle recording."

—International Photographer, April, 1937.

Francita-Realita Colour Process

This process is an additive system, employing three quarter-size images, taken by means of a beam-splitting system.

The film projected at Bush House was a record of the funeral of Marshal Lyautey, taken in Algiers.

While in topical subjects the perfection of studio work is not to be expected, the best of the shots showed a very high standard of colour. One shot which particularly impressed me showed a cream motor-car, with chromium fittings, and behind it natives in white costumes; the range of white and near-white shades was particularly good. Another excellent shot, a close-up of the cortège, showed to perfection the brilliant colouring of the uniforms and of the gold-tasselled flag draping the coffin, contrasting strongly with the glossy black of the horses. Definition was in most places surprisingly good.

The film was projected at the normal current of 30 amps.; although the screen width is actually just over 8 ft., the size of the projected picture was about 10 ft.

My only doubt is whether the level of illumination of the ordinary cinema will be sufficiently high to do justice to the colouring.

It was shown also a particularly interesting experiment—a subtractive print made from the same negative; the tiny separation images of the negative had been enlarged to full picture size, and coloured by a three-colour subtractive system, perfected in France.

This process is only in its experimental stages and the length shown demonstrated the use of different dyes. The best examples, while exceedingly good, were strangely different from the additive copy; colours were brighter, and definition was equal to the best we have seen—a fact which proves that any lack of definition attributable to the tiny images is not due to lack of resolving power of the negative, but exists either in the print or in the projection optical system.

—Kinematograph Weekly, 1/4 37.

Lighting Equipment Modernization

Within the past year and a half, an entirely new type of lamp, born and bred of film studio heritage, has come into wide use. An outstanding example is the "Solarspot," evolved by Mole-Richardson and engineered on radically new principles, with the specific problems of the cameraman in mind. Paramount feature of these lamps is the smooth distribution of light at all beam-spreads, especially when the beam is spread out to the degree most often used in studio lighting. Illumination is even from one edge of the beam to the other. There are no "hot spots" or shadows, and the beam may be flooded out to a spread twice the widest beam possible with a mirror-lamp. At the same time, when concentrated to a spot, the beam of a "Solarspot" is highly potent.

This is accomplished by a new type of lens, the "Morincor" Fresnel-type. It looks as though someone had tried to make a bull's-eye target out of a big disc of glass. Actually, it is half-a-dozen lenses rolled into one. Each of the circular "steps" has its own lenticular curvature, suiting it to just the work that part of the lens has to do. Behind this lens is the lamp-globe, and behind the globe is an efficient spherical (not parabolic) mirror, which picks up the light radiated by the rear side of the globe, and tosses it back to where the lens can pick it up and use it.

The new lamps are available in four sizes. First to make its bow was the Junior Solarspot, a 2000-watt unit that is supplanting the familiar 18-in. mirror lamp. Next came the Senior Solarspot, a 5000-watt unit. Available this month are two brand-new, smaller Solarspots—a 5000-watt "Baby Solarspot" and a 1000-watt intermediate size. It is claimed that these last two, competing directly with the familiar condenser-lens type spotlights, will outperform their opposite numbers two to one.

—International Photographer, April, 1937.
The Three-Film Camera

The first step in the perfecting of a satisfactory three-colour process of cinemagraphy must obviously be the production of three-colour-separation negatives, exposed to balanced portions of the spectrum, and each giving a well-defined image. These negatives are exposed respectively through red, blue and green filters, or their equivalents.

In order to avoid the light losses which would be inseparable from a three-way beam splitting system, a compromise has been adopted, employing two gates only, in one of which a bi-pack film is threaded. The negatives used are, first, a supersensitive Eastman Panchromatic film receiving the green image. The bi-pack consists, first, of a special Kodak film, sensitive to blue light, and registering the blue image; this carries on its rear face a red dye, which acts as a filter for the underlying film, which is again a supersensitive Kodak negative.

As shown in the diagram, the light from the lens is split by a sputtered gold face between two prisms; on the emergent faces of this prism are appropriate colour filters. That portion of the light transmitted by the gold sputtered face passes through a green filter to the single negative. Light reflected from it passes through a magnet filter to the bi-pack; this filter passes the blue light for the front film and red for the rear film, but prevents the registration of any part of the green component.

Camera Mechanism

The camera embodying this system is a really wonderful piece of mechanism. The three films are fed side by side from the triple-width magazine, over sprockets, whence the single film makes straight loops to its gate, while the bi-pack is twisted. The films return to the lower side of the same sprockets, and to the take-up portion of the magazine. The intermittent motions employed are of the Mitchell type, of course, with locking pins; it is unnecessary to stress the high precision needed to register the three negatives with sufficient accuracy.

Notwithstanding its triplication of mechanism, the camera is apparently quite simple and exceedingly accessible, the case opening on both sides and in front. The front panel carrying the lens mount is accurately registered by bolts and a screw thread of the type used in safety.

The lens mount is adapted to carry interchangeably five lenses of varying foci, from 35 mm. to 140 mm., the shorter foci working at f 2. Behind the lens panel the filter unit is located with a knife-edge, and firmly clamped in position, although easily removable for cleaning.

Easy Access to Controls

The camera is contained in a blimp, which affords access to the more important controls, including follow-focus, and is not appreciably larger or weightier than the average camera housing. A look-through tube enables the image to be viewed via a reverse reflection from the green image off the gold face. Run-trucks of modern design, made by Mole-Richardson and Moy, are available.

An important point is, of course, the accurate and unmistakable synchronism of the three negatives. To ensure this, they are punched in the camera with a punch which at the same time identifies the camera on which they have been shot.

THE TECHNICOLOR CAMERA.

The figure above shows schematically the arrangement of the optical system and films in the Technicolor camera. The films on the left carrying the blue and red images are used to produce the yellow and cyan (or blue green) matrices; that upon the right carrying the green record produces the magenta matrix. From these three matrices the positives receive their colourings.

Enough has been written about lighting conditions needed for Technicolor to make any such material superfluous in the present article. One point worthy of mention is that, while an increased level of illumination is needed compared with black-and-white, too high an illumination tends to make surfaces, and, particularly, complexities, blotchy, by making them appear on the print clear white in places. The latitude of exposure is substantially the same as in monochrome.

—Kinematograph Weekly, 25 1 37.

Dufaycolor Process

SUCCESS in negative-positive processing of mosaic screen material, such as Dufaycolor, depends upon minimising irradiation within the emulsion as far as possible. This can be accomplished by confining the developed image to the layers of emulsion nearest the support, and so preventing the spreading of each filter image beyond the confines of the mosaic element through which the light passing through it has travelled. An energetic metal developer, containing sodium thiosulphate, has been found most useful of all the methods described, in that it results in no loss of working speed and involves no steps but already employed in normal negative-positive monochrome technique. The timings, etc., are no more critical than in normal monochrome technique. In printing it is necessary to filter the printing light to remove rays transmitted by more than one element of the colour mosaic more effectively than is necessary by the reversal printing process, where the "colour contrast effect" tends to minimise loss of colour saturation.

The procedure should also prove of value in the negative-positive processing of lenticular films.

—The Photographic Journal, April, 1937.

Background Device

INTERESTING photographs were taken on a set at B. P. Schulberg's studio during production of the Paramount picture, "His Wife Lies."
Actors Ricardo Cortez and Mr. Tamiroff are shown walking down a New York Street. The background was photographed in New York, air-mailed to Hollywood, and composited at Schulberg Studio the following day by George Teague and his equipment.

The walking device used was built by Teague. It is driven by a variable speed motor and is absolutely silent in operation, allowing the recording of dialogue in all walking shots, heretofore considered impossible.

—International Photographer, March, 1937.

### Essentials in Making Dupes

A vital point in optical printing is the consistency of results; to maintain the necessary consistency as much latitude as possible is necessary in the two major steps—making the duping print and developing the dupe negative. It has been found that a duping print reproduces most satisfactorily when made upon a soft lavender positive stock, developed normally. This print should be timed so that the high-lights are printed through about two points darker than would be the case in a normal print for projection. It must be admitted that this duping formula is not the best for really fine-grain results; but the problem of consistency from day to day, necessary in quantity studio work, seems to be of greater importance.

From a mechanical point of view the quality of a dupe depends upon three factors: (1) the lens; (2) the quality and evenness of the light, and (3) uniform speed. Any sharp clean-cutting lens having an absolutely flat field can be used. A focal length of 4 in. is most acceptable, and the speed need not be faster than 1+5. A well-diffused 1000-watt tubular projection lamp is very satisfactory for a printing light. The motor should be strong enough to drive the printer without speed fluctuations; the speed should be controlled by rheostat rather than by change of pulleys or gears.

The machine used in the R.K.O. laboratories in America runs at a speed of about 18 ft. per minute. It consists of a camera head, with lateral adjustment, and a printer head with vertical adjustment, mounted upon a lathe bed 6-ft. long. The camera can also be rocked mechanically. The adjustments are calibrated by dials reading to 0.001 in. The camera drive has a gear change for eliminating alternative frames. Film in the printer can be rewound by motor in either direction at a speed of more than 90-ft. a minute.


### New Patents


28. Photographic Developing. GEAERT Photo Products N.V.

The developer contains an anti-fogging agent obtainable by condensing 2,5-thioketothiazolidine with a non-basic cyclic aldehyde or a derivative thereof; they do not influence the picture colour. Products of these agents derived by treatment with sulphite solution may also be used. In one example 2,5-thioketothiazolidine is condensed with benzaldehyde in glacial acetic acid and the product added to developer at the rate of 0.05 g. per l.


In systems employing an auxiliary record to produce expansion of the volume range of the sound record to compensate for compression introduced during recording, a single light source and a single photo-electric cell are so arranged that light from the source passes through both records to the photo-electric cell, the output of which thereby corresponds to the combined variations of both records.


Two systems of stereoscopic photographic photography are described, the first of which consists in traversing the depth of the scene in taking the photograph, the depth being divided into eight zones. Each complete traversal consists of eight separate exposures means a camera speed of 128 frames per second. These exposures are projected in the order in which they are taken, the illusion of depth being obtained by moving the screen into positions corresponding to those of the eight zones covered by the original photographs. This principle is apparently new. To overcome the practical difficulties of moving the screen in this manner, a second system is suggested in which two series of photographs are taken on an ordinary stereoscopic camera. These are projected through two lenses upon a transparent screen through a rotating wedge which causes one picture to appear as the other fades. In front of the screen is placed a vertical grid of wedge-shaped glass plates. Light from the screen is passed through this grid, and is reflected to the audience by an oscillating mirror actuated by a cam.

272. Standardization of Motion-Picture Make-Up. M. Factor.

The colour of various make-up materials has been measured by the Lovibond Tintometer and the spectral transmission curves of the Lovibond glasses used in the colour matching are given. The desirability of standardizing make-up is mentioned, and the photographic reflecting powers of the various make-ups are tabulated.

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Anthony Asquith

(Founder of the Association of Cine-Technicians)

on Ogres and Siamese Twins

FEEL an article with this title should begin “Once upon a time...” And indeed it would be possible to make it fit more than one fairy story. I can imagine the one where a Poor but Honest Director (I am now speaking as one myself) sends his beloved child out into the world, a pure Work of Art designed to delight and uplift the better-class houses. But on its way it has to pass through the cutting room, in which lives a fearful Ogre whose practice it is to fall upon little works of art with a great pair of scissors. And when they leave his hands they are nothing better than Common Box-Office Products. The Director never sees his child again, or if he does he fails to recognize it in the poor fallen creature living in commercial sin at the “local.” But there is another and, speaking as a cutter, more probable version, in which a Poor but Honest Cutter loves a Princess who, though she has nothing but theatrical experience, fancies herself as a film director. She gives him 100,000 feet of film in which every scene is a long-shot taken from one angle only and tells him to turn it into a Cinematic Masterpiece. If he succeeds he shall have her hand in marriage and a fortnight’s holiday with pay. If he fails, he must spend the rest of his days at the Blank Studios cutting the films of Mr. X., who shoots nothing but tracking and panning shots.

There is still perhaps just a grain of truth in each of these fables. Certainly the director is becoming rarer whose one idea of being “cinematic” is to track back from something or pan backwards and forwards from one speaker to another in a dialogue shot, but he is not extinct, and I myself have heard a producer condemn the quick cutting of a film by saying that he hated “these 30-ft. flashes.” Rarer still is the cutter whose one idea of speeding up a sequence is to lop off a couple of feet from every shot. Almost every cutter knows now that speed is not a question of actual length, but of proportion, and it is surprising how in some cases one can remove two or three feet from a shot with no apparent effect, while in others the loss of even one frame will make a tremendous difference. Ideally I believe that the director should cut at any rate the first version of his own film. Only he can know exactly the intention of what he shot, and then sometimes he cannot say exactly how that intention can be realized in the cutting till he has examined his material minutely. But when he has cut the film to his own satisfaction, I believe it to be essential to submit it to a fresh eye. I know how easy it is for a director to fall in love with certain sequences and even certain shots, and give them preference, like spoiled children, to the detriment of the film as a whole. Again, the director knows so well what he means to convey that he is inevitably a bad judge of what is clear or otherwise in the story. A sympathetic cutter, coming fresh to the film, will not only be quick to grasp these various mistakes—

The Hon. ANTHONY ASQUITH

...and will also have the skill to put them right.

I say I believe this to be the ideal way, but I know that there are practical objections, chief of which is the question of time. Films have usually to be got out quickly, and it

(Continued at foot of next page)
So This is Hollywood
By LEIGH AMAN (A.C.T. Member now in Hollywood)

CRAZY, but human! After several months here, I have more or less come to that conclusion. More or less, because you can’t come to any definite conclusions about so large a city as Los Angeles. It consists of so many separate towns and each one with little or no connection with the others. I am concerned only with the picture colony, usually called Hollywood, though even this covers many districts.

Before going into the more serious business of the strike, I must relate some of the incidents which have occurred to me. Some emphasize the artificiality and some the craziness. They all form for one an impression of Hollywood. First, a visit to one of the major studios. With some friends, I was shown into the office of the vice-president. He was very charming to us and announced (as a special honour, I was afterwards told) that he himself would accompany us round the studio. The first questions asked, naturally, were relating to the pictures in production at the moment. His answers seemed a little vague, but I put this down to a preoccupied mind. Having told us what to expect, he opened the door of the first stage. It was empty. Well, one mistake was all right, but this happened in every case except one! At this same studio I had already previously met the head of the foreign publicity department and was anxious for my friends to meet her. I enquired of the vice-president if this could be arranged and was met with a blank look. "Foreign publicity? Miss ——?" He had never heard of either! And he is in charge of production.

A great day in the history of the 20th Century-Fox studios is Shirley Temple’s birthday; for of course she is their major money-maker at the moment. She is guarded as closely as the Bank of England vaults, but on her birthday she is "on view." We arrived to find 200 children screaming and yelling. In the centre, surrounded by a pile of presents higher than herself and a group of solemn executives, was Shirley ("Miss Temple to you.") I heard someone near me say, "Nine," was the prompt answer. A gasp went up from the surrounding executives. "You mean eight, of course—" they all spoke at once. "Certainly I mean eight," came the reply, even more promptly, "I didn’t say nine, I said fine!" That, folks, believe it or not, is the truth.

I think the following is worth repeating, as it does sum up the attitude of the whole place. Encino is a district north of Hollywood, where a number of the stars live. The Encino Chamber of Commerce is holding its fortnightly meeting. Members present are Al Jolson, president and Mayor of Encino; Spencer Tracy, Edward Everett Horton, Paul Muni, Leslie Fenton, Warren William, Don Ameche and Sterling Holloway, actors; Robert Hopkins, writer; number with hundreds of chorus girls dancing, if the change of angle corresponds to the beat of the music you get a much more powerful rhythmical effect, because the sound and the picture are in unison. Not only are the girls within each shot dancing in time to the music, but the shots themselves are dancing in time to the music. This principle applies, less obviously and less frequently, even in dialogue. If you make your cut in relation to some emphatic point in the sound-track, you get a visual "kick" corresponding to the aural "kick" of the sound. Some years ago, in the opening sequence of "Dr. Jekyll and Mr. Hyde," there was a scene of the doctor lecturing to medical students, and whether purposely or accidentally, the cuts from one shot to the next followed the flow and rhythm of the speech in the most admirable way, giving visual movement to what might otherwise have been a purely static scene. The shots themselves were stationary (it is a major fallacy, in my opinion, to suppose that in such scenes you inject movement by panning or tracking over the faces of the audience), but the cutting was rhythmical. And the point I want specially to make is that the rhythm of sound film is not simple as in silent films, it is compound. It is neither the rhythm of the picture nor of the sound, but of the relation of the one to the other, just as in a ballet the rhythm does not lie in the movement of the dancers or the beat of the music, but in the mutual relationship of the two. Of course in hundreds of scenes this principle will not arise in any obvious form, but I do believe it to be generally true. Naturally it is difficult for the cutter to apply this principle to material which has not been shot with it in mind, but that is only an added reason for the closest co-operation between the director and the cutter. If they cannot be the same person, let them at any rate be spiritual Siamese twins, or to return to fairy tale language, the Poor but Honest Parents of the little work of art which turned into a box-office success.

Ogres and Siamese Twins (continued from previous page). It is therefore impossible to wait for the shooting to be over for the cutting to begin. The cutter, then, should be, and in fact is rapidly becoming, a kind of co-director, working in the closest co-operation with the director, not only in the studio theatre and cutting-room, but even on the floor.

Long past are the days when the cutter was just someone who snipped off the number-boards and joined the shots together in the right order—though it is true that some directors, Hitchcock for example—are able to work out their shots so accurately in the script that they can practically cut the film in the camera. But most directors like to allow for more than one possible combination of their shots and this makes it essential for the cutter to be an artist as well as an artisan. It is up to him to construct the film out of the material given him, endowing it with the form and rhythm which should be latent in it, and by his skill and imagination contributing something personal which is yet in harmony with the director’s conception, just as a good orchestral player may give an individual quality to his phrasing which at the same time carries out the conductor’s ideas.

Gibbon says in his autobiography, “the knowledge of the boy gave place to the more rational ignorance of the man,” and the more experience I have the more I distrust general principles. There are practically no universal rights and wrongs in direction or cutting, and though we all have our pet theories, there always comes a time when practice compels us to discard them. If then, I end this article with a personal generalization about cutting, I know quite well that many of my readers will be able to invalidate it by particular examples. Speaking generally, I do not believe that some cutters pay enough attention to the relation of the cut to the sound-track. Obviously in many cases the change of angle is, and should be, unnoticeable and therefore is not a point of emphasis. But in certain cases the cut is a tremendously emphatic thing. For example, in a musical
and Bert Kalmar, song writer. Here with the imaginary
minutes of the meeting. ("You know, sometimes they seem
more like hours."—Horton.)

Jolson (rapping for order and not getting it)—Gentlemen,
gentlemen!
William (To Muni)—I saw you in your last picture and you
were great. You wore a beard.
Muni—I'm wearing one now.
William—Well, you were great anyway.
Ameche (To Tracy)—I saw you in your last picture and you
were great.
Tracy—I didn't see you in yours, but you were great too.
Hopkins (Who wasn't in his last picture)—Let's come to
order, fellows, or Jolson will sing "Sonny Boy."
All (Groans).

Jolson—The Encino Chamber of Commerce is now in

session.

Horton (Pleaded)—Really?

Jolson—We're ready to listen to constructive suggestions.
(As everybody starts talking)—Wait a minute! One
at a time. We'll start with me. I am in favour of
lower water rates and cheaper irrigation. How does
that strike you, fellows?

Horton—Here, here!

Tracy—Mr. Chairman!

Jolson—Who, me? Just call me Al, pal.

Tracy—Mr. Chairman, I own a ranch on White Oak Street.

It is a very nice street, but there are no lights on it.

Fenton—Mr. Chairman! I move we submit a proposition
for more paved streets north of Ventura Boulevard.

Mr. Horton will second this motion, I know.

Horton—What? Oh, absolutely. That's what I came
here for. I just remembered. More paved streets,
Mr. Chairman, of course.

Jolson—Now we're getting somewhere. Will somebody
back my plan to demand lower water rates?

Muni (Booming)—I will.

Jolson (Startled)—And who are you?

Muni—I'm Paul Muni.

Holloway (Jeroing)—Yeah, and I'm Luise Rainer!

Jolson—Silence! This man says he's Paul Muni. All in
favour say "Aye!" Against, "Nay!" (Mixed
chorus of Ayes and Nays)—Well if you can't make
up your mind, we may as well adjourn—

Muni—Doesn't anybody know me?

William—I know you, Muni—or is it Mooney? You were
great in your last picture.

Holloway—I second the motion.

Jolson—Meeting's adjourned!

Horton—Oh dear, I did so want those paved streets . . .

Now comes the "high spot" so far of my sojourn here
(the new one will be if I get any work)—my interview with
the High Llama of the film industry at the largest studio in
the world (according to their own publicity department).
The appointment was for 2:30 and I was on the dot, as for
me it was important. One of the first things you have to
learn in Hollywood is always to turn up at least an hour late
for anything—you'll still be early. We—my father and I—
were greeted by a typist in the extreme outer office and were
asked to wait for a few minutes. After an hour or so we
were met by a secretary and conducted one office further in
and so on through three offices, past four secretaries at last
to his personal secretary. A little more waiting and at
5:30 we were ushered into The Presence. A vast office,
panelled in some kind of blue wood, with a hideous
Victorian fireplace and clock on one side. At the extreme
end a still more vast desk. Oval in shape, with a hole in

the middle, in which he sat surrounded by telephones.
He never spoke or smiled, just looked—so my father began
by thanking him for his help on the previous night. (He
gave $10,000 for a certain cause.) Then the phone rang
and for ten minutes he talked with his agent about some
woman they were signing up. A snatch of the conversa-
tion was, I remember: "Well, we'll let her cool off for a
couple of days—remember we're dealing with a mad
woman!" He rang off, smiled at us, and said to me,
"Call me up on Monday, we'll see what can be done."
A secretary appeared and we were gently but firmly removed.
As yet that's the last I've heard. I only repeat this,
because I hope some people on the way up will read it and
remember not to become too important.

Concerning the strike, I don't know how much has been
printed in England. Here, of course, it was News, which is
always eagerly lapped up whether true or not—and plenty
was printed that was not. I need not repeat the history of
the strike, as it will doubtless already be known. I will
mention some of the salient points round which, it seems to
me, the problem revolved.

The strike was called by the Federation of Motion Pic-
ture Crafts for union recognition and affected about 6000
workers. The trades involved were the painters, make-up
artists and hair-dressers, scene artists and draughtsmen.
One or two others, such as the culinary workers and precision
machinists, joined for a short time later. It so happened
that, at this time, a large number of the major studios were
commencing shooting some of their biggest and most im-
portant pictures. Most of the important work of the strik-
ing crafts was completed before the strike, so, with the
exception of make-up, shooting was able to proceed. The
make-up and hair-dressing difficulties were solved in most
cases by making the artists do themselves, though there
were a few still at work. So the problem was how long could
the studios shoot without these essential crafts? As long as
there were no major set changes involving construction. This
might be anything from three days to six weeks in the case
of "Dead End," which is almost entirely on one set. On
the other hand, how long could the strikers hold out? It
is impossible to surmise how long this would have been, for
further complications developed later, which cut short this
waiting and, in my opinion, considerably altered the final
results.

As to the position of the numerous unions involved, it
was roughly as follows:—The International Alliance of

Leigh Aman, Bette Davis, Ian Hunter, Lady Marley, Lord Marley and Edmund
production.
Theatrical and Stage Employees, the most important technicians' union in Hollywood at present, opposed the striking F.M.P.C. Both these unions are affiliated to the American Federation of Labor. The strikers complained to the A.F. of L. of the strike-breaking activities of the I.A.T.S.E., but the A.F. of L.'s president then announced that the strike was not "authorised." An offer of help from John L. Lewis's C.I.O. was refused by the F.M.P.C.

It is doubtful that they could have been very much help, as it would have meant more lighting reorganisation. And no one was in a position to stand that. Then came the further complications. The Screen Actors' Guild entered the fray. The I.A.T.S.E. swung round and promised to support the Guild if they struck. Now the Guild, even then, was a very powerful organisation, having as members a large number of top-rank stars. Gradually the whole position settled on the Guild. The producers realised this, and realised the danger of a general walk-out, so when the Guild delivered their own ultimatum it was settled at once. Immediately the F.M.P.C. lost the support of these two powerful unions.

The result up to the present is that the strike has been slowly petering out, as one branch after another has returned to work. It has been, I think, a serious case of "too many cooks." It turned out to be lucky for the producers that the Guild stepped in when it did. Otherwise they would have eventually felt the need of the striking crafts.

The Guild were serious, too. It was reported that stunt men and cowboy actors were all prepared to organise a troupe of 300 horsemen for picketing, or for charges on producers if required! So far-reaching were the results that even Garbo had to join! The settlement included a "Guild shop" (virtually closed shop), numbers of substantial pay increases for small-part players and stand-ins, and a $5.50 per day minimum for extras.

This is only really an outline of the position as I see it. The truth is very difficult to get at, lying buried as it does under all the publicity and newspaper stories. There were many minor differences within the various unions concerned, but none that seriously altered the results. Many said that the executives of the Guild were not serious and had no intention of striking at all. Certainly they were in a position to ask more than they did. The strike is not officially over yet and it is possible that some kind of agreement may still be reached, though the producers now have the upper hand.

But "News marches on" and another event has recently taken the headlines. This is the demand of Culver City to have its name changed to Hollywood! The M.G.M., Hal Roach, and Selznick International studios are located in Culver City and they claim that since the most important pictures originate there, why should they not use the traditional name of the film capital. On the other hand, Hollywood as a city, does not exist, so at the moment they are powerless to do anything. A number of Hollywood stars have got together in protest and have even gone so far as to threaten to demand a vote for Hollywood to secede from Los Angeles, of which it is a part! The fight continues.

Finally, I must mention a very recent event which will almost certainly have been complicated and publicised by the time it reaches England. The death of Jean Harlow, although a news story of the first magnitude, has emphasised to me the other quality in Hollywood—its humanness. Whatever has been printed, I can see that, regardless of position and rivalry, nobody could be more sympathetic and genuinely sorry than have been all the stars and, indeed, the whole film industry for Miss Harlow and her family.

The Royal Photographic Society and A.C.T.

Since the beginning of this year, the contact between the Association and the Royal Photographic Society has been very greatly strengthened. A.C.T. has since 1935 been affiliated to the R.P.S. through the Central Association of Photographic Societies, but at a recent A.C.T. General Council Meeting it was decided, at the suggestion of the R.P.S., to transfer our affiliation through the newly-formed Federation of Cinematographic Societies and we shall in future be attached to the Alliance through that body. On several occasions during the last month, joint meetings have taken place between A.C.T. and R.P.S., and A.C.T. is now represented on the Joint Technical Committee, and further, has a member on its Kiné Committee. An important result of these talks has been the enlarging of the scope of the Associateship and the Fellowship to include all branches of the industry, and it is now open to any technician to acquire professional standing through this medium.

The annual subscription to the R.P.S., which is the same for all classes of membership, is £2 2s., the entrance fee of £1 1s. being waived by the Alliance scheme in the case of A.C.T. members. It is proposed to institute a Junior membership for persons under twenty-five years of age, who will enjoy certain privileges. The subscription to this grade will be £1 1s. annually, but full membership privileges can be acquired at any time before the age limit is reached by paying the ordinary membership subscription.

Members have the right to attend all meetings of the Society and of introducing thereto two visitors. Meetings are held weekly on Tuesdays and Fridays for nine months in the year, and papers and lectures on every phase of photography are given. These papers are published in the Society's official organ, The Photographic Journal, which is issued on the first day of each month, and all the Society's many activities are faithfully reflected in its pages. The Society also publishes quarterly Photographic Abstracts, consisting of abstracts of the world's photographic literature.

The Society's house is open daily, Sundays and certain holidays excepted, and includes well-fitted dark rooms, an enlarging room, a workroom, and a fully equipped studio. There is also a very fine library and reading room, and a spacious meeting room, which possesses its own standard projector. The Society is in touch with many other professional organisations besides A.C.T., including the British Film Institute, the Guild of Projectionists and the B.K.S., and is planning to extend its activities even further.

Technicians will directly benefit the Association as well as themselves in joining the Royal Photographic Society, as 25°, of their first year's subscription will be remitted back to the A.C.T. as an affiliated society, and there is a reduced subscription for those members who join in the middle of the year.

Anyone requiring further information should apply to Mr. H. H. Blacklock, F.C.I.S., the Secretary of the R.P.S., at 35 Russell Square, London, W.C.1, who will be glad to supply full particulars of the Society's aims, and to answer all questions.

T.S. Lyndon-Haynes, A.R.P.S.

LAB. TOPICS

"Gamma" regrets that he has been unable to send us his page, but hopes to continue as usual next issue.
The Projection of Lenticular Colour Films

J. G. CAPSTAFF, O. E. MILLER and L. S. WILDER
(Kodak Research Laboratories)

INTRODUCTION

THE lenticular film colour process, in common with other additive colour processes, involves a large loss of light by absorption in the colour filters necessarily used in the projection system. Therefore, it requires so much more illumination than is needed for projecting black and white pictures that it was believed until recently by many responsible persons in the industry to be impossible to show these pictures properly even in the average theatre, not to mention the de luxe houses with screens from 25 to 35 feet in width. To illustrate the seriousness of the problem, it was estimated that about ten times the normal amount of light would be needed. The colour filters used for projection during the earlier experimental work had a transmission of only 12 or 13 per cent., and the intensity was further reduced by the lenticular surface of the film support. The Kodak Research Laboratories recently undertook to make a systematic investigation of the possibilities of lenticular film projection and to give an actual demonstration in a de luxe theatre.

A preliminary survey of the problem indicated quite a number of possible ways in which the screen illumination could be increased. Some of these, which were temporarily laid aside for practical reasons, will not be mentioned except in the concluding remarks. With a desire to limit the investigation to the use of already existing projection equipment with only minor alterations, the work was pursued along the following lines:

1. Reduction of the absorption loss in the colour filters.
2. Modification of the optical system to increase its relative aperture.
3. Recovery of part of the light lost because of the shutter.
4. Reduction of the density of the prints.
5. Improvement in the operating conditions of the illuminating system.

EXPERIMENTAL WORK

Filters

Since the greater part of the light is lost due to absorption in the colour filters, the problem of screen brightness becomes progressively easier as the filter transmission is increased. After a certain point, however, the colours of the projected picture begin to lose saturation and appear "washed out." The colour reproduced on the screen can be of no higher degree of purity than that of the projection filters. As the red filter is made lighter, it soon begins to transmit yellow, and becomes an orange red. With such a filter a good red cannot be represented properly on the screen. After a considerable amount of experimental work with dyes and a number of observations with filters.
of different density, a standard filter was finally adopted which was thought to have the highest transmission it was possible to get without a too noticeable loss in colour saturation. The transmission of this filter, when used with the high intensity arc system to be described later, was 22 per cent. This multiplied by the 80 per cent. transmission of the lenticular film support gives an overall transmission of 17.6 per cent. Therefore the factor by which the normal illumination needs to be increased is 5.8 times.

Optical System

Fundamental Conditions

As shown in schematic form in Fig. 1, the essential elements of a projection system suitable for lenticular colour films are:—light source, collective element, collimator lens, film gate, projection lens, and colour filter. A detailed discussion of the optical relations involved in the use of lenticular films is not within the scope of this paper, and therefore a mere statement is made of the necessary conditions to be observed in practice:—

1. The light source must be imaged at the film gate.
2. The collecting element must be imaged at the colour filter.
3. It is essential to have all elements centered on the optical axis.
4. The colour filter must be located at the front focus of the projection lens.

It will be obvious that the first three of these are the identical conditions for the optimum screen brightness and uniformity, even in black and white projection. The fourth condition comes about as a result of a particular optical property of the lenticular colour film itself and is dependent on the optical arrangement used in printing.

Projection Lenses

The greatest single gain in illumination promised to come from increasing the relative aperture beyond the f/2.5 systems commonly used. In view of the successful use in the 16 mm. field of lenses having a relative aperture of f/1.6 or better, it was thought that it ought to be possible to set up a 35 mm. system that would equal this. Two f/1.6 lenses were secured with focal lengths of 120 mm. and 160 mm. Except for the somewhat inferior definition of one of them, these lenses were entirely satisfactory for the purpose. On account of the much larger diameter of the lens barrel, it was necessary to make a new lens mount for the Simplex projector.

Illuminating Systems

Before the increased relative aperture could be fully realised, it was necessary to modify existing illuminating systems so as to fill an angle of f/1.6 and at the same time to fulfill the conditions necessary for use with lenticular films. The particular lamp selected for the first experiments was the Peerless "Magnarc,"* which appeared to be a good example of a high efficiency reflector system. After a number of different optical arrangements had been tried, using reflectors of different focal lengths, it was apparent that the only change necessary was the addition at the front of the lamp house of an inexpensive condenser lens. To avoid breakage due to the extreme heat, this lens was made of pyrex. The complete optical arrangement as it was finally used is shown in the diagram of Fig. 2, which is drawn approximately to scale. The regular "Magnarc" reflector is 14 inches in diameter, and 5\(\frac{1}{4}\) inches from the arc crater. The plane surface of the auxiliary condenser is 28 inches from the centre of the reflector, and 5\(\frac{1}{4}\) inches from the film gate. This condenser is 4\(\frac{7}{8}\) inches in diameter and 15 inches in focal length. The addition of this condenser to the "Magnarc" brings the image of the reflector into the plane of the three-colour projection filter. The filter is located near the front focal plane of the projection lens, a necessary condition for lenticular film projection. In order to allow the larger cone of illumination from the modified illuminating system clear access to the film gate, it became necessary to enlarge the apertures in the shutter housing and in the masks back of the aperture plate on the Simplex projector. When the full f/1.6 relative aperture is filled, there should be 2.31 times the screen brightness that is obtained with a corresponding system of relative aperture f/2.5. The actual screen brightness obtained with this system was slightly less due to mild imperfections in the quality of the reflector. Certain dark zones appear on the reflector surface when viewed from the film gate. This modified "Magnarc" system was used for a great part of the experimental work and for the demonstrations which are to be mentioned presently.

* There are other lamps on the market similar to this one which should be equally suitable.
Magnification of the Arc Crater

It will perhaps be contended that the increase in the relative aperture obtained in this way is at the expense of the crater magnification at the film gate, and that the uniformity in screen brightness will be unsatisfactory. Of course, the crater of the high intensity arc is not uniform in brightness, being brighter at the centre than at the border. For this reason, and also in order to provide some tolerance in the position of the arc, present illuminating systems are made to have a higher magnification than would be necessary to just fill the aperture. However, when the lenticular colour films are projected with the above system, the corners of the picture do not appear to be more poorly illuminated than is the case with the average black and white system. The reason for this lies in a particular requirement of the camera and projector lenses used in the lenticular film process. The lenses used in black and white work, both in the camera and to a somewhat less extent in the projector, cause a falling off in the marginal illumination due to the fact that the lens aperture cannot be completely filled for oblique angles. With some of the camera lenses ordinarily used in black and white work, this becomes so bad that the corner illumination falls nearly to zero. This results in a print with a higher density at the corners than at the centre of the picture. When this print is projected, the additional density at the corners adds considerably to the deficiency of corner illumination already present in the projection system.

This property of the lenses becomes objectionable in the lenticular colour film process, but for a different reason, as is seen in the diagram, Fig. 3, which shows different views of the lens and colour filters as they would appear when viewed from different points on the screen. Disproportionate areas of the colour segments are illuminated for different positions around the margin of the screen, a condition that leads to an uneven distribution of colour on the screen and cannot be tolerated. Thus, because of the choice of lenses which this makes necessary, one can afford to use a lower magnification of the crater. However, it may be desirable to have a slightly larger crater image than that used in the present system, and this could be accomplished by substituting a 9 or 10 mm. carbon for the 8 mm. one now used.

The Heat Problem

Considering that there are already reports from theatres when using improved black and white equipment of too much heat at the picture aperture, it was not surprising to find in the preliminary trials with this more efficient optical system that the film was badly damaged by the terrific heat. Attempts to cool the film by a jet of compressed air were insufficient. Clearly some sort of heat filter had to be used. Previous experience with water cells did not favour their use in the theatre projection booth, so heat-absorbing glass was tried. Used in a single sheet, this broke repeatedly, even though it was of the heat-resisting type. Cutting the glass into 1-inch strips and mounting these side by side prevented breakage, but it was found that the glass would soon melt unless subjected
to a current of air. Since too much colour in the glass would have been objectionable, it was necessary to use a density only just sufficient to reduce the heat to a safe value. The filter finally adopted was in the form of several \( \frac{1}{2} \)-inch strips of Corning extra light Aklo, 2 mm. thick, held loosely side by side in a rectangular metal frame, and cooled by a gentle current of air from a small furnace blower. The location of the filter in the optical system must be such that the edges of the glass strips are not visible on the screen. In the present instance, the glass was mounted on the front of the shutter housing at a distance of approximately 3\( \frac{1}{2} \) inches from the film gate. No trace of the edges of these strips has ever been noticed on the screen. The air was directed on to both sides of the glass by appropriate baffles. With this filter, which transmits only 25 or 30 per cent. of the total heat energy, the heat of the aperture is actually less than that obtained with some of the better projection lamps now in use. The familiar “biscuit” appearance on projected prints is entirely lacking. Part of the air from the blower is directed on to the film gate. This gives a slight additional cooling to the film and to the metal parts around the aperture.

A Relay Condenser System

To see what could be done with the 120 ampere high intensity arc used with a condenser system, a Hall and Connelly lamp was set up with a set of 2-inch condensers and a relay system. In a relay system full advantage can be taken of the entire crater surface because this is not imaged at the aperture. Furthermore, advantage can be taken of the fact that the entire crater area emits red light with practically uniform intensity. Since in colour work the limiting colour seems to be red, the entire crater surface can be made use of. The measurements of screen brightness with this set-up show that it is possible to get equally as bright a screen with the “Magnarc” system, and it becomes somewhat easier to maintain the screen uniformly. Therefore, where there is sufficient room in the projection booth to accommodate the increased length of a relay system, this type of lamp would very well serve. The remarks about to be made about adjustment and operation of the optical system apply equally well to condenser systems and reflector systems.

Adjustment and Operation

A great number of observations were made with the best types of black and white illuminating systems at present in use in order to determine, if possible, what effect the operating conditions and the adjustment and alignment of the optical system had upon screen brightness. Based upon these observations, it is believed probable that the average theatre’s projection machine often does not deliver much over half the screen illumination of which it is capable. Losses occur in many ways—accumulation of dirt on the screen lowers its reflecting power; the reflector or condenser surface facing the arc becomes clouded with smoke, pitted with flying particles, and has to be constantly cleaned in order to preserve the light transmission. Because of the imperfections in the commercial mirrors and condensers, the screen uniformity is not at its best when the system is adjusted to give the maximum screen brightness.* The projectionist, therefore, has to sacrifice a considerable amount of screen brightness in order to improve the uniformity. Errors in the centering of condenser systems can be responsible for appreciable losses in illumination. Some projection lenses are in use which have a lower transmission than is desirable. Carbon arcs are somewhat erratic in behaviour. The crater sometimes burns unevenly, and the crater brightness varies from time to time. A substantial improvement could be made in all of these operating conditions. Possibly new equipment would have to be designed in order to free the projectionist from the necessity of constantly attending to the adjustments of the various manual controls found on the present lamps. If the arc operation could be sufficiently stabilised, and the arc crater accurately held on the optical axis, the entire system could be set up and adjusted once for all, and the projectionist would then be required to make only the single adjustment of keeping the arc crater in the correct position along the optical axis. There is no reason, furthermore, why an arrangement using photo-electric cells could not be devised that would make even this adjustment automatically.

Reduction of the Shutter Loss

Since 50 per cent. or more of the incident light is lost at the shutter, it seemed worth while to attempt to recover some of this loss by speeding up the pull down movement, and using shutter blades of the narrowest possible angle. No originality is claimed for the method used. Inside the housing of the Geneva pull-down mechanism used on all Simplex machines there is a pair of small spur gears through

which the intermittent assembly is driven. By substituting a pair of elliptical gears, the intermittent movement was accelerated so that the pull-down period occurred in 52 of the cycle instead of the usual 90°. Using this, in combination with a 45° covering blade and a 30° flicker blade, a gain of 59 per cent, was made in screen illumination. However, it was thought that this was too severe on the film and a second pair of elliptical gears were prepared which gave a more moderate acceleration to the pull-down mechanism, and accomplished the movement of the film with a 68° interval. Using with this a covering blade of 60° and a flicker blade of 40°, a gain of 44 per cent was realised. However, unless there are certain changes made in projector design which will compensate by reducing the stresses occurring in the pull-down operation, it is doubtful whether application of even this mild degree of acceleration to the Geneva movement is practical. The Powers movement, however, because of the smooth acceleration, offers possibilities for a quicker pull-down.

The proper size for the shutter blades was arrived at empirically by progressively increasing the width until there was no noticeable flicker or travel ghost on the screen at the ordinary brightness level. Advantage was taken in these experiments of the fact that the perceptibility of both flicker and travel is less as one proceeds to lower levels of illumination. If it should later be found necessary to increase the shutter blade slightly, it would represent a loss of only a few per cent. A further discussion of the subject of projector mechanisms is believed outside the scope of the present paper. Although the work done so far must be regarded as merely preliminary, there seems to be ample grounds for believing that more can be done in a practical way to recover a considerable part of the light lost at the shutter. In this connection, moving the shutter to a position very near the film plane so as to give quicker cut-off of the light beam would be a worth-while step. However, in the small neighbourhood theatres, probably no change in projector mechanism would be needed in order to get sufficient light.

Print Density

Another loss of light occurring in the ordinary projector is caused by the minimum photographic density allowable in making the print. Because of the excellent tone reproduction obtained with the lenticular process, it is possible to make the print density lower than that of a corresponding black-and-white print by approximately 10. This gives a 25 per cent. increase in picture brightness.

Summary of the Gains Made

It was pointed out above in connection with the filters that the maximum filter transmission combined with that of the lenticular support was in the neighbourhood of 17-6 per cent, which corresponds to a factor of 5.8. This is the factor by which the screen brightness must be increased in order to equal that of corresponding black-and-white projector. The gains made and discussed above may be summarised as follows:

Table 1.

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<tr>
<th>Factor</th>
<th>Gain</th>
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<tr>
<td>2.31 x</td>
<td>1.44 x</td>
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<tr>
<td>1.25 x</td>
<td>4.32 x</td>
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(Continued on page 87)
Cinema Log

Cigarette Card Film Lessons.

While I was looking through the world's largest "Fag Card" collection at Chiswick the other day, Mr. Bagnall gave me a set of cards dealing with all branches of Film Production. Entitled "How Films Are Made," these 25 cards explain in simple detail the technical departments of production. They were published by Morris Cigarette Co., some time ago, the facilities for their preparation being granted by Gaumont-British studios.

Mazzei Art for Blackpool.

Andrew Mazzei, the Art Director and ardent A.C.T. supporter, did not let the cinema depression get the better of him. He gathered his boys from the devastated studios and trekked away to breezy Blackpool, where their art in a more permanent form will gladden the hearts of Northern holiday-makers in the new Squire's Gate super holiday camp. A Moorish palace in pale primrose-grey, with romantic windows, gently sloping steps and intricately designed pillars, red-tiled roofs and turrets, gives a sunny greeting to the cotton operatives on holiday bent. The ballroom is in traditional Spanish style (bright orange, blue, gold and silver predominating). All this has been designed by Andrew Mazzei, who also designed the Baronial Hall and Spanish Courtyard of Blackpool's Winter Gardens. Yes, Blackpool is steadily becoming "Mazzei-ised," for which we must congratulate Andrew and his A.C.T. and N.A.T.E. crews.

Hints on Finance.

For the first time in the history of the cinema, the audience has been asked to contribute to a film before it is made, and even allowed to see an outline of the script!

The film is "La Marseillaise" and the director Jean Renoir. The story deals with events from just before the Fall of the Bastille up to the Battle of Valmy, and points a moral for the present situation in France. The production is to cost three million francs, secured by issuing one-and-a-half million two franc tickets, which entitle the holder to a two franc reduction at any cinema where the film is subsequently shown.

The production is organized by Ciné-Liberté, the association of French film workers and technicians which was responsible for "La Vie est à Nous" (shown last season by The Film Society). Ciné-Liberté will issue fortnightly bulletins to acquaint subscribers with the progress of the film.

A West-end Club for 1-

Have had many interesting chats recently with that hale and hearty veteran Trade Union leader Ben Tillett, who is chairman of the National Trade Union Club, 24-28 New Oxford Street. His seventy odd years of industrial strife hang lightly on him as he sits back and reviews the progress in labour conditions that his early struggles have helped to bring about. Ben has a grand sense of fun and his amusing stories can be heard if you get into touch with the Club Secretary, Arthur Peacock, who, over a glass of something at the "Bar," will make you a member on production of your A.C.T. card and a 1-, when you will be able to lunch, dine and wine for a whole year at the Club.

By KENNETH GORDON

Does Basil Emmott Hold Record?

Is eighty-five full-length feature films photographed as camera chief a record for a British cameraman? Well, this is Basil Emmott's achievement on his completion of the photography for Warner's picture, "Music and Mystery," at Teddington Studios, featuring Keith Faulkner and Chili Bouchier. Have known Basil ever since he started with the old Gaumont company in 1919. His first film was "Broken Bottles," which, if I remember rightly, he turned on a Willard Camera. He was also the first cameraman to film Victoria Falls from the air, when he made a flight to the Cape with Sir Alan Cobham in 1925. When filming close-ups of the Falls the spray affected the carburettors of the machine, which nearly cost the crew their lives. Basil Emmott has always been a very keen photographer, which is his hobby as well as his profession.

My claim that Basil holds a record may be challenged by other British camera chiefs, so I await their figures with interest.

"Glebelands."

The Twelfth Annual Report of the Cinematograph Trade Benevolent Fund covers "Glebelands" first year. There are 19 permanent residents and 21 convalescents. Over £30,000 has been raised to make possible this home for elder and incapacitated members of the trade, and a convalescent home for younger members temporarily in need of a change of surroundings and a rest to enable them to recover from operations or illnesses. Frank Canham, one of the permanent residents, writes asking us to remember him to all his old colleagues, and says how much he will appreciate visits from anyone who happen to be that way. His testimony alone should convince members of the need to support this excellent establishment and contributions will be welcomed by Mr. R. C. O. Viveash, Secretary, at 52, Shaftesbury Avenue, W.1.

Victor McLaglen to Come Home

Sailing soon from America on his first visit home for many years, Victor McLaglen will play a key rôle in Gracie Fields' first Twentieth Century Fox picture, "HE WAS HER MAN," scheduled for production at Denham and to be directed by Monty Banks.

Victor made his first screen success in the British film, "THE CALL OF THE ROAD," filmed by D. P. Cooper, whose photography on this subject was very fine. This, of course, was in the days of Westminster Ares and no Spots; in fact, in the pre-pan era.

Victor used to use me as a chopping block to illustrate funny boxing stories which he was very fond of telling in the old Kinema Club.

Well, Victor's made good, and we welcome him back to the old country and trust that through him some British cinema technicians will get a break.

Crocker And All That . . .

By the time this issue of The Cine-Technician is published, the law should be well on its way to clear the financial air of its dark clouds and British production should once again be receiving sound financial support.
Lenticular Colour Films (continued from page 85).

This is somewhat short of the required 5-8 times which is necessary to balance the filter loss. In addition to the above gains, the authors are of the opinion that the amount of screen illumination can be doubled if a sufficient improvement can be made in the operating conditions of the arc and the optical system. The product of this and all the above factors of gain gives 8-32 times, which leaves an ample margin for the projectionist in the operation of the projector when compared to the loss factor of 5-8 mentioned above.

DEMONSTRATIONS

The complete experimental projector was used to give two demonstrations in the Loew's Rochester Theatre in April. On both occasions the 52" accelerated pull-down was used. After the 68" pull-down was substituted, the machine was used to give a demonstration in the Centre Theatre in Radio City on July 9 for the benefit of some 200 invited guests. Many of these people commented on the show, but no one expressed any feeling that there was a lack of screen brightness. Some actually said they believed the screen brightness was higher than necessary.

Although many measurements were made throughout all of these experiments of the screen illumination, a simple statement of the values in foot candles obtained would have little meaning in view of the conflicting reports already published both as to the screen brightness actually prevailing in theatres and as to the actual level of screen brightness that is to be desired. To give some indication, however, of the amount of light obtained on the screen in the Centre Theatre, the value measured with a Weston Illumination Meter, Model 603, without the colour filters or lenticular film, but with the shutter running, was 33 foot candles at the centre of the screen. The screen picture was 22 feet wide, and the projection angle was approximately 28°. If the heat absorbing glass filter were removed, the value would be more than 40 foot candles.

FURTHER POSSIBILITIES

Of course, every precaution was taken in both of these demonstrations to insure optimum operating conditions. It is probably too much to hope that optimum conditions could be thus maintained at all times. With this in mind, other possibilities will now be discussed with which still more light might be obtained. If the regular high intensity carbons were used, instead of the Suprex carbons, in connection with a reflection type lamp of most efficient design, there would be an increase due to the higher intrinsic brightness obtained with the regular high intensity carbons. The possibilities that a new type of arc source will be developed having a still higher intrinsic brightness cannot be excluded. In this connection, carbon manufacturers express the belief that development work now in progress will produce a carbon, which, with the proper optical system and lamp mechanism, will give the desired intensity, colour and uniformity of light, and at the same time, keep the energy input into the arc within reasonable limits. There are some improvements yet to be made in the present experimental optical system which will make it possible to eliminate some of the glass-air reflection losses. A desirable further improvement in the optical quality of commercial reflectors would reduce losses arising from the imperfect formation of the crater image at the film gate. The belief has already been expressed that improvement in projector design could be made which would further reduce the shutter loss. Another consideration is the possibility of a slight reduction in the screen size. Even for black-and-white projection, a reduction in screen size is being advocated by some in the industry. It is difficult to find any objection to doing this since, with the present sizes of screens, there is always a large block of seats near the front which the patrons avoid because of the discomforts of so large a viewing angle. There would seem to be no loss in desirable seating space by making conditions more comfortable for those in the front even at the expense of some loss in the rear of the house. Since the screen brightness would vary inversely as the square of the screen width, a considerable gain in illumination ought to be made possible by only a moderate reduction in screen size. The use of the ordinary specular screen would, of course, be limited to the long narrow houses where the seats are distributed within an angle of some 20°. The design of equipment to take care of the few large houses with exceptionally large screens must be considered as a separate problem.

CONCLUSION

Although not all possibilities have been utilised in this preliminary investigation of the problem, it is seen from the foregoing experiments that lenticular colour films can be projected satisfactorily in the average theatre without the necessity of making major alterations in the present equipment.

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Thunder That Went West

By GEORGE PEARSON

I HAVE read with interest your recent symposium, "WHAT'S WRONG WITH BRITISH FILMS?" Quite a lot, and there always will be. Tamar Lane, the American film expert, wrote a very illuminative book, "WHAT'S WRONG WITH THE MOVIES?" He also found a great deal to worry about in American films, and again there always will be, but they have put quite a lot right. Things are moving here too; there is a sanity at work in British studios, and a new sagacity amongst financiers that together presage the passing of mediocrity.

The British film has rarely had excellence in both form and content; the one without the other makes for failure, and the British technician working in form has suffered in repute by association with mediocrity in content. The foreign technician achieved success by association with success, by familiarity with excellence in form and content, by the use of the finest tools. None will deny the value to this country of the work of the foreign technician in the studio, but the lessons have been assimilated, and our own technicians justly ask for opportunity. It was a wise American who said, "Success is the art of being believed in." But status will only advance as the film itself improves, and improvement can only come when the technician is encouraged to bring his knowledge of the form to bear on the content, when he has been permitted to step a little outside the realm of craftsman to become artist.

To my mind, the root trouble with us is material of the film, and I do not differentiate between cheap quota or expensive "super." Which suggests that, having risked contumely by an adverse generalisation, it might be wise to hint at a little constructive criticism by way of explanation. So I have wandered into the Garden of Memories for a while to look back on the far-off days of striving, adventure, frustrated aims, abandoned ideals, successes and failures in the fairy land of the films. In those distant days the silent picture was nurtured to an amazing virility. Then came death in a night. With its passing went much that was naive, much that was meretricious, but alas, much that was inspiring and provocative towards a genuine art of expression through a limited medium.

From that tumultuous life of the silent film is there anything worthy of remembrance, any grain of wisdom worth the gathering. Is there aught of value to hand on to its successor, the talking-film? By experience and subsequent reflection one arrives at personal conclusions which may or may not be of service to others. Having been privileged to work in both mediums, I dare assert the past has left two legacies of rare value to the present; I think America has accepted them and incorporated them in her screen creed. I fear we in Britain have almost forgotten them.

The Silent Motion Picture. A life of scarcely thirty years saw it emerge from the gutter by way of the penny "gaff" to becoming the most powerful provoker of mass-enthusiasm in the world. To have known it during its growth was to have experienced a strange enthusiastic urge towards expression within a definitely limited medium. There could be no speech.

That severe limitation bred workers with an intense impulse towards clarity of expression without words. The enthusiasts made a discovery. The motion picture without music was almost meaningless. Private viewing rooms where films were shown in cold silence were caustically known as "mortuaries." Then came the significant thing. Griffith insisted on a musical score selected phrase by phrase for his films, and music suddenly became the speech of the motion picture. It was sound completely fulfilling its purpose towards its partner; it was a perfect marriage of emotional stimulants towards a common purpose. The orchestrated score became a recognised part of every film of worth, and every cinema had its orchestra of sorts, every studio its private band of musicians to stimulate the actors in the mood of the scene.

The marriage of the moving scene to music emphasised the emotional appeal of the film; the feelings of the vast crowds in the cinemas were mass-attacked, their imaginations stirred almost violently. The discovery that thoughts, ideas, beliefs, themes, stories, could be expressed so powerfully without speech resulted in the definite recognition of a creed. The wordless film reaches the head through the heart, thought is evoked through emotion, and emotions range from laughter to tears. Is not ultimately the object of all art this evoking of thought through emotion?

That creed brought forth great artist-workers, Griffith, Pabst, Seastrom, Pommer, Lubitsch, Lang, Stroheim, Murnau, Pudovkin, Eisenstein, a score of Americans, and many Continentals. Magnificent films resulted; the cinema had become a giant, the film was all-conquering. Then came death, and the motion picture with speech. The barriers were down, the limitations, hence apparently the urge, had gone. Man's greatest invention for the communication of thought, speech, was now added to the screen.

It is perhaps foolish to call this change death. What really happened was divorce; the motion picture took another wife. Speech became the new partner, music was rejected.

The old ally is the one disembodied art untranslatable into words; it strikes at the emotions, disturbs our hearts, leaves us conscious of a soul. When music moves us, no language yet invented can translate what we feel. The new ally is primarily intellectual and economical. Music spoke to the heart in a wordless tongue, speech to the head in precise sounds. None denied that speech had come to stay, and for a time it became a very predominant partner. Films were advertised as "All-Talking." Music was as dead as the dodo, the orchestras were disbanded. Speech had brought a sudden static realism, directed at the intellect, that made music incongruous. This intense realism lay like a dead hand on the motion picture for a while, since thought, moving ever faster than speech, was slowed down.

The film makers knew all was not well. In the search for a return to the lost fluidity they substituted a mechanical mobility of the camera for the imaginative freedom induced in the spectator by the old partnership of music and moving picture. And very subtly music crept back to the hearth. It was a gentle sliding towards the old values, the recognition of the force of the emotional appeal.

No prophet could see where speech would lead the screen, but that new vistas were opening up was obvious. I felt it might be the British Daybreak, and said so in the press, though I hoped we should be waking early! I believed that the keepers of the British language in all its purity and


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comprehensiveness held the key to world domination in film material, but, alas, the thunder went west. America discovered her own amazing gift of economy in verbal expression, and with a closer knit vocabulary left us gasping. She saw with native instinct that the speed of the moving scene demanded an equally rapid speech.

And with the revolution we forgot the lessons of the silent film.

I am probably a lone voice crying in the valley when I ask the modernist to learn a little from the old days, and please for a return in part to the faith of the past, to the enthusiastic conviction that films speak through pictures to the heart rather than to the head, that by an appeal to the feelings of the audience you will reach thought. Griffith said bluntly, "I build my pictures, not word by word, but emotion by emotion." Therein lies the whole foundation of the moving picture. That is the first legacy of the silent film to the talking film.

It is a little dangerous to stress the emotional appeal at a British script conference. It is gently frozen out and labelled melodramatic, ham, hokum, or shush. All sentiment is generalised as sentimentality; we are scared of broad, Rabelaisian laughter or frank and outright drama; we scuttle like rabbits behind a smug reticence.

America has not forgotten. Emotionalism is at the making of all her many successes. "Smiling Thru" swept the world, Spencer Tracy becomes a God-fearing priest in "San Francisco," Clark Gable goes on his knees crying "I want to pray, what do I say?", Capra gives us a court scene in "Mr. Deeds" that touches us on the heart. Her gangster films are strong with emotional attack; the bad man is never all-bad, the hero never all-good. A British historical event, "The Charge of the Light Brigade," is coloured with a romance of the heart even in the very charge itself. Korda makes a British mounty something close to the simple man, with human feelings, rather than a puppet of crowns and panoply. Examine all the American successes and you will find this keen emotionalism woven into the structure, often daringly and bluntly. I am sure at the script reading it must sound very much like hokum, but how right they are. She has remembered that legacy of the silent days. Films appeal to the emotions first, the head afterwards. It is a legacy that guides them in the choice of material, of the content of the film.

The second legacy is equally fundamental. It relates to the form. To me it is the master-key to the secret of the screen. The tremendous urge to express one's self without words was a powerful spur to effort, to imagination, to artistry.

There is no limitation in the talking film, hence no urge to overcome difficulty. No urge predicates no enthusiasm to make discoveries. Every difficulty can be met by speech, so dialogue has become the backbone of the film. To gather the material of the script one reads merely the dialogue. It tells all. The old scripts had to encompass the details of every movement, every action, every gesture. That was motion picture necessity. Talk has relegated the visual factor to second place. We think far too much in terms of words, far too little in terms of picture. Do not misunderstand me. I do not undervalue speech. It is as profoundly important as music was to the silent film, but it is used disproportionately. The vital problem should be the unceasing search for visual methods to tell the story. Speech enters to economise the telling, but the intriguing play of the moving scene on the screen must ever be predominant.

Haven't you ever felt the desire whilst watching a film, to peep round that corner on the screen scene, to look outside that door, to steal into that crowd to see for yourself, all indications of the latent potentialities of screen form in the future. Hitchcock takes you round that corner sometimes. He has the intriguing gift of visual appeal in his films. You are aware keenly of his scene, only subconsciously aware of his dialogue. He uses that to economise and illuminate his scene, never to dominate it.

These then are the two legacies from the silent days—matter chosen primarily for appeal to the emotions, and method based primarily on visual appeal. Economise through speech, emphasise through music, but never lose grip on foundational values. I think these things will be accepted with greater faith in the days to come in our own native industry. Quota Acts may find a way to stability, and in this matter I am attracted by Miss Lejeune's hint of reciprocity, but the ultimate solution of all our difficulties is quality.

Where does the technician enter to help the light? This is no longer a one-man job. It is group work, and the technician must be permitted to move outside reticence and stake his claim to be in the van of the conflict. Collaboration of emotionalists is the British need, for we are working in an emotion-provoking medium. Cameraman, sound-expert, art-director, film-editor, director, producer, and not least story-writer, must collaborate unceasingly. A working group consisting of many individuals isolated in grim compartmental solitude, ploughing lone furrows, will continue to make films they never know till seen for the first time in the combined print in all their stark nakedness. It is then that the group is dismayed at the result of its joint effort.

You must be persistent in the claim to collaborate, but you must prove your right by untiring flogging of the imagination in the domain of your own special technique. It is for you to find new ways to amplify your form in order that it may illuminate the content you have, by collaboration, sincerely approved and accepted. Believe me, the technician who does this thing is sought after avidly. A common comment behind the scenes is that X is not as good as Y, he hasn't Y's imagination.

The field of imagination is infinite. Think of the work of the cameraman. He is first lieutenant to the director, and the eye of the audience. How vital is his aid if through advance collaboration he knows what the scene is designed to express visually, but knows more powerfully what the audience is to feel emotionally. His imagination will assuredly have done something towards a finer handling of his technical tools towards the desired end. Consider how lighting and composition made "The Informer" a thing of pure visual and emotional delight. The dramatic work of the camera-man was magnificently intensive.

The sound-expert knows in his heart that sound embraces speech, that the whole is greater than the part. Must sound always be bound hand and foot to realism? Why not use sound to strike dramatically at the emotions by distortion, reduction, or even sudden non-realistic removal? We have all experienced that absolute silence in the mind when absorbed in thought, though surrounded by the babel of the outer world. Something breaks that thought, and the sounds of life crash back to our mentality. Does not the neurotic human cry aloud that some simple sound shrieks to him with ear-splitting harshness; is not the key moving quietly in the cell door terrifying its grating horror to the condemned felon? Dare you make

(Continued at foot of page 92)
Examining rushes, "Journey's End," Hollywood

Filming in a French Studio with Percy Strong at camera


Discussing "Reveille" Betty Balfour, Stewart Rome and Frank Stanmore.

On location in Spain. Bernard Knowles at camera, Majorie Gaffney with script.
Film Projection

The increasing intricate technical problems in film productions call for a high degree of technical knowledge in the studio projectionist. But this is not enough. He may have mechanical skill, he may be an expert electrician, he may have the basic knowledge of physics necessary for the intelligent solution of his many current and recurrent technical problems, he may even be furnished with the best equipment money can buy and be working under conditions perfect for expert screen results and yet, unless he possesses a peculiar and intangible aptitude and flair for the art of projection, his results on the screen will be colourless and commonplace despite their theoretical perfection.

"Personality in Projection"

It has often been challenged that the personality of the projectionist cannot be built into his work as in the case of the cameraman. It certainly can be providing he has the ability to do so. I do not mean that we can go into a theatre employing two shifts of projectionists and determine by casual observation of the screen which projectionist is on duty. What I do mean is that if a projectionist with a natural aptitude for the art is in charge of or has supervision over a projection room he can, by developing the latent talent in his subordinates, build his personality into the picture just as definitely as the musical director builds his into the orchestra.

Expert projectionists cannot be turned out by any rule of thumb or classrooms. Practical experience alone is not enough. It is necessary to be something of a psychologist to understand and cope with the people and problems that one comes up against in a studio.

Of course, the basis of expert projection is intelligence, and it is a sad commentary on projection that the men in this branch of the business are, in some cases, still looked upon as "the man who turns the handle." "After all, he is only an operator who does a purely mechanical job and therefore cannot have any imagination"! It is indeed sad to think that conditions still exist which tend greatly to discourage the really intelligent man from entering this side of the craft as a means of livelihood. Isn't the screen "the proof of the pudding," and don't we owe to all the labour, care and money expended in the making of the "pudding" that it should be presented at its best?

Flicker.

A.C.T. Comments on Quota Proposals

The President of the Board of Trade has put forward tentative proposals for a new Quota Act and asked various sections of the trade for their criticisms. A.C.T. has submitted its views, of which the following is a summary.

The actual quota rates (20%, rising to 30% for renters; and 15%, rising to 25% for exhibitors) are welcomed, as is the cost test suggestion. The reservation is made, however, that such a test should be confined to a qualification of so much a foot. The suggested minimum of £15,000 in effect establishes a minimum footage of 6,000 for a quota film. A.C.T. feels that this is inadvisable, as discouraging the feature picture of less than this length, the production of which would save running time in programmes for shorts. A.C.T. further suggested that there should be a quality committee to view films costing less than £2 10/- per foot, which claim quota on the ground of special quality. Alternatively, if such a course is not pursued, the minimum cost should be £2 per foot. A.C.T. feels, too, that the proposed quota for shorts might be scaled a little higher, rising from £12|½ for renters and £7|½ for exhibitors to the same final quota as for features.

A.C.T. is strongly against films costing over £45,000 ranking as double quota, as (a) it would probably mean on balance the lessening of employment, and (b) it might encourage the production of extravagant "white elephant" pictures rather than good ones, and would reduce the actual number of pictures made. If all films were made in this category it would, in effect, halve renter's quota.

The Association stressed the view that any Advisory Committee appointed under the Act should be representative of all sections of the industry, and should include employees' organisations as well as, under the present Act, representatives of producers, renters and exhibitors.

It was also urged that any future Act should include a fair wages clause provision, similar to that inserted in Government contracts; and a stipulation that not more than one foreign technician be employed on films desiring to rank for quota. British technicians, it was said, have had to make the despised "quicker," and now that an effort is being made to ensure that quota films are good films, it should be ensured that British technicians actually work on such productions.

"Let the camera build up your sequence, for which the dialogue is the climax." Do not measure your lines by foot-rule, so many pages of talk, so much screen footage, a bit short, add another page of dialogue. That is surely not the way of the motion picture.

If you are also concerned with story, hold fast that your work is for Britain, but that to put your native land on the screen is not merely to photograph her scenery. It is to put there her inherent national quality, the outcome of a thousand years of growth, as strong in herman's but as in Kensington drawing-room. Only a Briton should do this, though that may be too great a thing to ask yet. Finally, write material to be told by the screen, not merely on it, a vastly different thing.

Despite all, no matter what else changes in screen history, one thing will stand immutable. This art in which you work is visual. It reaches to the mind through the emotions. Speech and music are vitally important to it, but ever and always this thing will remain the Art of the Moving Picture.
HARRY STRADLING
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Perhaps I should award the fullest number of good marks to laboratories. They are excellent. Their organisation is beyond reproach and the staff 100% competent.

Recently while working on the "KNIGHT WITHOUT ARMOUR" picture, I have had to shoot under all conditions of English weather—all the fifty-seven varieties. In spite of drizzle and bad visibility I was never dissatisfied with the results when they came from the laboratories. I confess that I have been filled with grim forebodings on occasions, but they turned out good prints every time. Dealing with low-key lighting stuff is pure jam to the British laboratorians—I claim no copyright for that word—and their work in this connection has been outstanding.

Technicians will be interested to know that

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A Dictionary of Film Language

Compiled by HENRY HARRIS

Juice
Used in a game by studio electricians. It has two potentials, "neg" and "pos." The object of the game is to find which is which. A high intensity arc is used for the deciding factor, teams are formed, bets are taken, great fun and excitement is caused by the result of terrific sparks and burned fingers. The best time of playing this amusing and enlightening game is when overtime starts.

Knocking
Affectionate criticism practiced by film companies about their competitors' product.

Laboratory
A sort of laundry used for the washing-out of cameramen's sins.

Moviola
Chaff-cutting machine.

Natural Actor
A term of reproach used among Film Stars.

Operator
Man who fights a losing battle in projection-box trying to focus rushes.

Projection-Room
A dark and gloomy room used as a canteen by property-men.

Quota
A very cheap method of transforming dramas into comedies, and comedies into inanities.

Receiver
A dining companion to a producer.

Script
A huge pad of paper with writing on. It is only read by property men during the lunch hour; it is also used for building-up furniture, etc.

Technician
The Forgotten Man.

Upstaging
A cunning ruse employed by many artistes to get the screen to themselves. It consists of a slow shuffle backwards towards the back of the set. This is rarely noticed by directors until the artist eventually disappears through a convenient fireplace. When this happens, the director cuts away to an Insert (see Insert).

Velocitator
A weird-looking gadget used for impressing visitors.

Wild-Camera
A state of exaltation peculiar to camera-crews, caused by being able to photograph without sound-men.

Wild-Camera
A state of exaltation peculiar to camera-crews, caused by being able to photograph without sound-men.

Xtras
Vocation greatly sought after by society people.

Yes-Men
Anyone who is not a director.

Zenith
Height of success gained by Film Company having their film screened by "The Film Society."
The Association of Cine-Technicians were privileged to receive (through the Congress of Peace and Friendship with the U.S.S.R.) an invitation to send two delegates to the Soviet Union for the May Day, 1937, Celebrations. After due deliberation, the General Council selected two of its members, who would be free for the four weeks beginning April 29th, during which they were to be the guests of the All-Union Council of the Trade Unions of the U.S.S.R.

The Delegates were Thorold Dickinson, Vice-President, and Alan Lawson. Their report on their experiences and conclusions is appended herewith.

A.C.T. hopes that similar facilities will be forthcoming from other countries, in order to enable British technicians to keep in contact with the general growth and development of film production. It is hoped to cover in the near future surveys of the film industry in France, Italy, America, India and Germany.
GENERAL SURVEY

A BRIEF survey of living conditions in the Soviet Union is necessary for the appreciation of the particular facts relating to the film industry which follow.

The U.S.S.R. is a vast territory covering nearly one-sixth of the earth’s surface and inhabited by 176,000,000 people. The annual increase of population averages 3,000,000. In the whole territory there is no unemployment in the sense of the term. There is work for all who are capable and willing to work. Every industry and profession has room for all the new blood available, and therefore any worker who is at any time of his life dissatisfied with his job, is encouraged to change it for another, just as soon as he is qualified to take up the new work of his choice.

More than one-third of the workers of the Soviet Union are women, and they receive the same advantages and rates of pay as men. Medical research watches their interests, and the only work denied them is that which is too heavy for them or otherwise physically unsuitable. But even here exceptions are often made. There are women commanders in the Red Army and Air Force. In our own profession there is a marked proportion of camerawomen, as well as women directors, editors, writers, art directors and sound and laboratory workers. All women workers receive special assistance during the times of pregnancy, childbirth, and the upbringing of their children, in order that their careers may be eased at these times but not renounced.

It must always be remembered that the Soviet Union has been, and will be for many years to come, passing through a state of emergency in more than one sense. The condition of workers and peasantry under the previous régime was in the main little better than bestial. Low wages, long hours, bad living conditions, heavy taxation, bred dullness, hopelessness, megritation and only rare articulate protest.

In 1912, 75% of the population of the Russian Empire between the ages of 8 and 50 were illiterate (percentage now reduced to 10), and the average earnings of the Russian worker were 20 rubles per month (£2 at the pre-war rate of exchange), instead of 320 rubles per month in 1937 (£13 at the present arbitrary rate), in addition to which countless benefits in rent, education, health, culture and sport are provided free or at nominal charges. Moreover, the inadequacy of housing in Moscow and other big towns was infinitely worse before the revolution than now. The census of 1912 revealed that 20% (3,000,000) of the population of the city of Moscow was accommodated in doss-houses, with an average of 10 persons to a room, while, regarding the sanitary arrangements, “a great many cases were noted where layers of excrement seven inches deep covered the floor of the latrine, rising higher than the seat.” The census takers reported that after half-an-hour in these dwellings they developed nausea and became ill.

Of the past twenty years since the October revolution, five were spent in driving out opponents of the new régime, five more in combating the consequent ravages of famine and disease, and in preparing the change-over from the easy-going agrarian policy of the past to the new industrial policy. And ten have been spent in the two greatest organised production drives in history. The third drive (or five year plan) is being designed at this moment and aims to be even more productive than its predecessors, based as it is on the existence of Soviet-made equipment, claiming to be as good as any that formerly came from abroad. But it will only be after the third or even fourth of these drives that living conditions will approach the level enjoyed by the average regularly employed workers of our own country.

Except in special cases, the working day is seven hours in industry. In farming it averages from nine to ten hours in summer and six in winter. Therefore, although a far greater proportion of the Russian family works and earns wages than the English, with the shorter working day family life and traditions are not destroyed, and they are not too tired to tackle the necessary house work. The domestic service problem is greater in Russia than in England for obvious reasons.

The State encourages to a striking degree the pursuit of culture, learning, sport and physical culture during leisure hours throughout the Soviet Union, with the result that every artistic, scientific and informative article put on the market is snapped up by eager buyers the moment it appears. Queues spring up for newspapers, theatre, opera and concert tickets, even for books and gramophone records. Shops are crowded throughout their opening hours (food shops in the suburbs are often open till midnight and in some cases they never close at all) for the times of workers’ shifts vary according to local conditions. 10,000 newspapers issue 35,000,000 copies of each issue and still fail to meet the demand. The highest daily circulation belongs to Pravda (Truth) which, we were told, sells 3,500,000 copies a day, which would give it the highest daily net sale in the world.

In all this territory there are no music halls: there are 724 theatres and circuses (registering 72,000,000 attendances last year) and 28,500 cinemas (registering over 850,000,000 attendances in 1936) against the 1,045 cinemas existing in 1917. It is obvious, therefore, that Lenin’s belief in the importance of the film in the lives of the people is being justified in general practice, and the influence of the cinema as the outstanding form of popular dramatic art cannot be overestimated.

But the film industry is one of the very few which have not fulfilled their allotted share of the five year plan.

FILM PRODUCTION

BEFORE THE REVOLUTION

In 1905 in Moscow the first film studio in Russia was opened, with one small stage about the size of the old silent studio at Teddington. Later, two studios were opened at Yalta, Crimean playground of the aristocracy, and in Kiev (1915) and Odessa (1916). But production did not prosper, and expansion was slow. One of the writers remembers seeing in a small cinema in Hamburg in 1923 (he had to pay more than a million marks for his seat) a pre-revolution Russian film entitled (as far as he can recall), “The Dancer of Peter The Great,” a costume picture of incredible banality. In story, technique, pictorial sense and dramatic expression it was the worst film he had seen.

In a country where ballet and opera were the diversions of the aristocracy and where progress even in these arts forms was not tolerated (hence the voluntary exile of Diaghileff and his ballet company in their pursuit of innovation), the development of a new art form of essentially popular appeal could hardly be expected. Only one director, Bauer by name, produced sufficiently progressive work for his influence to survive the revolution.
AFTER THE REVOLUTION

More than two years were to elapse after the October revolution of 1917 before conditions in the country eased sufficiently to allow of the serious pursuit of cinematography, and production at first was confined to newsreel work of a spasmodic nature.

But in August, 1919, Lenin issued a decree, nationalising the entire photo and cinema trade and industry of the RSFSR, chief republic of the Union, under the control of the People's Commissariat of Education. This example was followed in later years in the other republics of the Soviet Union. In the Ukraine the industry was nationalised in the same year, and the two studios in Kiev were re-opened. In 1922, the foreign interventionists having departed, the two studios at Yalta and the one at Odessa were re-opened. Co-operation among the republics began with Lunacharsky, RSFSR Commissar of Education, writing scenarios for the Ukrainian Cinema Committee.

In the remoter parts of the Union the founding of the industry was delayed, for instance in Soviet Armenia until 1923, in White Russia until 1926, and among the Uzbeks, Tadjiks and Turcomans until the early 1930's. In one or two republics, production has not yet been established.

The manufacture of film stock was not begun until 1931, and for several years after the revolution the country's resources did not allow of the import of any appreciable amount of foreign stock. So that necessity forced ingenious minds not only to use up all the short ends of negative and positive that were lying about in studios and laboratories, but also to construct their new films with a view to intercutting shots from old pre-revolutionary negatives with a minimum of newly-exposed negatives. In particular, Kuleshov, a pupil of the film director Bauer mentioned above and since the revolution a newsreel cameraman, was successful in proving by experiments of this kind that changing the order of shots in a film could, in effect, change the meaning intended to be conveyed by the shots themselves, especially when the new meaning could be clarified, both by the pruning of the existing shots and by the introduction of new shots designed to fit in among the old in particular selected places. This necessity speedily evolved a definite principle, after which progressive minds in western Europe and America were separately groping, handicapped by commercial conservatism and, paradoxically, by more abundant material resources. This principle, already being exploited in America by D. W. Griffith and in England by George Pearson, was carried towards its logical conclusion in Russia by force of famine and finally achieved international fame (under the much-abused term of montage) at the hands of Eisenstein in story films and Vertov in actuality and documentary films. These latter found it particularly applicable in expressing the violent conflicts of the revolution.

The stimulus of the new ideals inspired these and other directors, among whom Pudovkin, Dovzhenko, Kozintzev, Trunberg and Room may be mentioned, to create a series of masterpieces, unsurpassed in the history of the silent film.

At the beginning of 1925 only 14% of films shown in the country were of Soviet origin, but during that year production leapt ahead and 70 story (or "art") films and 70 documentaries were completed, with the result that in January, 1926, the percentage had risen to 50.

THE SOUND FILM

Silent film production continues to this day, but research into the recording of sound on film was in progress in 1926 under the direction of Tager, the young inventor of the Tagephon Sound System (variable density). The first sound was recorded on this system in August, 1929, for a newsreel, and the first Tagephon sound projector was in use at the end of the same year. Meanwhile another inventor, Shorin, began working on variable area recording. Both systems were installed in the studios of Moscow and Leningrad in 1930, and in 1931 the first full-length sound films were completed. Of these the most successful were Vertov's emotional documentary Enthusiasm, known in Russia as The Symphony of the Donbas; Kozintzev and Trauberg's silent film Ivan, with full musical score composed and conducted by Shostakovich; and, most celebrated of all, the first Russian talking picture The Road to Life, by Nikolai Ekk, a young director who had made only one film before. In the same year, 43 silent films were produced, and the first two Soviet film stock factories began operating, their output for the year being a little over 4,000,000 feet.

In the following year, 1932, the output of film stock rose to over 80,000,000 feet, and by the end of 1935 the annual figure was about 270,000,000 feet. The plan to produce by 1938 an annual quantity of 1,000,000,000 feet of film stock will certainly not be fulfilled, but it is safe to say that by now the Soviet Union is able to produce sufficient stock for its own requirements.

In general, the quality has not yet reached the highest standards achieved abroad, and the leading Soviet cameramen are allowed to use European and American stocks, when the subjects chosen demand delicate or exacting pictorial effects.

As soon as they had completed their silent picture commitments, the majority of the leading directors turned their attention to sound films. In 1932, Dovzhenko completed Ivan, a talking picture based on the building of the Dniepropres power station. In 1933, Pudovkin completed The Deserter, recently shown publicly in London. Then for the fiftieth anniversary of the founding of the

P. G. TAGER, Inventor of the Tagephon (Variable Density) Sound System - Pioneer Recording System of the U.S.S.R.

Professor GOLDOVSKY, Director of the Scientific Research Institute of the Cine and Photo Industry, Moscow.

The success of both these innovations was entirely eclipsed by the reception of * Chapayev*, a talking film of normal technique, directed by the brothers Vassiliev. This film combined all the ideological demands of the Soviet state with a high standard of entertainment. Only one film has since approached * Chapayev* in popular success, and that is one without a serious purpose, Alexandrov’s second musical comedy, *The Circus*, the demand for which has resulted in the record printing order of 800 copies.

## Production Routine

The excess of demand over supply in the Soviet Union has led in most industries to the adoption of mass-production methods; in a slaughter-house for example, the Chicago method is used, whereby each carcase is halved, not by one man, but by three, who stand on three platforms, one beside and below the level of the next, and as the carcase passes by, hanging from an overhead rail, the top man begins the job with his electric saw, the next man carries on at his convenient level, and the man at the lowest level completes the work.

In our film practice one may compare this method with the system of the camera crew of four technicians—one to light, one to operate, one to focus and one to load film, number shots and assist generally. In Russia a much slower tempo of film production prevails. Only two men serve each camera, of whom one lights and operates and the other does all the rest of the work. This is a far more satisfactory system, if time allows, as it does under normal Russian conditions.

In Russia the week consists of six days. Of each month the 6th, 12th, 18th, 24th and 30th days are rest days, and the five days before each rest day are working days of seven hours each. In film production, six hours are spent on the floor and half-an-hour is allowed before and after shooting for preparations and clearing up. Overtime is occasionally undertaken, but is discouraged by the arranging of easy schedules. Overtime rates are invariably double time for the first two hours and time-and-a-half after that. This in itself is discouraging to a producer working on an easy schedule and answerable to a government department for every kopeck he spends. Producers, directors and writers, moreover, are not entitled to any overtime allowance, the producer being given a premium if he completes a production within schedule, and the director and writer sharing one-and-a-half per cent. of the gross takings of the film. The record sum so shared between director and writer is one million rubles, which represents very roughly about £25,000 worth of most of our values.

This same sum appears to be the average cost of a full-length film, although costume pictures and the need of large crowds raises this figure considerably. A recent film of the revolution, involving a first-rate cast, several hundred troops and civilians, a large proportion of outdoor night scenes in a big exterior street set and a preponderance of fast action, cost 1,200,000 rubles. The same film would have cost in England every bit of £100,000 under a competent producer.

It is all the more remarkable with these low production costs that the average number of shooting days for a full-length film is three times as great as that of a similar film in our own country. Normally from seventy to a hundred days are considered adequate. There is no scaling of films to Grade A, Grade B, or “quickie” grades. Nor are there stars to be fitted with subjects, for that matter. Subjects are chosen with one eye on their cultural or political value, and once chosen they are written to the director’s taste and budgeted accordingly. We found no record of a director making more than one film a year, and in the more important subjects time is a matter for small consideration. For instance, the brothers Vassiliev began their research work for the film * Chapayev* early in 1932; after completing their researches they spent six months on writing the scenario. They began shooting exteriors during the summer of 1933, made the interior scenes during the winter, returned to their exterior location during the following summer, edited the film by the first week in October and presented the film publicly during the first week of November, 1934, more than two and a half years after receiving the assignment. And the result, to anyone familiar with the Russian language, was a good film—even exiles from the old régime have agreed to this.

The explanation of the low cost of production can only be found in an examination of the whole social system under which the state regulates all prices. Wages are low but competitive. If, then, they were inadequate, the essential merit which must exist in a successful film would be lacking owing to the discontent that would prevail among players and technicians. It is a romantic Bohemian fallacy to believe that bad living conditions permit the production of good creative work. They only hamper an artist or craftsman, who would be far more productive under better conditions.

Film finance in the rest of the world is a cross between a science and a racket. To finance a film in England money is bought and sold, middlemen take a five per cent commission for introducing “gold-prospectors” to “gold-mines,” banks charge six per cent for honouring post-dated bills; cigars, expensive office equipment, lavish automobiles, costly advertising add to the overhead costs; and film stars have to be persuaded by fat cheques to appear in pictures in order to persuade the jaded public to risk being fooled again.

In the U.S.S.R., stock exchanges and brokers and middlemen dealing in money have passed out of existence. There is only one bank in the Soviet Union. Every stick and stone in the country belongs in common to the people. And money is just a handy means of representing values from person to person. And so the cost of a film is what you see on the screen, not twenty or thirty per cent. more than what you see on the screen. Nor have the salaries been assessed on the understanding that everyone has taken as much as he could wring out of the budget (a) as a measure of his own importance to the film, and (b) as an insurance against the decrease of his own importance in subsequent films (if he ever gets any more chances).

The salaries have been assessed on the understanding that all power is in the hands of the people, that everyone has the right to education, to work, and to maintenance in sickness and in old age. Work is demanded from each according to his ability and is recompensed to each according to the work performed. All education, and full maintenance in sickness, convalescence, and old age, is supplied free to all. Human life is the most precious thing in the
land, and the rising of human life for personal gain or advancement, including crimes against the state, are the crimes most severely punished. Every child born in the Soviet Union has an equal chance of development and advancement; it is up to the individual to take advantage of his chances.

With this assurance of opportunity and this lack of the continual uncertainties of employment that we know, the need for high salaries and the perpetual comparisons of wealth have disappeared. Skilled employment in a film studio brings a salary averaging from 500 to 1100 rubles a month. A leading lighting cameraman (or woman) would receive up to 1500 rubles a month. Leading players under contract, writers or directors, receive up to 2000 rubles per month. The idea of a cameraman receiving five times the salary of his assistant is alien to the system. It is interesting to note that a crack railway engine-driver receives 1250 rubles per month, based on the fact that while he is at work several hundred human lives are entirely in his charge. Wages of the production staff and of the controllers of studio finances run parallel with the other departments. An expert who deserves to receive a salary of over £5,000 a year under a capitalist regime may receive up to 3000 rubles a month, but such a man is asked to contribute to the cost of the higher education of his children, that is to say, he is expected to pay them the stipend of some 300 rubles a month which the state normally pays to all students who continue to study after matriculating. House rent also is assessed at 10% of the income of the head of the family, nor can higher salaried workers receive better accommodation than their fellows. And super-tax is charged on higher incomes.

Thus it may be said that the system has not only levied up wages considerably, but also has levelled up their values to the payees. The possession of wealth can only come from exceptional creative ability, is heavily taxed (particularly on the death of the possessor) and can only purchase goods and the services of one domestic servant for house work only. Financial speculation does not exist and shareholding only in the case of state loans, hence unearned incomes do not exist either. Money has lost the importance it has for us and is regarded as merely a convenient representation of values within the country.

For this reason the above facts about the wage system in the Soviet film industry have an absolute significance in a study of the socialist system in its present state of evolution in the Soviet Union. But these facts have no comparative significance whatever in parallel relationship with the wage systems prevailing in other countries.

**STUDIOS**

**Location of Studios**

There are studios in ten cities in the Soviet Union for the production of "art" or "story" films, and this number includes two studios for the production of children's story films. Moscow has two, Kiev two, and Leningrad one, and the remainder are located at Odessa, Yalta, Tiflis, Erivan, Baku, Tashkent, Askabad and Stalinabad. A small group is in construction at Minsk. A large group of studios is now being built in the Caucasus and when this is completed all the more important Soviet films will be made there, the site having been chosen for its excellent weather conditions and varied scenery. The dubbing of foreign films will be carried out at this studio. We visited two film factories, the largest of all, the Moscow Film Factory, known as Mosfilm, and Kiev. (All places of production, irrespective of industry, are called "factories").

**Mosfilm**

On our arrival at Mosfilm we were met by the vice-chairman of the studios, Bobitsky, who greeted us in the name of the workers of Mosfilm, while the technical director, Moritz, who speaks English, showed us around the plant.

These studios are situated in a suburb of Moscow, about 15 minutes' bus ride from the centre of the city. There are extensive grounds for exteriors, large blocks of flats for the workers, and a large park for recreation. Built in 1927, in the modern German architectural style, the factory consists of five stages, their average size being 135 by 90 ft., but the largest being 175 by 100 ft. At the moment they are building five new sound stages which will include a special back projection stage.

The stages that we saw were not soundproofed in the method used by English or American studios. Damping is still achieved by the hanging of drapes from the roof, the walls being bare brickwork. Lighting equipment is variable, there being both "arc" and "inkie" lamps of modern and old design. Arcs—40, 80, 100, 160 amps. spots and suns and overheads. Inkies—500 watt (new type similar to American design), 100 watt single overhead units and also 6 and 8 light banks, 100 watt projectors (old type, same size as English 2.3 Kw projectors), 100 watt towers, 2 Kw spots and projectors (new type) and 5 Kw spots and projectors. All panels and switch gear are on the roof gantries (English type of plugs and switching). The spot-rail system is of the old wooden shoulder type. Large floor tanks are built in the largest stage.

The buildings include a power house with an output of 60,000 kilowatts (breaking down 6,600 volts by transformers for A.C. and rectifiers for D.C.); a lamp repair and manufacture shop; a machine shop for camera and sound repairs and the manufacture of sound cameras, etc., a carpenters shop, etc., and separate laboratories for studio and release work with an adjacent central loading room for both sound and picture cameras.

Every department has its own rest room and there is a library for general use. There is a first-aid medical clinic, where minor operations, dental and optical treatment can be carried out. There are four restaurants and one special diet restaurant which, like the clinic, are supervised by the Factory Committee of the Trade Union. 2000 persons are employed here all the year round.

The studio publishes its own paper, six issues a month, which deals with trade union, organisational and technical matters.

**Sound Crew and Equipment**

The sound crew on a production consists of a mixer, sound camera-operator, boom operator and two sound technicians for maintenance and research. The Shorin sound system is used (variable area noiseless). Each stage has a unit enclosed in a booth (mixer and sound camera). The latest sound camera incorporates a new feature—3 speeds: 16, 24 and 32 frames per second. Microphones are of the ribbon and condenser type (of Soviet make). The boom is of a new type (of Soviet make), all movements—tilt, pan and raise—being gear-turned with a quick release for rapid movement. Re-recording is done in a special sound-proofed studio; the re-recorders in use are
the two-channel type (five-channel machines are being made and will shortly be installed). No women are at present employed in the sound department.

Camera Crew and Equipment

On each production the crew consists of the cameraman, who both lights and operates, and an assistant. When more than one camera is used, extra staff are drafted on to the production at the rate of two persons per camera. At these studios there are 5 camera-women and 9 women assistants, who all have the same wages and conditions as the men. The staff composition of the trick department is the same as for the camera department.

The cameras are of American, French and Soviet origin. America: N. C. Mitchell in a baby blimp (recently imported) and numerous Bell & Howells, which are used for trick, model and cartoon work. France: Super Parvos (not the very latest model) on chariots; Debrie 400 ft. metal type, which are used for odd shots and model work. The Soviet-made cameras are being tested and brought up to date with the idea of supplying all future requirements.

Dollies, Cranes

Dollies are of the underslung motor chassis type and of the three-wheel type (of Soviet make). One crane of Soviet make (of the type used in America) of welded tubular steel with electric controls, 8-metre raise, mounted on a pneumatic dolly. Several small rail-run trucks for model and miniature work.

Process and Trick Equipment

A process similar to Dunning was being used for the new Ptushko fantasy film. Back-projection equipment, American background projector (140 amps), Soviet celluloid screen (the loss of light is 8% less than with ground glass screens). We asked if 140 amps was sufficient, and were assured that it was. (At a later date we saw films which contained shots taken under these conditions and we are of the opinion that the results compare most favourably with any that we have seen from any country). Model table of high precision workmanship (Soviet made) for filling in backgrounds, roofs and skies, etc.

Cutting Room and Equipment

There are four viewing theatres which are under the control of the cutting rooms. About 12 different rooms for the various stages of positive editing are ranged on either side of a passage, the door to which is guarded by a fireman throughout the working hours. The equipment is very varied in age and design. Moviolas and viewing machines similar to the Editola are used by the editors. Four-way synchronisers are installed, some by Maurice of Paris, and others of a like kind but of Soviet manufacture. Of recent years the position of editor has been introduced into the industry, and it is now considered a rarity for a Russian director physically to edit his own films.

Production Staff

Each production staff consists of one or two assistant directors, one production manager with one or two assistants, one special assistant who is responsible for the calling of artistes, assembly of costumes, etc., and one floor secretary for continuity.

Set Construction.

This does not materially differ in method from European practice. We saw an elaborate exterior set of old Moscow, built on the exterior lot for the current production, Slenka Razin. It involved an artificial lake, representing part of the Moscow River, crossed by a bridge of the period.
The whole set was guarded by a watchman with rifle and fixed bayonet.

Unfortunately, when we toured round the studios all shooting on art films had finished for the day, but we gathered that shooting procedure was very similar to that of England and America. Last year Mosfilm produced 13 films, but they have planned to produce 35 annually as soon as their new studios are complete. This year one production will be in colour. They will also produce two colour shorts as well as a number of colour cartoons. Directors working there at the moment are Pudovkin, who is finishing and personally editing his second sound film, The Happiest, for the November Celebrations; Preobrajenska, the woman director of Stenka Razin; and Alexandrov, who has just begun a musical comedy based on the opening of the Moscow-Volga Canal.

**Kiev (Ukraine)**

These studios are controlled by the Ukrainian Film Trust and were built in 1928 with their own laboratories, workers' flats, etc. There are three stages, two of which are of the silent type with drapes as at Mosfilm; the third has only recently been built and is properly sound proofed. 1000 persons are employed at this "factory." They include 14 directors (1 of whom is a woman), and 26 cameramen (4 of whom are women). Similar equipment is used here to that at Mosfilm, and both Shorin and Tager sound systems are installed. The working conditions are similar to those in Moscow. These studios have an output of approximately 10 pictures per year; all art films are made in two versions, *i.e.* in the Ukrainian language and in Russian. At present Dovzhenko is completing there his production of Shekorce in time for the November Celebrations.

As in our own country, the Soviet film industry is as yet too small to be able to maintain players on a full-time contract or to train them exclusively for the cinema. All regular players, therefore, share their time between the stage and the screen, and the same competition for their services exists as with us, except that their salaries are regulated by ability and not by demand. Playing in studios by day and on the stage at night is discouraged (and often avoided by short-term contracts) but when it has to exist, the players draw full salaries for both occupa-

**NEWSREELS**

The control of newsreel (or chronicle) and documentary films is vested in the Newsreel (or Chronicle) Film Trust. This Trust has 18 sectional depots throughout the U.S.S.R., each of which (except the Moscow Depot) is responsible for one newsreel issue per month. Moscow issues five such reels per month (one per week) in addition to which it issues:—

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As well as these various newsreels, the Moscow section are responsible annually for the making of 12 full-length documentary films devoted to historical subjects, and industrial and agricultural surveys. 100 short documentary films will also be produced by this section during the next twelve months. To cope with this work a special studio is being built, which will contain four stages and its own laboratories, to be ready by the end of this year.
Newsreel Procedure

In the U.S.S.R. the newsreel cameramen enjoy much more freedom than in England, and there seem to be no restrictions of any kind on their activities. When news cameramen cover meetings (either indoor or outdoor), if extra light is wanted generator lorries and arcs are supplied. At such meetings the cameraman is free to go on to the platform and set up his camera and lights to take close-ups whilst the speeches are being made. Thus intimate records of all important events are produced, the momentary inconveniences of their production being suffered by those present on behalf of their absent contemporaries and of posterity. Screen credit is given to cameramen for any items included in newsreels, the credit being printed at the bottom of the introductory title to the item. Most news items take the form of a story, the cameraman covering the subject being responsible for the arrangement, direction, shooting and instructions for cutting. Most subjects are covered by silent cameras, the sound taking the form of commentary, and for this reason Eyemo cameras seem to be most generally used, a particular example being the excellent Spanish newsreel which is issued every fortnight in two reels, from material supplied by two Soviet news cameramen working with two Eyemos.

An interesting aspect of the editing of newsreels is demonstrated by the use of the material shot during the May Day processions in Moscow. On May 3rd the newsreel theaters and larger cinemas were showing a short reel of the processions, including a section of Voroshilov's speech to the troops. A few days later a fuller version of this subject was issued for release in more distant parts of the Soviet Union. Later a foreign version was issued without speech on the sound track and with titles in various foreign languages. Each of these versions used different material and varying proportions of material, chosen for its effect on the varying audiences for which it was intended.

Equipment

Combined sound and picture cameras, Debric (400 ft. metal type) with the Tamar Sound System (American). Small vans are used, as the apparatus is light and portable, in contrast to the sound trucks known in England. As a large percentage of material is covered either by Eyemos or Debrics, very little "actual" sound appears to be used. The new Soviet newsreel is beginning to make its appearance but only a few are available at the present time.

Crews

Sound units—one cameraman (or woman), one mixer and one general assistant. Otherwise there is either one man or woman per camera. In Moscow alone there are five newsreel camerawomen. (We were unable to get any figures for the rest of the U.S.S.R.).

Salaries in newsreel work are very much the same as in studio work. We heard of one reliable cameraman who was sent away to a distant place to cover certain incidents and with carte blanche to get any other "stories" he found interesting. A month later he returned with a total of 26 usable "stories." He was awarded 100 rubles premium per story, and as his regular salary was 1200 rubles per month, he received for his month's work 3800 rubles.

Laboratories

The newsreels have their own special laboratories, as elsewhere. Debric developing machines, Bell & Howell and Debric printers are used, there being little or no difference from those of England. The service of these laboratories is, on the whole, not so quick as laboratory service in England.

Stock

Orthochromatic, Panchromatic and S.S. Pan are used, depending upon the subject to be covered. The great majority of the stock used by the newsreel trust is manufactured in the Soviet Union.

GENERAL PROCESSING LABORATORIES

Every studio has a laboratory attached to it which is responsible for all the negative development, rushes and optical work, etc. There are separate labs. for release prints, these being called "copy factories." A seven-hour day is worked in all labs., and conditions are the same as in studios. Those doing the most arduous work get longer holidays.

As the rush service is seven hours, the methods of working, the crews and machines, the solutions, etc., are similar to those in any good laboratory elsewhere. Debric and Bell & Howell machines with sensitometric control, and now the new Soviet developing and printing machines, which are rapidly being produced, are used in all the "factories" and studio labs.
MANUFACTURE OF APPARATUS IN THE U.S.S.R.

The most backward part of the Soviet Film Industry is the manufacture of apparatus, a fact which is due to the lack of trained mechanics proficient in this work. Now that this shortage is being gradually reduced, local manufacture is correspondingly increasing. Why do they not import more apparatus? The Soviet government has imported the minimum necessary to keep the industry supplied for the time being. But their established policy is to make their own self-supporting both industrially and agriculturally, since they possess an abundance of raw materials, and they say they do not regret a temporary privation in view of the promise of the future.

Cinema Equipment

This is probably the worst side of the industry. The projectors are bad and the sound reproduction poor. There are a number of exceptions to this, but, generally speaking, there is a lot of headway to be made in this field. Where the projectors are of a very old type, the image dances on the screen, causing eye-strain in the spectator, and the sound is usually projected at far too high a level, making the loud-speakers blast and rattle. Whilst we were at the Research Institute in Moscow, we saw the new type of projector that is going into production, and this model is a robust and thoroughly workmanlike job.

Portable Apparatus for Exhibition

16 mm. and 35 mm. portable sound projectors of Soviet manufacture were seen and judged to be of adequate design and construction.

Studio Lamps

These are now being modernised; more attention to light efficiency is necessary and the lamp-housing could be smaller with advantage. Spotrail systems require modernising, and either the hanging gantry type or the tubular metal system should be introduced, so as to give more floor space.

Camera and Associated Equipment

More attention has been paid to this side of the industry. All the apparatus, with a few minor exceptions, is well designed and made, the camera crane and model table at Mosfilm being notable examples.

Sound Equipment

The old apparatus has nearly all been replaced by new equipment of modern Soviet design. The workmanship is as good as the design, and the equipment is easy and efficient in operation.

FILM TECHNICAL RESEARCH WORK

In each city where there is a studio or film manufacturing (raw stock) plant there is also a technical research institute. The combined institutes are responsible for the monthly publication of a film technical journal, which is not unlike the Journal of the S.M.P.E. A copy of this journal is available in the A.C.T. office.

The work of these institutes covers all the various branches of the film and photo industry. The chief institute is NIKFI, the Scientific Research Institute of the Film and Photo Industry, which occupies the premises in Moscow of the first film studio, opened in 1903. The two foremost Soviet sound experts, Storm and Tager, have their experimental laboratories here. The director is Professor E. M. Goldovsky, who very kindly showed us round and introduced us to the heads of the various departments. 400 persons are employed and they work under conditions similar to those existing in the firm "factories." The library houses 8000 technical books in various languages and supports regular subscriptions to technical journals of all countries.

Research Work in progress at Nikfi

(1) High-speed stereo-photography for examination of working machinery, etc.; (2) the new studio and newsreel cameras; (3) the new projector shortly to be installed in the cinemas; (4) Back-projection machines (a new line to replace the American machines in use at present); (5) Sound recording, including cameras—Professor Tager showed us his experiments in connection with new stereo push-pull variable density sound track and with new types of recording light valves, hot cathode tubes, etc.; (6) Television research under the direction of Professor Tager, e.g., cathode ray tubes, photo mosaics, etc.

Other experts are engaged on photographic research in X-ray and microphotography, and in work on all types of photographic emulsions for film and plates. This work is being done to bring the Soviet film stock into line with the consistency of American stocks. Some of the stock made here is very good; we saw a film, The Return of Maxim, made partly on American and partly on Soviet stock, there being no apparent change in the pictorial quality of the film, the photography of which (by Moskvin) was particularly good. The negative stock used for newsreel work is not very consistent but positive stock is good. Colour work is being carried on in various methods, but at the moment there is no practical method in use for story films. We saw in the hand some trick and puppet films which have very good three-colour images, taken by the three-colour filter three-frame exposure method. But this method is obviously not practical for story films. Colour still-photography (three-colour) is good and the prints show no sign of fringing.

Portable Sound Projector, 35 m.m.
The Higher State Institute of Cinematography announces that vacancies for pupils occur in the following Faculties during the Academic Year 1937-38:

**Faculty of (Camera) Operative Application**, specialising in:
1. Films of Artistic Type.
2. Documentary Films.
3. Technical and Educational Films.

(Five Year Course)
All applicants must have obtained Matriculation or its equivalent. Knowledge of photography and drawing is expected, and the candidate should be acquainted with the film productions and applied art of the past few years.

**Faculty of Scenario Writing**
(Two and a half years' Course)
All applicants must have had higher education in literature and art, or have acquired a knowledge of these subjects and have published an original work, or have written and produced a play or a film.

**Faculty of Direction**
(Two years' Course, comprising two years' academic work and a practical test in charge of a production).
Applicants must have had a higher education in art, or the equivalent, and must have had an established status in production of either theatre or cinema for at least two years.

**Faculty for Candidates for Academic posts in the following subjects:**
1. History and Theory of Cinema.
2. Cinema Direction.

(Three years' Course, including writing of thesis).
Applicants must have higher education in art, and not less than two years' specialised work corresponding to the selected subject.
Applicants for all Faculties may be from 17-35 years of age.
Applications received June 20-Aug. 1.
Entrance Examinations, August 1. Courses begin September 1.
All successful candidates are guaranteed monetary aid to pursue their studies, and hostels are provided for Provincial Students. (These do not guarantee accommodation for members of students' families).

All enquiries to be made to the Office of the Institute:
442 Chaussée Leningrad, MOSCOW.

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**TRAINING COURSES**

In all the towns in which the more important studios are situated there is to be found some organisation for the training of film directors, writers and cameramen, and the above advertisement, taken from a Russian trade paper, clearly shows the importance attached to these crafts in the Soviet Union. The Institute in Moscow is the most ambitious of these organisations, and we were privileged to spend an hour there and learn something of its methods.

The building which houses the institute was in Tsarist times the most expensive restaurant in Moscow and a favourite haunt of Rasputin. After the revolution it was turned into a film studio, but the building of the Mosfilm plant made the present structure available for other purposes, and it was soon put to its present admirable use by transferring from smaller quarters the Film Technical School (founded in 1919) and expanding the school into an Institute with far greater scope for the thorough training of students.

At present there are 150 male and female camera students. There are 12 student-directors in their first year and 15 in their second year. Of the student-scenarists there are 18 in their first year and 14 in their second. Beside this, the students who recently finished Eisenstein's four-year course in film direction are now engaged in completing their theses before graduating.

We examined a few of the theses which have already been submitted by students of this course (one of whom, Mr. H. P. J. Marshall, an A.C.T. member, is the only foreigner to date who has studied in any of the Soviet Film Institutes) and we were greatly impressed by the organised thoroughness, the wide range of study and the practical expertise which Eisenstein has obviously communicated to, and with which he has enthused, his pupils. It was a real pleasure to study these portfolios, each of which was made up, among other things, of:

1. A synopsis of the story chosen (there was no limit to the choice of story).
2. A study of the geographical, historical and social background of the story.
3. A scrap-book of newspaper cuttings, photographs, sketches, etc., illustrating any aspect of the subject which has stimulated the student, i.e., sources of his designs and researches.
4. Designs, conceived and if possible executed by the student, of all the sets, costumes and make-up requirements.
5. A shooting script, worked out to the smallest detail, with alongside each shot a sketch indicating the camera set-up required.
6. A plan of each set, marked in inks of different colours, with the movements of each character involved and every camera position and angle number.

Each portfolio reflected at once the influence of the master and the individuality of the pupil. Each was a practical demonstration of four years of fruitful study and a promise of a future standard of direction which, badly needed as it is, should earn for its innovator the gratitude of the entire industry.

The camera students were studying political economy when we arrived. The range of their course includes practical instruction in drawing, painting, still photography (each is supplied with the Soviet equivalent of the Leica.
camera and much of their work with these cameras is first-rate) and the whole of movie camera technique—emulsions, sensitometry, colour, lighting, processing, etc. The studio of the Institute is equipped professionally throughout, and instruction is given both by permanent members of the staff, and by the best of the practising cameramen as their assignments permit.

All the courses in the Institute involve practical work in normal film studios. For instance, Mosfilm are at present giving practical experience to 35 students who have not yet qualified. (Some of the Eisenstein students did their practical work as assistants to Pudovkin on The Deserter.) All students who qualify are immediately assigned to permanent jobs in an industry which can absorb all the new blood available. Kiev Studios are now employing 18 of last year's graduates from the Kiev Institute. Like all students who have matriculated from school, film students receive a monthly stipend (student-directors receive 350 rubles a month) and are guaranteed a room for living and sleeping in one of the blocks of students' apartments on the outskirts of the city.

DISTRIBUTION

Like all trading that is not co-operative, the film industry and the film distributing trade are entirely in the hands of the state, the controlling body being the All-Union Soviet Film Direction, under the management of Boris Shumiatsky. The few foreign films which are imported for general exhibition pass through the same channels as the home product. The only foreign films which we found in circulation during our visit were Modern Times and The Invisible Man, the former titled, and the latter, dubbed, into the necessary Russian languages.

The Film Section of the Central Committee on Art (also under Shumiatsky's direction) which is closely associated with the government, regulates the planning of subjects as well as their subsequent execution. It has power over the choice of subjects, the right to examine and veto the development of subjects in production, and complete censorship control of the finished products. When the committee has passed a film with the approval of the government, each film is given a private performance before the critics and leading members (creative and technical) of the industry in Moscow, either in the Dom Kino (House of the Cinema) which is the central club of the film section of the Trade Union, or in one of the principal cinemas of the city. As the whole trend of production in Russia is cultural in the broadest sense, or one might term it entertainingly informative (the jam is there but the pill shows through the jam every time), the guests at such a performance include representatives of the particular enterprise dealt with in the film.

We were present at such a "trade show" of the film The Return of Maxim (second of a trilogy of stories about an imaginary but typical revolutionary of Tsarist times), which has been directed by Kozintsev and Traub. In this case it was found that the period of the subject coincided with the foundation of Pravda, and the actual date of the film's release could coincide with the twenty-fifth anniversary of the founding of the paper. So the story was written around the early struggles to print and distribute the journal; and the performance was attended by the present editorial staff. The show took place at the new First Cinema, the latest and most attractive of Moscow Cinemas, with about 1200 seats (wooden tip-up) all on one floor. The regular nine p.m. performance had been cancelled. When we arrived, the large vestibule and the dance hall (beside the auditorium) and the reading and smoking rooms on the floor above were all crowded with interesting personalities. The showing of the film was preceded by the ubiquitous newsreel of May Day, which provoked the usual reactions of favour for Stalin and his colleagues and the Spanish delegates, and disfavour tempered with amusement for the Japanese military attaches. Our comments on the film itself will be found elsewhere.

The number of new "art" (or story) films available for distribution increases annually, but at present is not far in excess of sixty, while the number of new full-length documentaries cannot exceed ten. Very few new silent films are being produced. These figures are far lower than those aimed at in the second five-year plan, whose period finishes at the end of 1937.

These films are all available both in Russian and in the language of their republic of origin. The distribution chiefs of each of the eleven republics of the Union view the films and decide how many copies of each they require for their territory and whether (if any film is in a language foreign to their territory) the demand will be great enough to justify dubbing. For it is the aim to make every enterprise self-supporting, and subsidies are only permitted after rigorous examination of the situation involved. It is interesting to note that of the gross receipts of film exhibition, the theatres keep 70%, the production concern gets 19%, and the distribution concern receives 10%. In Great Britain the average percentage is very much the same, when the whole programme is taken into account. The record gross receipts from the exhibition of one film in the Soviet Union reached 66,000,000 rubles and amounted to an approximate return of 5,000,000 of its cost. This is very roughly the equivalent in our money of a film costing £30,000 and grossing £1,500,000, of which producer and distributor share £450,000.

EXHIBITION

By the end of 1937 (according to the second five-year plan) the number of permanent and travelling cinemas in the Soviet Union should be 70,000. But in fact it will be considerably less than half that number.

In 1917 there were 1095 cinemas in the Russian Empire, with a total of 364,000 seats. Until 1928, by which time the number of cinemas had increased to 3000, all projectors were of foreign make. In that year Soviet-made projectors began to be installed and soon the import of these goods ceased. By July, 1934, there were 26,160 cinemas installed in town and country theatres, in clubs and in travelling cinema shows, with a seating capacity of 4,932,000 and an annual turnover of 529,000,000 rubles. In the attempt to cope with the preponderant farming and peasant population (three persons work in farming to every one who works in industry) the number of travelling cinemas exceeds that of permanent buildings by some 1500, but these possess only 30% of the total seating in the country.

By the end of 1936 the number of cinemas had only risen to 28,600 with an annual attendance of 650,000,000, or less than four attendances per head of population per year. To compare with the present annual attendance in Great Britain, the annual attendance in Russia must reach 3,650,000,000 or nearly six times as many as at present.
By the time this happens (there seems to be nothing in 
existence to prevent it) the price of seats will have 
dropped from their present range of from one to four rubles to a few 
kopecks, and salaries throughout the country will have 
risen by two or three times. For otherwise the profits 
from this industry would be soaring to astronomical propor-
tions, and the money (given similar growth in other 
industries) would be rotting with disuse.

The average seating capacity of permanent cinemas is 
300 and of travelling cinemas 120. The latter cover con-
siderable distances and do not give shows every day. The 
total number of cinemas equipped with sound projection 
is not available. However, deducing from statistics since 
1932, when the manufacture of sound projectors began, one 
can estimate the existence to date of some 3000 stationary 
installations and about 5000 portable installations, playing 
to about 1,500,000 seats. All cinemas are of the utmost 
simplicity in design, bare of any kind of decoration.

First run release is simultaneous in all big towns 
throughout the country. In both Moscow and Leningrad 
there are half-a-dozen or more first-run houses. The 
single feature programme is universal, and in most cases 
only the feature is shown; occasionally a newsreel is shown 
as well. In these cities performances in the more im-
portant theatres are successive from noon to midnight, 
sometimes as many as nine or ten in that time, with a 
short interval between shows for clearing the auditorium. 

The new audience meanwhile is assembling in the vestibule, 
where the habit is growing of providing an entertainment 
by a jazz band for some 40 minutes before the next film 
performance. The newer cinemas have a special jazz 
hall for this "side show," as large as the cinema hall itself. 

These buildings also have a reading and smoking room 
with books, papers and magazines of all sorts, in charge of 
a librarian. On the walls of this reading-room are hung 
exhibitions of paintings and drawings. Chess and draughts 
tables are also provided, for these games are taught in 
school and are embedded in the national life. In addition, 
some of the bigger cinemas have a dance hall with buffets 
and bars in the basement, where on rest days and holidays 
they can spend further hours, all for the one admission price. 

These cinemas, in fact, supplement the trade union clubs in 
providing leisure occupation in the cities where congestion 
makes it irksome to spend many evenings at home.

The two newsreel cinemas in Moscow seat about 250 
people each and give a performance every half-hour from 
11 a.m. till midnight; 25 minutes of film and five minutes 
for change of audience. The prices are 50 kopecks, 75 
kopecks and 1 ruble. We saw a programme which con-
sisted of a full reel of May Day celebrations (with the same 
audience reactions as at the trade show) and 15 minutes 
of the 17th fortnightly issue of Spanish News, which was a 
grand job of film reporting, done by the two Russian 
cameramen working with Evemos referred to above.

Interiors, long and close, of hospitals and wrecked buildings, 
exterior in action, close-ups of instruction plates printed 
in German inside captured armoured cars—all manner of 
tricky shots efficiently executed and made with a definite 
continuity in mind.

The sound in all the cinemas we visited was projected 
at far too high a volume. It seems to be a national habit 
and is very trying to the alien ear, besides tending to show 
up the deficiencies in recording and reproduction, which 
in the latter case are particularly plentiful. Picture 
projection, except in the crack cinemas, is equally faulty; 
bad light, flicker, hotspots surrounded by tired browns, are 
continual. Often the loud-speaker stands below the 
screen and disembodies sound from sight. It is difficult 
to estimate which experience is the more trying; to watch 
a good picture being ruined by bad projection or to sit 
through a dull and uninspired picture being rendered un-
telligible by the same treatment.

Just as the newsreel camera is glued to the public life 
of the people, so the projector porthole peeps down into 
every place of assembly—the lecture room of a tractor 
factory, the hall of a town clinic; even the speech hall of 
the Lenin Museum gives two or three times daily a film 
showing the movie records of Lenin and his relation with 
the latest developments in the Soviet Union. The use 
of the film in educational and cultural and specialised 
technical demonstration is spreading as fast as the manu-
facture of apparatus will permit. The film is the ever-
developing link which ignores the barriers of language and 
binds the millions of Soviet citizens to stick to their chosen 
purpose and to keep their enthusiasm stoked high.

TRADE UNION

The trade union to which all members of the film 
industry are eligible for membership is called the Film 
and Photo Workers' Union and has its headquarters in the 
Palace of Labour in Moscow. There we met the Presidium 
(the annually-elected and paid organising committee) of 
the union, with whom we had a very informative interview, 
after which they arranged for us to visit the various people 
and buildings in whom and in which we were particularly 
interested.

The union at the time of the last census (October 1936) 
had 63,200 members, comprising 88.8% of the members of 
the following industries, for all of which it caters collec-
tively—the manufacture of apparatus and of positive and 
negative stock for still and motion photography; the 
production and distribution of still and motion pictures; 
and the exhibition of motion pictures. Membership of the 
film industry comprises everyone from the director of an 
organisation and the actors, creative and technical experts, 
to the cleaners, apprentices and allied workers in the 
canteens.

The Presidium consists of four members—the President, 
Blyakhin, a writer by profession; the General Secretary, 
Nashelsky, a trained trade union organiser; the General
Inspector, Solomonik, formerly on a studio production staff; and Otsep, a composer who represents the cultural activities of the union.

In direct contact with the Presidium, and like it elected yearly by the annual General Congress, works the Central Committee of 15 members unpaid, which meets at least every six months and which co-opts to its meetings a number of the most active members of the union. The officers and members of all trade union committees are elected by secret ballot. Half of the Central Committee is elected by the creative workers in the union to represent their views, and the other half is elected by and represents the technical workers in the union. Each "factory" has its own Factory Committee, headed by its own Presidium (of whom those members are paid whose duties occupy their full time, i.e. in the larger factories) organised in the same manner as the Central Committee and Presidium.

The statistics for 1936 show that the union in that year elected to carry out its general and local functions 2719 officials, 1999 collectors of subscriptions, 1510 inspectors and 4552 cultural organisers and instructors, all from the ranks of the union. The vast majority of these officers perform their duties in their spare time and are unpaid; only those are paid whose union job occupies their entire working week. All are eligible for re-election at the end of their year of office, but this is equally open to the choice of the individual officer. The function of the inspector is to keep an active watch on the living and working conditions of the members in his own factory. The cultural officers organise lectures, demonstrations, and so on for any member voluntarily to attend in leisure periods. 23,106 in 1936 attended the following numbers of study groups which were organised in 70% of the factories:— 504 political, 348 military, 225 technical, 154 general educational, 46 dramatic, 34 foreign language. These groups are organised according to voluntary demand, and their numbers make an interesting comparison of the interests of a representative group of Russian workers whose jobs cover a wide range of mental and physical activity.

In the film studios the union has 12,000 members. Of the odd 11.2% of workers who are not members, the great majority are ineligible because they have not yet spent three months in the industry, after which period eligibility is automatic. But membership is entirely voluntary, and there is always a proportion of workers in every country who cannot recognise the advantages of joining a union, until they need the immediate material assistance that unity alone can provide.

The union is financed in the following manner. Each member pays 1% of his income as his subscription to the union. In addition, each factory pays to the central fund of the union a sum equivalent to 4-3% of the total sum paid out in wages, and also to the Factory Committee a sum equivalent to 3% of the total wage bill.

One of the principal objects of this central fund is to provide health services for its members, additional to those provided free by the state, these additions being designed as luxuries for the greater comfort of the workers. They include two sanatoriums, three houses of rest (for convalescents and those suffering from overwork) and one mountain camp in the Caucasus. During 1936 the union dealt with 5500 adult, and 823 child, sanatorium cases.

Diagram illustrating the interrelation of committees of trade unions within the Soviet film industry.

The accompanying chart shows the method of contact between the factory and the central organisation. The creative section comprises in film production film directors, writers, cameramen, art directors, the recording section of the sound department, editors, and assistant directors. The rest of the studio staff, financial, administrative, technical, maintenance and general services comprise the technical section. In the event of a dispute between the two sections within a particular studio which cannot satisfactorily be settled within the factory committee, the two sections can separately refer their problems to the appropriate sections of the Central Committee, which can then if necessary meet as one committee and bring pressure to bear on the factory authorities in question.

This practice reveals a very interesting aspect of the Soviet system, the understanding of which explains many events in contemporary Russia, which seem obscure to the rest of the world. Many people wonder why trade unions exist at all in the Soviet Union; they seem to regard the existence of a trade union as synonymous with opposition to the prevailing system of government, and therefore their presence in Soviet Russia seems to them superfluous. Actually trade unions exist to look after the detailed interests of the workers under any social system. Far from being superfluous under the Soviet system, they are particularly powerful in being able to present to the organisers of industry (who are themselves members of the particular union in question) the collective views of their members in regard to hours and conditions of labour and safety, wages, pensions, living conditions, health and physical and mental culture during the leisure hours.

The trade unions, in fact, protect the individual interests of the workers; they expose injustices, collective and individual, which the state organisers of industry have not

![Diagram](https://example.com/diagram.png)

Palace of Labour, Moscow

Headquarters of the Cine and Photo Workers' Union
The system of cross-checking within the union, described above, is repeated in the encouragement of cross-checking between industry and trade union, and between each of these organisations and the appropriate government department above them. So that a worker can state any grievance he may have to his section of his Factory Committee, the section can bring pressure to bear through the Factory Committee and at the same time through its section in the Central Committee of the union. Hence the case can be carried to the All-Union Council of Trade Unions of the U.S.S.R. But the same grievance will also be placed before the administration of the particular factory, and if it cannot be dealt with there, the grievance can flow upwards to the Commissariat of that industry, which will have to discuss it with the Trade Unions Council. If the grievance is held up at any point by antagonistic or incompetent reactions on the part of some official, the system of cross-checking will inevitably find out the point of “hold-up” and cause an inquiry to be made, possibly leading to a law-case.

One has only to reconsider in the light of this any act of injustice that one has encountered in one’s professional experience, to realise that if it had been in the undivided interests of everyone who was aware of the injustice to demand an inquiry into its causes, then a just outcome would have resulted which, however cruel it might have seemed to the superficial onlooker with a distorted version of the facts, would have cleared the way to a happier state of affairs in the future.

**TWO INTERVIEWS**

Among our encounters with various of the personalities of the film industry and trade union movement and besides those already mentioned, we had two of particular interest to ourselves, those with Pudovkin and Dovzhenko. Our chance meeting with Eisenstein was an unexpected pleasure, but by its chance nature could not be prolonged sufficiently to produce any points of general interest.

We met Pudovkin in a cutting room in the Mosfilm Studios, where he was editing a sequence of his second sound film, The Happiest. The moment of our meeting amused all of us, for Pudovkin was in the act of examining a strip of film which he had just had frame-cut for a speed effect. We chided him on indulging in the old tricks, and he apologised, saying that there was very little of this sort of thing in the new film which has turned out to be a study of character revealed in dialogue and simple camera work—"no good for foreign audiences." We asked him why he was using no viewing machine, and he replied: "I like machines sometimes, but I think my mind is better." Hearing about the long run of The Deserter in London, he showed surprise, regarding it as a poor effect. We reported that it was full of ideas worthy of study and that we had seen it several times. He acknowledged then that much time and experiment had gone to its making and that his new film was reaping the benefit. "But you know, what a title! Every time I am unhappy, my comrades call me the happiest man alive." The Happiest is due for release in November to coincide with the twentieth anniversary of the October revolution.

Certainly the most fortunately situated of Soviet directors is Dovzhenko, whom we met at the Kiev Studios of the Ukrainian Film Trust. From him we learnt the following facts. When, during the celebration in 1934 of the fifteenth anniversary of the film industry, Stalin handed Dovzhenko the Order of Lenin, Stalin suggested to him that he make as his next production the story of Shchorce, a young hero of the revolution who is known as the Chapayev of the Ukraine. Dovzhenko was very keen at the idea and discussed it with the Ukrainian authorities, with the result that he received carte blanche to execute the subject in his own way. He spent months on research and work and in writing the voluminous scenario (which he compared to a thick Russian novel).

During this time the Film Trust built for him at the expense of the state a complete studio block to his own layout, he having expressed his dislike of the existing studio. Last winter he began shooting, for his script involves scenes in all seasons of the year, and he has had at his disposal thousands of troops from the Red Army and all the equipment he has asked for. The film is another of those intended for release next November, and when it is finished, he plans to begin another on a subject which he has already chosen—Taras Bulba, from the novel of sixteenth century Ukraine by Gogol. Two versions of this story have already been made by Russian émigrés: a silent one by Ermoliev and a sound film by Alexis Granovsky, the English version of which has never been released.

Dovzhenko, now in the prime of his early forties, is enjoying the fruits of a career studded with achievements like Earth, Arsenal, Ivan, and other deservedly successful pictures. Some of his remarks to us touched upon the basic problem of the Soviet film industry and call for particular notice. Referring to the persistent fallacy of likening his current production to Chapayev, he pointed out that Chapayev's character was far easier to portray than that of Shchorce. Chapayev was a simple, amusing, hearty fellow who enjoyed fighting for its own sake and was quite content to fight for the interventionists until he was persuaded that their cause was unjust. He was lovable because, though ignorant and simple, he was transparently honest. Shchorce, on the other hand, was much younger, serious, well-educated and an enthusiastic revolutionary. At the age of twenty-four he was already a leader of the revolution in the Ukraine. Dovzhenko's main problem was to portray this character humanly so that no element of priggishness could mar the conception. Heroism in violent conflict is stirring, but in its quieter moments, unless its possessor is understood to the core, this quality becomes boring and makes characters into lay figures. One had the impression that Dovzhenko fully realised the basic difficulty of the task which the Soviet state has set its artists in requiring them to deviate neither to the right nor to the left in following the path towards the ideals of the state.

**TENDENCIES AND CONCLUSIONS**

We do not propose to review in detail the films which we saw during our visit. The film we as foreigners enjoyed most was The Last Night, directed by Raisman, which told an exciting story of Moscow during the night before the first day of the October revolution. The scenario was well arranged, and the predominance of action over dialogue and the welcome presence of a thread of comedy made a minimum of linguistic interpretation necessary to gain our appreciation. The story deals with the events which link two families during that night. One is a working-class family, every member of which is well characterised and acted; the members of the other, a wealthy family of the
professional class, lack characterisation and are stylised as lay figures typical of an effete ruling class.

Our experience of viewing foreign films claims to be wider than most, and we recognise an unfortunate tendency in the dramatic output of Soviet Russia to leave as lay figures, uncharacterised and hence unconvincing, the representatives of opposition to the prevailing order. The zeal to avoid arousing sympathy for opponents is understandable. Similar results were evident in the film product, certainly on the Allied side and presumably on both sides, during the Great War. But while the immediate effect on audiences may be strong enough, the after-effects of the avoidance of characterisation in drama amounts to a steady weakening of influence due to the lack of conviction in the drama itself. We consider that The Last Night failed to achieve the first rank owing to this defect. In retrospect it rings false in places, where a bolder interpretation might have imbued the reactionary characters with some semblance of the misguided, but clearly motivatable, mental and emotional processes which existed at the time. The present conventional interpretation avoids all controversial issues (a negative policy) and kills conviction. A time will come when the more intelligent Soviet audiences will not be satisfied with such flaws and will discriminate between drama and melodrama.

Meanwhile one already recognises a tendency, in cities where alternative entertainment is provided, to support the theatre in preference to the cinema. Naturally the better films (The Last Night and The Return of Maxim among them) are well supported, but we sat through a performance at 7.45 p.m. in the Udarnik, one of the larger cinemas of Moscow, at which not more than one hundred people were present. The film was The Girl from Kanchakha and was definitely dull, the test being that our seats soon wearded us, and at the end of the performance we thought at first that our watches must have stopped halfway through.

Now we were assured more than once by people of high authority that no cheap pictures are made in the Soviet Union, that every subject is given the best possible treatment. They blame the lack of efficient scenarists (this was the reply of Shvernik, the very capable general secretary of the Soviet T.U.C.) which is retarding the creative output of the industry, just as the shortage of skilled technicians is retarding the production of apparatus and of films themselves. But we submit that the present policy of the

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**MOSFILM PROCESS PHOTOGRAPHY**

- **Top Left** - Studio Set
- **Top Right** - Studio Set and Actor + Artificial Moon + Process Painting, and Back Projection of Clouds
- **Bottom Left** - Studio Set + Artificial Moon + Process Painting
- **Bottom Right** - Studio Set + Artificial Moon + Process Painting, and Back Projection of Clouds
Soviet state is bound to be antagonistic to the development of the Soviet film industry, and we look forward to the time when the present vigilance can be relaxed in favour of a regular exchange of ideas and product with the world outside.

To illustrate this point, let us take the example of two reels of the film *Natalka Poltava*, which we saw at the Kiev Studios. This is the screen version of the Ukrainian opera of the same name, and we recognised in its cast singers from the Kiev Opera. Recording was adequate, and the sound track was undoubtedly faithful to the subject. But the use of the camera was unfaithful to the point of boredom. These two reels seemed like four. It was evident that the film had been made in good faith by craftsmen who had had no contact with attempts at filming opera in the rest of the world. They had started from scratch in a race in which other countries had had four years' start. Only real necessity would seem to justify the sheer waste of time and money involved in embarking on such an enterprise without a first close study of European and American experiments in musical films.

To have studied one film, the Czecho-Slovak screen version of Smetana's opera, *The Bartered Bride*, made at least five years ago, would have shown them how film movement can be applied to opera and monotony avoided. A reel of an original musical film, dealing with a group of young Pioneers, and also made in the Kiev studios, revealed a delightful sense of film values in relation to music. The trouble with the opera film was that while the Russians are strong in differentiating between the technique of stage and screen, they had not yet been jolted out of an undue reverence for opera and had avoided sufficient adaptation from the one medium to the other.

It is just this jolting, this constant international flow of ideas and expert personnel, which has made Hollywood pre-eminent in screen entertainment, superficial and insincere though Hollywood too often is. In England a blind worship of Hollywood's international achievements has at last resulted in a revolt, crystallised by *The Era* in the remark: "It is not enough to be foreign, one must have talent too." But England will never resell the presence of a reasonable proportion of foreign film experts—*proven* experts whose function is to act as irritants against insularity and unprogressive tactics. These, together with a steady inflow of the best foreign product, will enable British craftsmen to keep on the move, all the time abreast if not ahead, of the latest developments in a form of self-expression almost as new as, and certainly rivalling in potentialities, the Soviet system itself.

Hollywood (and to a smaller extent England) has learnt a great deal from the first-rate among the Russian silent films. It is safe to say that *All Quiet on the Western Front* was only made after a close and sympathetic study of the Soviet masterpieces. The air of reality, the judicious use of non-actors, the social consciousness of the Russian film has enormously encouraged the development of the leading phase of British film production, the documentary film, unencumbered as it is with the production and exhibition problems of the commercial story film. This influence has been by no means political, and no more political need be the influence of the study of American and European production on the Soviet industry. Our documentaries equally reflect the influence of European and American "art" or story film production.

It is a sad though logical irony that the life-blood of the film—the international exchange of ideas and experts—is denied the Soviet film industry for the same reason for which the limits of self-expression within the industry are being kept narrow; the reason being the need for constant vigilance against the undeniable hostility of the outside world.

As long as this state of tension lasts, only films directly related to the struggle between the two systems—films of revolution and of the evolution of socialism—and films which are works of minds intuitively attuned to the ideals of the state itself, can circulate successfully in the Soviet Union. The others can only be prohibited because of their possession of negative qualities, or prove too dull (though their lack of positive qualities) to attract good audiences. And the mistakes in technique, which the rest of the world has mutually corrected with the swiftness of collaboration, must mostly be made again and corrected by separate experience in the Soviet Union.

It is our tribute to our hosts in the U.S.S.R. to record that as film craftsmen they are facing up to their handicaps, in their knowledge as citizens that the whole system is worthy of far greater handicaps than these, and that the potentialities of their industry in the Soviet Union are capable of unlimited expansion for the common good.

**DIARY OF THE TOUR**

**Saturday, April 24**—At 1.30 p.m., sailed from Hays Wharf, London Bridge, on the M.V. *Felix Dzerzhinsky*, of the Sovtorglot. Ship crowded. First passenger trip of the year between London and Leningrad. Spanish and Anglo-American Workers' delegations on board.

**Sunday, April 25**—In the North Sea. Too rough to be comfortable.

**Monday, April 26**—Eight hour passage of the Kiel Canal. Radio message received from Leningrad welcoming the delegations.

**Tuesday, Wednesday**—In the Baltic.

**Thursday, April 29**—Passed close to small icebergs. At 6 p.m. passed Kronstadt. At 8 p.m. reached the Intourist Wharf at Leningrad, where banners, brass bands, a few thousand trade unionists, newsreel cameras and arc-lights greeted the delegations. Speeches and customs formalities delayed arrival at the October Hotel till 11 p.m. City vividly decorated for May-Day. After dinner, caught the Red Arrow Express for Moscow at 12.30 a.m.

**Friday, April 30**—Reached Moscow (350 miles) at 10.40 a.m. More bands, crowds, speeches and enthusiasm. Failed to evade a bouquet of flowers. Put up at the enormous half-built Hotel Moscow, one of the first constructions in the new capital city that is arising in the midst of the old city (known to Russians as the "big village"). Touried the city. Attended trade union concert.

**May-Day**—Standing on the stone tribune beside the Lenin Mausoleum in the Red Square we saw the longest procession of our lives. In direct contrast to the British coronation procession, where a few thousand troops and notable paraded past millions of citizens, in Moscow about a million and a half citizens paraded past a few thousand notables and visitors. At 10 a.m. speeches and massed bands. At 10.30 a.m. the military parade—infantry, cyclists, cavalry, Cossacks, artillery, tanks—augmented at noon by a flight of 800 airplanes, the majority travelling at more than 300 miles per hour. At 12.30 p.m. the workers began marching by, processions converging on the square from all parts of the city and passing through, six pro-
cessions deep. Finally, the athletes went by, the last of them after 5 p.m. All the evening loud speakers at every corner radiated ballet and dance music, illuminations decorated the gigantic photos of the leaders of the government displayed on the larger buildings; free entertainments were continuous on temporary stages erected in the squares of the city; and everywhere the crowds drifted, bent on enjoyment of the holidays.

May 2 (Public Holiday)—Visited the Park of Culture and Rest. Spent the evening as guests at the Moscow House of Pioneers (organisation for children from the ages of 8 to 17). Astonishing and charming experience.

May 3—Spent all the afternoon and evening as guests of the Moscow Red Army Club, another delightful experience. Went over the buildings, examined the museum, discussed questions of mutual interest with our hosts, were handsomely fed and entertained at an excellent amateur concert.

May 4—Visit to a newsreel theatre and interview with the Presidium of the Film and Photo Workers' Union. Trade show of The Return of Maxim at the First Cinema.

May 5—Visit to the Scientific Research Institute of the Film and Photo Industry. Evening at the Bolsho Theatre: Glina's opera, Rasslan and Ludmila.

May 6 (Rest Day)—Visit to the Moscow-Volga Canal. Evening at the Vakhitangov Theatre: the play Intervention.

May 7—Visit to the Moscow Meat Combinat, the municipal slaughter-house and sausage factory. Evening at the House of Cinema (club of the trade union) with film show.

May 8—Visited the Film Training Institute, the Lenin Museum, the Lenin Mausoleum and the Udarnik Cinema.

May 9—Visit to the Mosfilm Studios. Evening at the State Circus.


May 11—Lunch to meet Kalinin, chairman of the central executive committee of the government (there is no president of the U.S.S.R.). Meeting continued for several hours. In the evening left by train for a tour of South Russia.

May 12 (Rest Day)—At Kiev, capital of the Ukrainian Soviet Socialist Republic. Visits to the House of Pioneers, the old Monastery, the new Dynamo Stadium and Sports Garden (in the heart of the city) and a performance of Verdi's Traviata at the Opera House.

May 13—Kiev University, Film Studios and Botanical Gardens. Evening, left by train.

May 14—At Saporozhie on the River Dnieper. Visit to the State Experimental Farm.

May 15—Visit to Dniepréges, largest hydro-electric power station in the world, magnificently housed. Dam across the river. Visit to steel works and to new workers' city, including cinema and workers' club.

May 16—Travelled to Sevastopol in the Crimea.

May 17—Visited museum and panorama. Visited Chersonese, archaeological excavations of city founded by Greeks from Megara in 500 B.C., which flourished 1000 years and was destroyed by Turks and Tartars in 1475 A.D.

May 18 (Rest Day)—Motored along mountainous coast road to Yalta, health resort of the Crimean coast. Visit to Livadia Sanatorium, former palace of the Tsar. Evening at Artik, camp of the Pioneers, further along the coast.

May 19—Visit to Alonqua Sanatorium, former palace of Count Vorontzoff, employer of the poet Pushkin. Evening at the Massandra wine cellars, followed by tour of a sanatorium in Yalta, where the patients bombarded the delegation with questions.

May 20—Visit to the Nikitsky Botanical Gardens. Travelled by motor from Yalta over the mountains to Simferopol, where we took train to Kharkov.

May 21—At Kharkov, visited the tractor plant and a large poly-clinic.

May 22—Travelled to Moscow.

May 23—Meeting with Shvernik, general secretary of the All-Union Council of Trade Unions, who gave lucid and valuable answers to a variety of questions arising out of our experiences. Midnight, took train for Leningrad.

May 24 (Rest Day)—At Leningrad. Tour ed the city and visited Peterhof, summer entertainment palace and park of the Tsar. Evening. performance of Dzerzhinsky's Opera, And Quiet Flows The Don, at the Kirov Opera Theatre (formerly the Marinsky Theatre).

May 25—Visited the Hermitage and Winter Palace Museums. 6 p.m., sailed for London in the M.V. Andre Zhdanov.
All in a Day's Work

By JOHN ("Bunny") HUTCHINS

The following Article is based on a paper read by Mr. Hutchins to the Hornsey Branch of the British Legion.

SUCCESS as a cinematographer demands a good sound knowledge of photography and the apparatus, a considerable amount of tact and diplomacy, power to adapt oneself to all manner of circumstances at short notice, a cool temperament in emergencies, a willingness to travel anywhere at any time, by land, sea or air, and, above all, one who never forgets that "it only happens once"—they won't run the Derby again for the photographer's benefit. During my experiences over twenty-five years, I have travelled extensively in every corner of the United Kingdom. I was actually engaged on news work long before the War, and one of the earliest big events that I recall was the Coronation of King George V. and Queen Mary in June, 1911. Even in those early days films of the Coronation were shown the same night as far away as Newcastle-on-Tyne and Paris, and there was no aerial transport then.

The outbreak of the Great War caused many changes in the film trade, as elsewhere. Several of my fellow-cameramen were lucky enough to be appointed as official cinematographers with the Forces. I was not so fortunate, and in true army fashion, being a photographer, I was put in the Army Service Corps as a driver in the Horse Transport, and knowing nothing whatever about horses or mules, they made me an instructor within five weeks of joining up!

After discharge from the army, I returned to Wardour Street, and one of my earliest assignments was to be sent to Paris during the Peace Conference, when I came into personal contact with many leading men in the world at that time, including Earl Balfour, President Wilson, M. Clemenceau and Mr. Lloyd George. The Victory March through Paris in July, 1919, provided a thrilling spectacle as I viewed and filmed it from the roof of the Hotel Astoria, overlooking the Arc de Triomphe. With the aid of a fast aeroplane, mine was the only film to be shown in the West End of London the same night. Nowadays such a thing is an everyday occurrence—but it was a scoop in 1919. I travelled frequently with Mr. Lloyd George, when he was Prime Minister, to France, Belgium, Italy and elsewhere.

Another interesting trip was to the funeral of the late Pope in Rome, about fifteen years ago. The ceremony was a failure from my point of view, everything taking place indoors. Therefore I had to concentrate on securing a film of the new Pope. I made a concentrated attack on all the Cardinals' palaces and hotels, in addition to watching incoming trains. Cardinals came from all parts of the world for this election. It is gratifying to know that I got a good picture of the right man, and by this means my firm (Topical Budget) were able to publish it in London directly the result was known some weeks later.

In 1933 I was commissioned by Norman's Film Library to take a scenic film of French Morocco, and it was certainly one of my most interesting foreign trips. A long train journey through France and Spain brought me to Tangiers, from there I went inland for some weeks, visiting what must surely be some of the oldest cities in the world—Fez, Tetuan, Meknes and Rabat—a glorious country and a very mixed race of people—Moor, Arabs, Negroes, and, of course, French officials, and the much advertised Foreign Legion, who are certainly a very cosmopolitan crowd. I had one or two nasty scraps with the Moslems, who have a horror of photography, and I was threatened with all sorts of weird and wonderful deaths—but I'm still here!

Nobody has provided more material for the newsreel than the Royal Family, and it has been my privilege to be associated with practically all the big Royal functions of the past twenty-five years or more. I well remember the investiture of the Prince of Wales at Carnarvon Castle in 1911. Even in those remote days, competition was keen amongst the rival cinema firms, and one company (Gaumont-British) had a railway van specially fitted up as a dark-room and the films of this historic event were developed and printed en route to London and shown at the old Marble Arch Pavilion the same night.

I have been with the then Prince of Wales on visits to industrial centres, launching great ships, laying innumerable foundation stones, planting enough trees to make a good
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ized park, Naval and Military Reviews galore, Boy Scout Rallies, etc. I have seen the Prince in miner's garb descend a coal-mine in South Wales, I have seen him in many uniforms, I have seen him ride at Hunt Meets and in Point-to-Point Races, and on one occasion I had the painful pleasure of seeing His Royal Highness thrown by his horse at a difficult fence—what he said on that occasion does not come within the purview of this article. Of course, there were many times when the Prince did not wish to be photographed, and a timely hint from his private detective was invariably respected by all.

I have also photographed the late King George V. and Queen Mary on innumerable occasions, but it was not always on State occasions that the best pictures were obtained. It was at the less informal ceremonies, such as visits to hospitals and factories. It often happened that the King or Queen broke away from their official guides and chatted with the poorest patient or the humblest workman, and it was for such incidents that I was always on the qui vive. For many years I followed the movements of the Royal couple, including their visits to Rome, Brussels and Ireland, and I was at Sandringham when King George's life came to a peaceful close.

Sport of all descriptions is another subject that figures largely in the make-up of a newsreel. Football, cricket, boxing, tennis, yacht racing and all other forms of sport have to be taken just in a day's work. I suppose racing and football are the two most popular items. I have seen every important horse race for many years past. Last year was the first time I had missed the Derby for about thirty consecutive years, through being away on a flying tour with the late Tom Campbell Black. I had one narrow escape at Epsom some years ago. I was instructed to get what we call a "ground shot." I found a spot just above Tattenham Corner and lay down full length with my hand-cranked camera on the ground just outside the rails. As the horses thundered by I felt something whizz past my head. My assistant told me afterwards it was a horse's hoof. I took measurements and found the nearest hoofmark was exactly 18 inches from my camera! My picture was O.K., but I have never repeated the experiment. Nowadays such shots are obtained by automatic cameras.

Of all the big races the Grand National Steeplechase is easily my favourite, especially as up till last year the exclusive filming rights were always granted to one firm, and naturally the other newsreels wouldn't stand for that, so they had to "pinch" it, and I was generally on the "pinching" side. All sorts of schemes and manoeuvres were resorted to by both sides to outwit each other, and disguises of all sorts were assumed. It was all good fun but perhaps a bit nerve-racking as the time of the race drew near, because it was only necessary to be put out of action for a few seconds as the horses passed your section for all your labours to be in vain. But I was never caught at Aintree and always got away with it. "Pinching" a Football Cup Final at Wembley is easy in comparison, because, if you get rumbled, your camera is merely kept under lock and key until the match is over. You consequently walk out of the ground looking very downhearted, proceed to an appointed place and pick up another camera and ticket, held in reserve for such an emergency, and in you go again! I have also "covered" the Cup Final and Internationals officially. It's more comfortable, but not so thrilling!

I have filmed at Ascot, Goodwood, Newmarket, Doncaster, Ally Pally and many other race-courses more times than I care to remember. Jumping meetings always make good stories, provided you get plenty of falls on your film. Taking pictures on one of the big racing yachts is really good, if you can stand the sea. I have been aboard "Westward" at Cowes several times, also "The White Heather" and "Astra" at Southend and Harwich. I have attended many big fights and have been in the ring with many great champions—but only with my camera to secure "close-ups." Further, I can actually remember taking a picture of Oxford winning the Boat Race! (This was written, of course, before this year's race). I have followed the race several times in the B.B.C. launch, but I certainly had a better view on the occasion when I followed the race in an airplane.

I went up with the celebrated 601 squadron on an "Air Raid over London." We started from Lympne, and after some marvellous manoeuvring in and above the clouds, during which we were attacked by little fighters, we successfully reached the centre of London at a height of 12,000 feet. As I was in an open bomber I was nearly frozen with the cold. I was up for four hours on that trip, but the pictures I secured were well worth it. The camera mostly used for aerial work is an all-British automatic camera made by Newman & Sinclair. I have made very many flying trips, both at home and abroad, and I have had only one little smash, whilst flying over the Ards Circuit Motor Car Race near Belfast. We came down in a small field, overshot the mark, and crashed into a hedge, on the other side of which an express train rushed by just as we hit the hedge. A broken propeller and a few other odds and ends put a finish to flying for that day.

I have photographed many aerial disasters, and perhaps the saddest sight of all was the wreck of that great airship, the R.101. I was called out of my bed early one Sunday morning, and within a few minutes I was on my way to Beauvais in France, by boat and train to Amiens, and then a dare-devil 50-mile drive in a racing car to the scene of the catastrophe. It took me a bare ten minutes to secure my pictures, and then about-turn and straight back to London.

Shipwrecks and railway disasters have figured largely in my experiences. Railway smashes are always awkward jobs to tackle, mainly because the railway officials do not want any pictures taken, and your editor does want pictures, but if you can tell a good tale and have a bit of luck you can generally get all that is wanted.

To cover all these events entails a tremendous amount of travelling, and I have arrived at my destination in all sorts and conditions of transport, from royal trains to hoppers' trains, luxury air liners to costers' barges, from battleships to dinghies, but so long as you get there and get back, that is the main thing.

The arrival and departure of celebrities at Dover and Southampton have kept me busy many times. The return of victorious Generals and the boys who won the victory, Kings, Presidents, film stars and many others are all fish to our net. I remember the first visit of Mary Pickford and Douglas Fairbanks to this country. It was during Ascot week. I returned from the races one evening, and as I had been doing the Paddock, I was in morning dress, spats and silk hat complete. As soon as I came into the office, the editor yelled at me: "Five o'clock train, Southampton, scoop story." And away I had to go. (I did manage to borrow a macintosh and another hat!) Reading my instructions in the train, I found I had to get on board the Red Star liner "Lapland" in mid-channel and get my stuff before the ship arrived at Southampton. A Sketch and Standard press photographer went with me. (Continued on page 116)
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Revision of Subscription Rates

Important revisions of subscription rates were made at the Annual Meeting. It has been felt for some time that many members, particularly those in the higher grades, would appreciate an opportunity to pay their dues annually at a special rate. Therefore, in addition to a general reduction of subscription rates and simplification of the number of grades, a discount will be allowed to those members who desire to pay annually.

The revised rates are as follows:

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Entrance Fees, on the other hand, were increased, the view being that technicians who have not yet seen fit to join the Association will henceforth have to pay a larger Entrance Fee than if they had helped to build it up along with the earlier members.

The new Entrance Fees are :

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All in a Day's Work (continued from page 114)

We went off in the pilot's cutter and after a very bumpy night at sea we eventually scrambled up the Jacob's ladder of the "Lapland." Then our troubles started. We had no authority to be on board! We darted into a bathroom and locked ourselves in. Looking through a porthole, we could see the pilot's boat still alongside, and officers were heard scurrying about looking for us. At last the boat pushed off and the liner got under way again. Our cameras had been hoisted aboard with the pilot's luggage. Well, out we came—straight into the arms of an officer, "The old man wants you two on the bridge." We duly appeared before the captain, a real old salt, who proceeded to chew the English language into little bits. Mary Pickford's manager had arrived on the scene by this time, and between us we quietened the old mariner and proceeded to do our stuff with "Mary and Doug." A plane was waiting at Southampton, and within half-an-hour of the ship's arrival, I was back in London with film and plates, still wearing my Ascot kit! The film was on view, and the Evening Standard full of pictures was on sale, before the famous couple arrived at Waterloo.

I have been asked what is the most impressive sight I have ever photographed. Without doubt, "the total eclipse of the sun" at Giggleswick in Yorkshire. The grandeur of those awe-inspiring twenty-three seconds made an impression on me that I shall never forget as long as I live.

In conclusion, may I remind the younger generation that we pioneers did not have the advantage of your up-to-date apparatus. Our equipment was generally a wooden camera, two lenses, and a fixed tripod. The trail has been blazed. It's now up to you to carry on the good work!

A.C.T. Members' Broadcast

A.C.T. members are taking a permanent claim to Saturday evening broadcasting, firstly in "In Town Tonight" and now in "The A.B.C." Bernard Browne set the ball rolling when he brought Scruffy to the microphone; Osmond Borrodaile followed with a talk on his location work in India on "Elephant Boy"; and now comes Vice-President Kenneth Gordon fitting snugly into the letter N (for Newsreel) in the present B.B.C. alphabetical miscellany presentation.

Kenneth seemed just as much in his element as on General Council nights, driving his points home in his own inimitable style. He spoke of the fun and frolic, daring and danger, which all contribute to a newsreel and Gazette cameraman's screen journalistic work. What fields will he conquer next?

Members' First Directorial Effort

Ralph Bond and Miss R. I. Grierson, General Council members, have received fine press credits for their first joint directorial effort. "To-day We Live" is a 2000 feet documentary presenting a vivid commentary on life in the distressed areas. Sponsored by the National Council of Social Service the film deals with the work of that organisation to prevent utter despair and stagnation filling the hearts of the unemployed, making clear, however, that such occupation does not provide the real work demanded by the unfortunate inhabitants of Britain's distressed areas.

The direction has received general praise and To-day's Cinema, for example, speaks of the imaginative direction. Paul Rotha was the producer for Strand Films, and every member of the unit was A.C.T.

Self-Binding Journal Cases

We have now purchased a supply of Journal Self-Binding Cases, which will enable readers to bind their Journals from issue to issue, thus obviating possible loss and mutilation through waiting till publication of the final number of a volume before binding. The binding case is made exactly thick enough to hold two volumes of The Cine-Technician. The principle employed is that of resilient cords around a firm centre-piece. It is only necessary to open a number of the Journal in the centre and slip it under the cords, which always remain taut and strong. The colour of cases is green, with The Cine-Technician neatly printed on the spine in gilt lettering.

The price is 3/- each, postage extra, and cases may be inspected and purchased from the A.C.T. Office, at 145 Wardour Street, W.1.
Agreement Signed between A.C.T. and N.A.T.E.

Film history was made on June 21st, when an inter-union agreement was concluded and signed between the National Association of Theatrical Employees and the Association of Cine-Technicians, following upon discussions and negotiations lasting several months.

Both organisations should benefit from the joint action and mutual support which will arise from the agreement. The negotiators on both sides have recognised that rivalry and competition must be detrimental to any organisations operating in the same industry. The members of both associations have the same industrial problems and by working together employees in the film industry, whether technicians or artisans, can rest assured that the maximum effects will be obtained from industrial organisation. The agreement could not have come at a more opportune moment, in view of the pending formation of an Employers’ Federation.

TOM O’BRIEN, N.A.T.E. General Secretary.

It deals with and stipulates lines of demarcation in respect of the membership of both organisations in the film industry. It further provides for joint action and mutual support on matters of common interest. A Joint Consultative Committee and local committees throughout the studios are to be set up, such committees being authorised to consider and recommend such appropriate joint Trade Union action as may from time to time be deemed necessary. A joint financial fund is to be created in order to administer the agreement and any action arising therefrom.

The agreement covers employees engaged in all grades of film production, including studios, production companies, newsreel companies, cartoon, magazine, laboratories and television.

The signatories to the agreement were:—On behalf of the N.A.T.E.: R. Finnigan, General President; T. O’Brien, General Secretary; James Atterson, General Treasurer; and Joseph Rogers, Studio Organiser. On behalf of the A.C.T.: The Hon. Anthony Asquith, President; Kenneth Gordon and Sidney Cole, Vice-Presidents; and George H. Elvin, General Secretary.

Veteran Trade Unionist Congratulates A.C.T.

The following letter has been received from Mr. Ben Tillett, veteran trade union leader, who has been a dominating force in helping to build up the British trade union movement to its present prestige and power. His congratulations to A.C.T., therefore, are particularly appreciated.

Mr. Tillett writes:—

My Dear George Elvin,

I have been away from London, but have been watching with much interest the progress your Association is making and the agreement you have just made with Tom O’Brien and the Theatrical Employees.

It is tremendously encouraging to me to find young men like yourself taking up the work of our movement with such ability and enthusiasm and achieving such practical and helpful results.

As an old trade union official, who has himself done a good deal of pioneering, I know how great are the difficulties facing you in striving to organise workers in what is almost a new industry. But I have every faith and confidence that concentration and patience on your part will bring that success for which you are striving.

Should at any time it be possible for me to help you in the work, I shall always be happy, but I do want you to know how encouraged I am at the progress your Association is making and that I hope sometime soon to see you along at the National Trade Union Club that we can celebrate it too!

With all good luck,

Yours very sincerely,

Ben Tillett.

WE SERVE THE INDUSTRY BY PROVIDING
THE ONLY EXCLUSIVELY TECHNICAL
FILM EMPLOYMENT AGENCY LICENCED
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COUNCIL

Accurate records of technicians available:
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art, stills, assistant directors,
continuity girls, all grades of
laboratory workers

A.C.T. EMPLOYMENT
BUREAU
145 Wardour Street, London, W.1
Phone: Gerrard 2366
B.B.C. Mobile Television Unit televising Coronation Procession.

**Television**

In our illustration you see the B.B.C. Mobile Television Camera, which has joined the ranks of newsreelers in recording topical events. Recently many successful outside television broadcasts have been made, the Coronation Procession and Wimbledon Lawn Tennis being excellent examples, although slight interference was caused in the Wimbledon broadcast by medico-electrical apparatus working on the same short-wave frequency. By the way, this short-wave treatment is being used in a number of London hospitals for surgical treatment.

Now comes the Scophony apparatus, which can show a television picture on a screen 12 ft. by 16 ft., being suitable for cinemas as well as home sets, which show a picture 22 inches by 24 inches. Scophony Electrics Ltd., under the managing directorship of Mr. Segall, have demonstrated their ability to produce a picture with a wealth of detail hitherto unobtainable, long-shots and close-ups being perfect. Far worse pictures are being shown in the cinemas to-day.

It is understood that the cinema industry is already interested, and Mr. Segall foresees television theatres as an integral part of modern entertainment, so at last television enters into direct competition with the news-reel.

**Newsreel Cameramen’s Adventures make Film Drama**

Universal’s “I Cover The War,” the 70-minute feature just trade-shown in America, tells the story of newsreel cameramen on war assignment. As the Publicity Department puts it: “Newsreel cameramen against desert warriors . . . . Hot news against hot bullets . . . . Film scoop against bandit troops . . . . See how the boys who make the newsreel risk their lives.”

When this masterpiece is shown in Britain it should make a good evening’s break for tired newsreelers. And no doubt make their lady friends have a tremendous opinion of them. . . . You Heroes!

**Gassing Negs. to increase Speed will Revolutionize Newsreel Processing.**

Following a series of confirmatory tests carried out by Mr. P. C. Smethurst on behalf of the British Journal of Photography into the Agfa-Muso dry hypersensitisation process, newsreel negatives may be greatly improved in quality in the coming winter. The process is very simple and positive in action, although a time-lag of twenty-four hours in processing is necessary.

After exposing the negative in the camera in very poor lighting conditions, on its return to the laboratories it is placed in a chamber where it can be affected by mercury vapour at room temperature for twenty-four hours. When the negatives are developed an effective speed increase of approximately 100 per cent, will have resulted in the straight characteristic. Although the experiments were carried out with mercury some four years old, and no attempt had been made to make it gas freely, an “Ilford S.G. Pan Plate” and a “Rapid Process Pan Plate” were exposed and treated to this process of hypersensitisation and showed very interesting results. The “S.G.” Pan was developed to a low gamma and the process plate to a much higher gamma. Each plate showed a slight increase of fog level, but on plotting the densities a speed increase of 100 per cent, was found in the plate developed to the low gamma and 40 per cent. increase in the “Process” plate developed to the higher gamma, showing that for the maximum speed increase negatives should be processed to a low gamma.

If this hypersensitisation process is taken up by newsreel laboratories, a great improvement in quality of negatives and saving of wastage through under-exposure should result, and there should be no worries about the keeping of speed in negative stock hypersensitised under present methods.

**Big Lens and W.F.N.**

Commenting on Pathé’s 56-in. lens and the results obtained with it, what seems to us a very unfair statement is made in World Film News, making unfavourable comparisons between the work of a cameraman filming the Coronation and the results of one who filmed the Derby. Owing to the weather conditions on the former occasion, the lens had to be used at full aperture, f.8, the mist and bad light made focussing very hard and the unsteadiness of the picture was caused by the movement of the stand owing to the number of photographers working on it. When the Derby was taken, a very good light allowed the cameraman operating to stop down and so increase his depth of focus, which is very shallow in lenses of this great focus. The air was very clear and he was not rushed, as the Royal Party were present a considerable time in the Royal Box. The stand was steady, with plenty of room to work, and the cameraman had only one job to do.

I can assure our readers a long focus lens shot is a cameraman’s whole-time job. In newsreel results the conditions of working must first be considered by any critic of photographic quality.

Tenax et Audax.
Technicians Review the Past and Discuss the Future
High Lights of A.C.T. Fourth Annual General Meeting

TECHNICIANS from thirty studios, production companies, newsreels and laboratories were present at A.C.T.'s Fourth Annual General Meeting, held at Anderton's Hotel, Fleet Street, on Sunday, May 30th. What impressed Mr. Joseph Rogers, fraternal delegate from the N.A.T.E., was the diversity of persons present, ranging from the humblest assistant to the top-grade technician. Directors, assistants, lighting cameramen, operatives and clapper boys; editors; art directors; continuity girls and laboratory workers were meeting with common purpose to discuss common problems.

Ralph Bond was in the chair at the outset and in his opening remarks compared the comparative boom at the time of the previous year's Conference with the existing crisis in the British film industry. "Technicians," said Mr. Bond, "were in no way responsible for the mismanagement and incompetence to which the crisis was mainly attributable. The only lasting and beneficial way by which the present position can be overcome is by a thorough and proper reorganisation of the industry."

Presidential Address

Ivor Montagu, acting President, had, as usual, many shrewd comments to make. Unfortunately he was unavoidably prevented from being present and a copy of his presidential address was read to delegates. "The last twelve months," said Mr. Montagu, "has been a testing period for both A.C.T. and the industry generally. The British film industry, on its production side, is undergoing a period of, let us say, hesitation, which although not within the control of technicians, none the less affects the livelihood of scores and hundreds of us. It is a matter not only of bread and butter, but for many their whole future. Film technicians have never been backward—and I do not think they are ever likely to be backward in an emergency—in readiness to face sacrifices in the way of wearing hours or other form of temporary tolerance in a genuine situation. But we are sternly resolved that the present position of the industry shall not be made a pretext to depress conditions, particularly among the lowest paid of our members, under excuse of an economy which is infinitesimal and leaves in every way untouched the abuses which are the cause of the present production plight. Film production is a process which depends, perhaps more than any other productive process, for its success on smoothness and elasticity between all those technically engaged in it, on the administrative and directing sides as well as on the teams they employ. No reforms of the industry, no endeavour to reconstruct British film production, can possibly be either stable or successful unless it encourages the interests of the technical employees. It is not sufficient that it should be based on their consent, it must be planned and devised with due regard to their interest and in consultation with their representatives. It is, therefore, our duty and intention to participate, as we have begun to do in the past year, in any enquiries and consultations undertaken as a preliminary to new legislation."

Conditions of Employment

Mr. George H. Elvin reported that, notwithstanding the closing down of the Lime Grove Studios, the agreement with Gaumont-British was still in operation in respect of G.B. employees working at Iver. There had been general satisfaction with its working, both from the technicians and the Corporation.

The proposed formation of an Employers' Federation had delayed negotiation of further agreements, but the first joint meeting with employers (studios, newsreel and laboratory) had recently taken place and A.C.T. would press for further meetings in order to get agreements negotiated.

A resolution moved on behalf of the General Council dealt with the situation generally and specifically with the laboratories.

A.C.T.'s principal criticism was the varying conditions from company to company, and it was felt that reasonable standardisation would be to the general benefit of all concerned. It was particularly important that studio workers should support their laboratory colleagues, as they were in fact doing, and it was pointed out that, for example, an ace cameraman earning his comparatively high salary would not feel too comfortable if he knew that his precious negative, on which he had lavished so much time and thought, was at the mercy of a negative developer earning £3 per week, working a delicately-balanced solution made up with loving care by a fed-up-to-the-teeth 30,- a week youth.

Criticism was made of the recent developments which had led to certain studios asking for co-operation between the management and technicians to tide over a crisis, a request which had appeared to mean merely taking salary cuts. It was felt that more real and lasting economies could have been made by studios calling conferences of their leading technicians and asking for co-operation in finding economies in working, instead of merely imposing salary cuts. The question of regularised agreements is of particular importance for those technicians working at studios used by renting companies. Technicians' agreements had been working satisfactorily for some years in America, France and elsewhere, and A.C.T. was determined to pursue the question of agreements with all studios and film producing companies.

Quota Act

Keen discussion took place upon a motion proposed by Sidney Cole, on behalf of the General Council, welcoming the report of Lord Moyne's Quota Act Committee. Mr. Cole pleaded for a cost test in place of the proposed viewing committee and urged the incorporation of a fair-wages clause in the financial stipulations of any future Act. Pen Tennyson opposed the cost test and spoke of the complications attached to costing, which, in his view, made such a proposal impossible. J. Collingburn and Kenneth Gordon hoped that further employment for foreign technicians
would not result from a raising of the quality of quota pictures. Mr. Cole, in reply, stated that if a new Act is to ensure that quota pictures are good pictures, it should also ensure that it is British technicians who make them. He, therefore, hoped that any new Act should include a stipulation that not more than one foreign technician under permit should be employed on any picture qualifying for quota.

New Personnel

Back-door entry into the industry was criticised and one delegate aptly summed up certain young blood as "young persons whose only qualification to enter the industry is the ownership of a Bentley." Bryan Langley stressed the point that all cameramen should enter the industry through the labs. There was a general feeling that a control of the inflow into the industry was essential, and the announcement that certain educational authorities were considering proper training schemes was greeted with acclamation.

Inter-Union Agreements

Negotiation of inter-union agreements was welcomed by delegates and it was reported that such an Agreement was under the point of signature between A.C.T. and the N.A.T.E. (An Agreement has subsequently been signed, as reported elsewhere.) A decision had also been reached with the E.T.U. to appoint a sub-committee from each side to consider a working agreement between the two unions.

Mr. Joseph Rogers, Studio Organiser of the N.A.T.E., addressed the meeting as fraternal delegate from that union. He stressed the necessity for the proposed agreement with A.C.T., which should benefit both organisations, particularly in the negotiation of agreements with employers.

The New President

The Hon. Anthony Asquith was elected President for the ensuing year. In acknowledgment of a warm welcome by delegates, following his election, Mr. Asquith said that in so far as he had been anything at all in the film industry, he had always been a technician, and he deeply and sincerely appreciated the honour paid to him. "In an extremely short time," he said, "you and your Council, and not least your Secretary, have made A.C.T. into a real living force. It is up to us to make sure that it will continue in power and prosperity, and if during the coming year I can contribute in any way, however small, to that prosperity, I shall be extremely happy."

Other Officers


Tone of the Conference

The Conference broke up at 8.30 p.m., after sitting for six hours. Full reports have appeared in the trade press and elsewhere. We need say little more except to comment on the fine spirit displayed by members and to hope that it will be an inspiration to ensure continued progress during the forthcoming year.

General Council Off Duty

A FIN table session till the early hours of the morning concluded the Second General Council Dinner, held at Antoine's Restaurant, on May 29th. The depression was forgotten, in spite of Land's delightful menu caricature of a cameraman under the shade of three brass balls. Mr. Reginald Sorenson, M.P., and friends of the trade press were the guests of the evening. Ronald Frankau was the only absent guest and his letter of apology almost made up for his absence. He told us that his whole life is spent now in trying to get out of doing any unpaid work, and refusing as much paid work as his debts allow. Which is the reverse of the fate of most General Council members.

An impression by Land of the guests and some of the members present will be found on the opposite page.

Holidays With Pay

Mr. GEORGE H. ELVIN, General Secretary, and Mr. L. CAVE-CHINN gave evidence on behalf of the Association to the Government Committee enquiring into the question of holidays with pay. The evidence has received publicity in national, local and trade press. Briefly, our representatives outlined the present position in the film industry, and advocated a general holiday of two weeks with full pay, except in the case of the laboratories, where the holiday should be three weeks, as in France, owing to the unhealthy nature of the work.
Impressions by Land at the Second Annual General Council Dinner.
Recent Publications

"That Reminds Me . . . ."

The Romance of the Movies, by Leslie Wood. Heinemann. 15/-

This book is described on the cover as "a thoroughly well documented and illustrated account of the past, present and future of the film." It is unfortunate that the author and or his publishers should have decided upon so pretentious a sub-title, because the illustrations are adequate without being extraordinary, and documentation, if that word is to retain any scientific meaning, completely absent. It would have been much better to have left the title quite simply as "Romance of the Movies." The accent then would have been on Romance, and the reader would have expected exactly what he gets—a slick, journalistic, anecdotal account of the film industry, making no pretensions to accuracy of detail or to establishing a strict chronological sequence of events. Because it is exasperating in a book which apparently claims rivalry with Terry Ramsaye's "Million and One Nights" or Rotha's "The Film Till Now" that it should mention practically no dates, show at times a very superficial knowledge of the mechanical facts of the industry, and proceed generally by a method of "Oh, that reminds me that about five years before this . . . ."

Of course, Mr. Wood tells some amusing stories, such as that of the hall at Hackney which was too long for the projector throw and so had a transparent screen hung in the middle and seats placed on both sides of it. Admission to the front of the screen was 1d, to behind it 1½d. The difficulty came with the inserts and captions; those behind would shout out to know what they said, and those seated in front would chant as one: "Dear Agnes, meet me at the railroad depot at three—Jack . . . . or whatever it was. It is amusing, too, to hear, that the early Gaumont studio at Dulwich was once valued in the balance sheet at 1½. Or the legend that, since operating-boxes were so tiny in the early cinemas, it was impossible to find any operators over five feet in height. But even with his stories Mr. Wood, I think, is inclined to be too trusting. He tells, for example, one of the oldest legends in the business—the one about the film that was accidentally projected with one reel missing, to the vast improvement of the story—and gives it a local habitation and a name, apparently unaware that there is probably not a studio in the world which has not had that story related of one of its pictures in one form or another.

In fact, the book gives the impression that Mr. Wood has listened not wisely but too well to both real and alleged "veterans" of the industry. From their conversation he has compiled a scrapbook which, in course of time, has become the present work. A little reading and a little applied research might have helped him to give a more accurate account of Eadweard Muybridge's experiments; to avoid giving the impression that he believes all the chief sound systems to be variable density ones; to avoid a simple error like describing the rushes as "the day's work" instead of the precious day's work; even perhaps to show an understanding that the work of the editor in his cutting room is rather more complicated than he describes here.

I applaud Mr. Wood's vindication of William Friese-Greene's claims as the film pioneer; and in general the attention he gives to the early days of the British industry, a field that needed covering, and still needs a scientific historian. The book is fluently written and will be very readable to those not exasperated by the lack of dates and detail. But it is a pity that it has no bibliography, so that those seriously interested in the cinema might be led to read the really documented books about it.

SIDNEY COLE.

Pep and Purpose

Amateur Movies and How to Make Them, by Alex. Strasser. The Studio, Ltd. 7/6 net.

This book is outstanding for the excellent way in which it is illustrated. A profusion of first-rate photographs accompany almost every page of text. They are so admirably arranged in sequences and groups that it is possible for the professional or experienced sub-standard worker to "read" the book simply by following up the illustrations in proper order. For the amateur they serve to make the text doubly understandable. Sprinkled over the pages are amusing little diagrams, drawn by Henry Rox.

There are several questions that, from the amateur's point of view, deserve more attention. For instance, lighting for colour film. For the past few years an increasing number of amateurs have been using colour stock; and now that it is available on gauges smaller than 16 mm, an even greater number will be using it. A paragraph or two on the methods of lighting for colour work would have been valuable. Unfortunately the only advice that is given is the old idea of "front lighting whenever possible." Certainly for the inexperienced amateur this is the safest way, although the results, by relying predominantly on colour contrast, tend to become monotonously flat and astereoscopic. Mention might have been made of the recipes for attractive results by use of side, top and back lighting, in conjunction with front and side reflectors of various tints and hues, also of the use of colouring the light sources for certain effects.

But, on the whole, the treatment is comprehensive and well balanced. It is a lively little book, calculated to make the amateur's life more mistake-proof and designed to put more pep and purpose into his pastime.

WM. NORMAN MCLAREN.

"Gentlemen and Players"

Footnotes to the Film, edited by Charles Davy. Lovat Dickson. 18/- net.

In the team of Gentlemen and Players who are collected together to write symposiums of this kind the Gentlemen this time have a considerable preponderance. Not that in any single case they are not expert in the subjects on which they are writing; but there is a certain aloofness about much of their criticism, as from people with one foot in and the other foot safely out of the Slough of Despond—with which they are agreed in identifying our industry.

The book would have made brighter reading had the articles by such technicians as Hitchcock, Basil Wright, and Donat not come as an oasis in the middle of the other more academic discussions. And how pleasant it would have been to have had one or two "rank and file" contributions—say, an article by a lad from Clydeside on what kind of films he
really wants to be "educated" to like after all; and certainly
something by one of A.C.T.'s two hundred unemployed on
whether he agrees with Mr. Korda in finding these crises so
"salutary."

That being said, it is, however, an interesting collection of
essays. There is not space to discuss them all; but
Elizabeth Bowen and Sidney Bernstein, writing on why
people visit the cinema from the points of view of paying
guest and host, were particularly clear and penetrating.
Grierson and Cavalcanti present very readable histories of
realism and comedy on the screen. Alexander Korda and
Basil Dean write interestingly on the destiny of the British
industry, while Maurice Kanner modifies some of this in a
challenging article from the point of view mainly of American
capital. John Betjeman contributes a storm of not entirely
merited and very unconstructive abuse.

The common theme running through every one of the
articles is our lack of success in establishing a distinctive
national film industry, and it is interesting to see that a
number of the writers agree in diagnosing as the first cause
lack of contact with reality. While the production, scenario
and direction of our films is largely left to foreigners whose
knowledge of our island is confined to Mayfair, Soho and the
history books, and to Britons whose simpler beginnings have
been forgotten in the present glory of their splendid motor
cars and establishments, it is only to be expected that the
films which they create will have little feeding for the lives
of the mass of the people or appeal directly to their emotions.
The solution does not lie in reducing these authors to 30-
a week or in our concentrating on grim films of basement
life. But it is interesting to note that the men who are
successfully overcoming this difficulty are shownmen with
years of experience in pleasing audiences in their own
towns, working with comedians whose acquaintance with
the public has not been confined to the West End stage.
None of the writers have remarked the tendency in the last
few years to recruit all apprentices to the industry from the
richer classes—a tendency likely even further to emphasise
this lack of direct appeal to the mass of the people. There
is a big job for A.C.T. seeing to it that any apprenticeship
scheme shall offer full opportunities to every class of person
to prove his ability.

It's good for us sometimes to read what the world outside
the penny press thinks of us, and this is a distinguished set
of articles. The stills are exceptionally fine and well printed.
Few of us have 18- to spare for books of this kind, but it's
well worth taking down off the library shelf or borrowing
from your wealthy friends.

MICHAEL GORDON.

Icy Hell!

_Icy Hell_, by Will E. Hudson, A.S.C. Constable. 10/- net.

Will E. Hudson, A.S.C., news-reel cameraman, has
written this book from his heart. It is not a technical
treatise, but tells of adventures whilst filming in the
Aleutian Islands, Eastern Siberia, and in the Arctic fringe
of Alaska. It's just the work to encourage the budding
cameramen to deeds of derring-do.

The author tells of his fight for life against rotten ice
on mountain sides; how he saved his camera by wrapping
it up in his sweater and then rolling it down in its case to
avoid a complete smash; then hours of waiting for the
ice to freeze solid so that he could obtain footholds to
climb down; meanwhile having a stiff job to keep warm.
The descriptions of living conditions in this kind of snow
are fine reading, and one wonders how human beings can
exist after such a battle with the elements.

Invited to tea, Will Hudson saw his hostesses using
deer skin and saliva to clean the cups! The natives hung
their skin suits outside their frangas at night so that the
"live stock" will freeze to death. In the morning the
clothes are shaken free and again ready to wear. There
is a thrilling description of the motor schooner's battle
with the ice flow, when thousands of tons pressure threatens
to smash the "Polar Bear." There is ultimate victory,
and the party finally crosses the Endicott Mountains on
foot in a desperate attempt to reach Fort Yukon.

The journey is made after fighting blizzards, ice and
hunger, with the thermometer 60 degrees below zero, the author
at the same time conducting an heroic struggle against
septic toes on the 700-mile trek back to civilisation.

Permits are even necessary to film in the Arctic, so the
author tells us! Will E. Hudson has had 30 years' ex-
perience of newsreel filming, which just shows how tough
the old-timers are. His story is vividly illustrated with
stills of the various phases of his journey.

K.G.

_Hollywood Through The Back Door_, by E. Nils Holstius,

Geoffrey Bles. 10/-

Having plodded diligently through the 400 pages of this
book, I am still wondering (a) why it was written, and (b)
why it was published. It is the sort of book that might
conceivably be of interest to the author's personal friends,
but that is no excuse for inflicting it on the public with a
title that leads one to expect information about Hollywood
of a somewhat more revealing kind than can be obtained
every week in the fan magazines.

The author determined to break into Hollywood on his
own merits, and commenced his efforts by disguising him-
self as one Ed. Hamilton, a sailor. Two hundred pages
later, he had hitch-hiked his way to the film city and equ-
ually assumed his real identity. For six months he tried to get
work in studio scenario departments, offering to work
for nothing until he had proved his ability. Executives
kept him waiting on the mat for hours, broke appointments,
promised to telephone and never did, until finally in despair
he gave up the attempt and returned to England.

Although one can sympathise with the author's dis-
appointments, and condemn a system calculated to break
the heart of intelligent and creative people, any attraction
the book might have had is ruined by the extreme tedious-
ness of its writing and the endless tittle-tattle of meetings
with friends and acquaintances.

R. B.

_The Complete Projectionist_, by R. Howard Cricks, F.R.P.S.,

Kinematograph Publications Ltd. 5/-

The new and revised edition of _The Complete Projectionist_,
by R. Howard Cricks, F.R.P.S., is rather disappointing.
Only three articles have been added to an interesting
earlier edition—Television, A.C. Calculations and Colour
Films. Even these, especially Television, are not long
enough. Television, after all, is the coming thing, and we
want to know more than the principles of it. It is also
regretted that there is no reference to R.C.A. Equipment,
Mr. Cricks writes on Western Electric, even the Amplifier
Circuit, but many of the "boys" want an insight on R.C.A.;
after all, The Empire, Leicester Square, has gone from
Western Electric to R.C.A., and eleven studios use it. So please, Mr. Cricks, the next time you revise your book,
make it really complete. It will then be greatly welcomed.

F. G. BAIL.
Panning Around the Globe

"HAPPY HUNTING to all whom it may concern." Everything is now in full bloom (except the film industry that had its buds killed by a severe frost early in the year.) As I sit in my study writing this page, the birds are all singing their bewitching chants, a covey of raspberries have just passed over in full flight. Chase me, boys, I'm Queen of the Pigeons.

Haphazard Shots by Pog.

The new Magnates enter the industry:

- Lord Tishu, the Paper man.
- Big Bilge, the Backer of Bank Pictures.
- O. Receiver, new Studio Manager at (fill in necessary Studio).
- W. Cuts, now one of the Chiefs in the Salary Dept.

Prosperity and Television are round the same corner... too much of this hole-in-the-corner business.

* * * *

A word to the sincere students of the Cinema—"There is an "I" of a difference between idea and ideal."

Motto.

In competition with the X.R.A. motto used in the United States, i.e., "We do our part," I offer the following:—"British and Bust." My trusted friend Pigswill has designed a Trade Mark that would be suitable for all and any Companies adopting my Motto

Nuthing Brings Nuthing.

I have, of late, received several personal slights concerning this page, which I feel only shows how illiterate we all are... Only the other day someone (filius nullius) walked into the office and suggested that it would be a good idea if there was a funny page in the Journal... which proves, surely, my point. Maybe this poor, misguided being thought that my page was an advert. for some odourless hair remover.

Pog does a Strip Tease to help the Fitness Campaign.

To be fit is a duty we all owe to the Executives of the Industry. Who would think of starting a Production with a nearly empty magazine? So you too must see that your magazine is not empty. You oil your cameras—well then, oil yourself thoroughly too. At night, when shooting is finished, you can everything—then get canned yourself. And in the morning you start with a clean sheet (if the scenario man has finished the next page). So you see just how essential it is to remove the unfit from their offices and... (Another Thrilling Instalment next issue, depicting how we all get jam as well as British butter on our bread).

Poet's Corner.

I found this tiny little fragile poem amongst a lot of old "Pea Tins," which would indicate that it came in all probability from France:

- Early in the morning,
- Down at the station,
- See the little puff puffs
- All in a row,
- Guard blows a whistle,
- Turns a little handle,
- Chuff, chuff, chuff, chuff,
- Off we go.

Pog Closes Before Time.

Thank God for that little snack—some poor devil might have made a meal of it. How much longer are you saps going to stand this... I'll be seeing you.
Technical Abstracts

A High-Precision Sound-Film Recording Machine. H. Pfannenstiehl, Bell Telephone Laboratories, Inc., New York, N.Y.

In this recording machine an improved type of sprocket drive mechanism is employed to propel film at a constant velocity past recording light-beam. In addition to film drive and control mechanisms, recorder is provided with several accessory devices to facilitate operation and thereby reduce cost of sound-film production.

These accessory drives consist of a slater, which photographically records the "take" number of the record in the sound-track area; an electromagnetically operated punch mechanism, which punches an identifying notch or hole in the film; an electromagnetically operated shutter arranged to cut off recording light-beam at an extremely high speed so that a definite and sharp cut-off point is produced on the sound-track that may be used for synchronizing purposes; and a switch mechanism to control automatically various operations of machine in their proper sequence.

Recorder may be equipped with any of the optical systems required for recording sound on single, double, or other types of sound-track. Associated with optical system is a photoelectric cell and amplifier unit by means of which direct monitoring of sound being recorded may be done.

All mechanisms and devices are enclosed within the housing of recorder and are accessible for operation. All manual controls are located upon a panel convenient to operator on front of base of recorder. Provision is also made for remote control of such devices as slater, punch, shutter, etc., as well as starting and stopping of machine.

This recorder may be used with either Bell & Howell or Mitchell film magazines. Machine was developed by Bell Telephone Laboratories in co-operation with Electrical Research Products, Inc., to meet current studio requirements.

Objective Quantitative Determination of Graininess in Photographic Emulsions. A. Goetz, Associate Professor of Physics, California Institute of Technology, Pasadena, Calif.

A graininess meter as an instrument for objective and quantitative determination of density fluctuations of photographic emulsions is described. The instrument, specially designed for this purpose, produces a microphotometric record of a uniformly exposed surface in terms of relative transparency fluctuations (T/Tm); (Tm = mean transparency). Resolving power of optical system is larger than individual grain size, so that granularity as well as graininess is recorded. Unlike usual microphotometric records, records are produced in such a way that they can directly undergo a process of partial integration in a photoelectric integrator designed for the purpose. Thus a record of distribution of transparency fluctuations is directly obtained. In addition, sum total of fluctuations can also be obtained. The former, however, is chosen to determine a measure of the graininess in form of a logarithmic average obtained by a simple graphical method which weighs size of fluctuations in approximation to subjective impression. Average of the transparency fluctuations relative to mean transparency of specimen thus obtained is used as expression for graininess.

The graininess meter has been applied to the following problems:—Graininess-density diagrams of various commercial negative and positive film materials; effect upon the emulsion by variation of mode of development; quantitative measurement of increase of graininess in contact prints with respect to graininess qualities of negative materials from which print is made; effect of optical nature of printing light upon graininess increase of the print.


Variable-density negatives exposed on the toe of the H & D curve have been known to be superior in brilliance and high-frequency response to average sound-print, although they show some harmonic distortion. Variable-density negatives recorded on the straight-line portion of the characteristic are highly distorted, but show a remarkably low background noise level.

In order to eliminate negative distortion, playback apparatus should produce same type of compensating distortion that occurs in a straight-line print; that is, output should be a negative power function of input. The exponent, called apparatus gamma, should be variable, to fit variations in negative gamma. Preferably, apparatus should be capable of reproducing prints as well as negatives. These purposes are achieved in negative playback unit, RA-222, by four distinct steps:

1. An essentially linear input stage for reproduction of prints.
2. An exponential feedback stage which converts the output of the first stage into a logarithmic form.
3. A linear, variable-gain stage which reverses the polarity and provides gamma control.
4. An exponential output stage which converts the logarithmic response into desired power function.

Possibility of reproducing straight-line variable-density negatives opens up following fields of use:

Quality of newsreels and other rush shows can be judged before printing.
Correct gamma of newsreel negatives can be estimated from the best setting of the reproducer gamma control.
Release negatives can be obtained by re-recording directly from original negatives, with saving of time, printing expense, and with improved quality.
To obtain highest quality of reproduction for special first-run showings, sound-track may be a negative directly re-recorded from original without intervening printing process.

All these uses have been successfully made of the negative playback unit. It is a self-contained, A.C. operated apparatus, which can be adapted to existing types of film reproducers. By a single switching operation it can be set for reproduction of positive prints or of negatives. Calibrated control makes it adjustable to reproduction of variable-density negatives of a wide range of gamma. In addition, gain control and adjustable low-frequency equalization have been provided.

Results are being demonstrated by reproduction from typical variable-density noise reduction negatives to show increased clarity, volume range, and freedom from noise reduction background "hush-hush."
A Combination Picture and Non-Slip Ultraviolet Automatic Printer.  O. B. Depue, Chicago, Ill. (Demonstration).  (20 Min.)

This printer has the following features:—The picture-printing head gives a full-width picture, uses a standard aperture, and a sound aperture white light. The sound printing head is non-slip, uses ultraviolet light, has a rotary stabilizer, a generator supply for the light, and an automatic light-control board.

Both picture and sound-head driven by separate 3-phase motors to assure steady film motion. Motors are mechanically tied to assure synchronism in starting and stopping, and are equipped with compensating device allowing the motor to slip instantly into phase with bucking.


New Sound Standards

The major studios' sound department heads met in Hollywood Monday with representatives of the sound equipment companies under the sponsorship of the Research Council of the Academy of Motion Picture Arts and Sciences to discuss proposed new standards for sound-track dimensions and the placement on the film.

With the increasing use of the push-pull method of recording and reproducing, the sound directors are utilizing the facilities of the Research Council to prepare standards in advance to which all new equipment may be manufactured, and to make certain that all recordings made on any type of push-pull equipment may be reproduced on all other equipments.

Motion Picture Herald, May 22nd, 1937.

Microphone Technique Development

A new microphone, invented by Dr. von Braunmühl, of Telefunken, is so constructed that it can be used at will either as a uni-directional or bi-directional microphone. It has two diaphragms, each of which records partly the excess pressure and partly the pressure of gradation or velocity of the sound-wave.

A microphone—or, as Dr. P. Hatschek describes it in Filmtechnik, a sound barometer—having a single diaphragm enclosing an air cushion is susceptible only to variations in pressure; an excess pressure will compress the diaphragm, and a low pressure will permit of the air inside forcing it outward. It will be almost equally susceptible to sound from any direction.

On the other hand, a microphone constructed with two opposing diaphragms, as shown in Fig. 1, will be insusceptible to sounds in the direction shown by (a), but the two diaphragms will have an opposite response to sounds impinging directly upon either diaphragm.

Diaphragm Construction

These two types of microphone are combined in the Telefunken design. Between the two diaphragms is a plug, through which are drilled holes, in one part of the plug right through, and in another part only half-way through. Obviously, those parts of the diaphragms opposite the holes which are drilled right through act in the same way as the diaphragms shown in Fig. 1, while the rest of each diaphragm works as a pressure microphone. Therefore, such a microphone will react both to sound pressures and to sound pressure differences.

Mike Response

Fig. 2 shows the response of the microphone to sounds reaching the diaphragms squarely (the plug between the diaphragms is omitted). The arrows in full line show the direction of the sound pressures, the dotted arrows the direction of the pressure difference.

A comparison of the two sketches shows that in both cases the pressure and the pressure difference are summarised on one diaphragm, and are in opposition on the other. If the sound originates on the left, then it is summarised on the left side, while if it comes from the right, it is cancelled out on the left diaphragm.

If only the left diaphragm is put in circuit, then the microphone will respond only to sounds from the left, giving a polar curve similar to Fig. 3.

Adaptable to Film Work

A microphone of this type is particularly useful for sound-film recording. It is possible, by means of a single microphone, to cover a fairly wide angle, and, for instance, to minimise the effects of a speaker or singer turning his head, and practically to cut out foreign sounds from the other part of the studio.

Parallel with the development of this directional microphone, other types of microphone are being developed which are practically non-directional.

Kinematograph Weekly, May 20th, 1937.


The company was just in its infancy at that time, being two years of age, but had created considerable interest because of the simplicity of the process and excellence of its colour values.

To those of our readers who are not particularly informed on the subject we may mention that Kinemacolor was an additive process. The camera was fitted with a revolving colour wheel, one-half having a transparent orange-red filter, the other half a blue-green filter.
This filter was positioned behind the lens and in front of the negative in order that the light rays from the lens passed through the filters to the picture area. The camera was built to photograph at a speed double that of the regular black and white, which was then sixteen pictures a second. Thus Kinemacolor photographed at a speed of thirty-two pictures a second.

**Through Alternating Filters**

In photographing, the first picture area received an image through the red filter, the second through the blue filter and this continued throughout the negative roll. So it needed two actual pictures to complete the colour cycle, accounting for the camera being speeded to double normal.

After the negative was developed, a normal positive was made in the orthodox manner and the print contained no visible colour values, but latent values. The projector functioned in precisely the same manner as the camera. The speed was thirty-two pictures a second and it carried a revolving transparent colour filter wheel, positioned between the lamp house and film gate, and the positive was threaded through the projector with the picture carrying the red colour values opposite the red filter. Thus one really saw on the screen a succession of positive images through alternate red and green filters. Due to the persistence of vision the images coalesced in the mind, and the effect was a picture in natural colour.

Prints were exhibited in London on the evening of the day they were photographed, and this, mind you, was twenty-six years ago. Not much of an achievement, one might remark, when considering the dispatch with which prints are exhibited to-day, hundreds of miles from where events take place, within a few hours.

But let us consider the equipment available in those days. Negative was in 200 feet rolls. There was no panchromatic negative on the market and so Kinemacolor had to panchromatize its own stock. This was done on two-hundred foot pin frames. These were brass frames with a series of brass pins mounted in the frames. With the frame lying flat, the pins about an inch and a half in length projected upward from the frame.

The orthochromatic negative was threaded upon the pins, celluloid side against the brass pins, and then submitted to the sensitizing operation. It was no simple matter to thread these pin frames, since they were operated manually and of course in a room illuminated by weak light. The frame was placed upon a stand in front of the operator, the stand being constructed upon an angle of about 45 degrees.

**Much Care Needed.**

The operator then took a roll of negative and first made a small loop at the outer end, fastening the loop with a pin. This loop was then placed upon the first pin at the centre of the frame and the negative threaded to the next pin and so on. When the frame was completely threaded the film resembled a multiplicity of squares starting small in the centre and gradually becoming larger as it reached the outside of the frame, which was about 2 feet 6 inches square.

Two important points needed watching carefully, however. One was to avoid getting a "lap," which meant that the film was threaded twice on the same pin, and which would result in a lack of sensitizing of the "lapped" negative at that point, and the second was to avoid allowing the emulsion side to touch the head of any brass pin.

The pins were but 1/8 inches apart, and one readily can understand the possibility of this happening. Should this occur the film would develop as a black mark. Experienced operators could thread a 200 foot frame, without error, in about four minutes.

After the sensitizing operation the film was then transferred to a large drum for drying. Developing of the negative was accomplished in a like manner. There were no developing machines in those days. Also the developing quality was a matter of eye judgment, as this was long before the days of sensitometric control.

**Editing Done by Negative**

Since it was possible to preserve the sensitized negative for a period, a large amount was available for the ceremonies. Knowledge of just what was to be photographed on a certain day allowed titles to be made and held in readiness. Editing was done by the negative itself. A projector, equipped with a Nertz lamp and felt-covered gate shoes, was used.

After the negative was whipped into shape, it was rushed to the printing room. There were no cinex or similar light-testing machines available. In fact, the prints were manually driven and the light changes manually operated. Thus in printing, the operator first inspected the roll of negative over a white light to acquaint himself with the general quality of each scene.

Then, after the printer was threaded, the operator printed by manually turning a large disk which operated the mechanism, the disk having a handle and using his right hand while with his left he operated the light control, which was a Tungsten lamp mounted on a sliding arm and could be brought toward the printing aperture or retarded by turning the control lever left or right.

As to the position of the lamp for the correct printing density, the printer determined that by the first picture of any scene which was visible at the printer aperture. It is remarkable, but nevertheless a fact, that a printer could make copy after copy with hardly any visible variation.

The printing finished, the prints were sent to the developing room, where again they were threaded on the two-hundred foot pin frames and were developed in ceramic tanks holding ten gallons of solution. After the films were dried, they were spliced together in full reels, splices being made by hand, as machines were not then on the market.

*International Photographer, May, 1937.*

**Colour Patents Survey**

**Lenticular Film**

In the lenticular field much progress has been made towards obtaining satisfactory copies, as well as in making more perfect the system of recording on lenticular film.

R.C.A. propose, in No. 454,163, reproducing a substractive film upon a lenticular film by printing with the aid of a filter of the type ordinarily used in conjunction with lenticular films.

An Opticolor patent, No. 454,357, refers to the fact that the edges of the image on a lenticular film show colour fringing: a colour filter is described, divided into three strips each containing three colours functioning in conjunction with an agreement of mirrors.
German specification, No. 632,695, proposes the production of a four-colour image on lenticular stock, by coating it with two emulsion layers, sensitive respectively to the long and short wave-lengths, and using a double filter. Advantages claimed are easier printing, a less loss of light in projection, and the possibility of using finer lenticulations.

In a method of printing lenticular films, described in No. 457,686, the elementary beams emanating from the original film are explored successively by a copying optical system of small aperture, and one film is moved so that the image will remain stationary. A modification of this principle is described in No. 458,418.

Subtractive Processes

Judging by patent specifications, subtractive processes are engaging the attention of research workers more than additive processes.

Dr. Bela Gaspar points out in Nos. 458,256 and 458,804 that it is useless to sensitize a photographic emulsion for specific light rays if the layer is uniformly dyed by means of a dye-stuff which absorbs this light; he proposes incorporating a coarsely dispersed dye-stuff and after exposure, converting it to a finely distributed form.

Kodak give in No. 458,664 formulae for colour-forming developers, comprising an aromatic amina developing agent and a colour coupler consisting of an organic compound with a reactive methylene group. No. 458,665 relates to a similar developer and a colour coupler consisting of a hydroxyl diphenyl.

In U.S. patent No. 2,059,887 (assigned to Kodak) are described various methods for controlling the penetration of the colour baths in a multi-layer film, such methods including adding inert substances to the bath, the use of stop baths, and drying temperature, and hardness control.

No.453,674 refers to two disadvantages of existing methods of producing a dye image by the destruction of dye-stuffs in areas containing a silver image; first, the necessity of printing from a positive, and secondly, that variations in thickness of the emulsion give rise to corresponding variations in density of the dye image. A multi-layer system is described embodying a reversal process.

Agfa state in No. 454,788 that fine-grained emulsions, rich in silver, have a particularly high special sensitization; the use of such emulsions without filters is proposed for a tripack film. No. 455,556 refers to the fact that dye contained in emulsions must be in a very finely dispersed condition, and proposes dispersing the dye in gelatine with the aid of a wetting agent.

Kinetograph Weekly, June 3rd, 1937.

Microphone Mixers. By M. Rettinger.

The article discusses the design of compensated microphone mixer circuits, in which the impedance matching is achieved by the inclusion of a series compensating impedance in the microphone circuit.

General equations are obtained for multi-channel mixers of both the parallel and series-parallel type. These equations determine the values of the compensating impedance, the load impedance and the insertion loss in decibels in terms of the source impedance and the number of groups.


Eastman Fine Grain Duplicating Films

The active co-operation of the Kodak Company with the Motion Picture Industry has been of major importance in the solution of many problems concerning motion picture technique. Recently, considerable study has been given to the important problem of duplicating, culminating in the introduction of two new products, comprising a Fine Grain Duplicating Positive Film and a Panchromatic Fine Grain Duplicating Negative material, emulsions 1365 and 1203 respectively.

When properly handled, these two new duplicating films will produce a negative of excellent photographic quality, practically indistinguishable from that of the original negative, but the method of handling these products differs so considerably from that recommended when using Eastman Lavender Duplicating Positive and Eastman Duplicating Negative materials, that the following general description of these two new films, together with some instructions on their use will, we hope, be helpful.

Emulsion 1365, the Fine Grain Duplicating Positive Film, is very much slower in speed than is Eastman Lavender Duplicating Positive. It can be handled safely under the Wratten Series OA safelights. Due to its extremely low speed, it is not possible to obtain sufficient exposure when printing on the normal printer light scale, and it becomes necessary to run the printer at a lower speed than is normally used. While the actual printing speed required depends upon the intensity of the light source and other factors, it may be helpful in estimating exposure requirements if an example in actual practice is given. Under laboratory conditions it was found that using an average density negative in a contact printer running at 14 feet per minute and equipped with a 500-watt, 110-volt monoplane filament projection type lamp, located at a distance of ten inches from the printing gate, operated at 110 volts, a satisfactorily exposed negative was obtained.

It is recommended that exposure should be so adjusted as to give a minimum density of 0.60 to 0.70, so as to utilize the region of exact tone reproduction for the important tones of the picture.

The development process should be carried out in the Borax D.76 developer. Under normal conditions of machine development, the desirable gamma value of between 1:10 and 1:30 is obtained in four to five minutes at 16 deg. F. In this connection, when making sensitometric exposures on the Eastman type 2B. Sensitometer, using the 1365 type film, a more satisfactory curve is obtained if a double exposure is given.

The Fine Grain Duplicating Negative 1203 is a panchromatic negative, and must be handled under Wratten Series III indirect room lights. If greater illumination than this is required, a sheet of tissue paper may be substituted for the regular weight white paper in this safelight filter. While 1203 film is slower than the normal Eastman Duplicating Negative, it is not slower to the same extent as is the Fine Grain Duplicating Positive compared with Lavender Duplicating Positive, and little trouble should be experienced in printing this film. The 1203 film has a higher rate of development than the normal Duplicating Negative material and under normal conditions of machine development, using a D.76 type of developer at 65 deg. F., a gamma value of between 0.60 and 0.70 will be obtained in between four and five minutes. When making sensitometric strips on this film, the positive set-up of the Type 2B. Sensitometer should be used.

Both these new materials are now being used extensively in motion picture laboratories in Hollywood and New York and remarkable results are being obtained.

Technical Service,
Motion Picture Film Dept., Kodak Ltd.
BUT he wouldn’t talk about himself. I’d hoped he would give me an inside story—what it’s like to make your first film, how it feels to be a promising young director. But a director, he feels, goes on learning and it’s a long time before he ought to begin laying down rules for other people. And even then what’s true for him in film-making may be all wrong to the other fellow.

In fact, the director of “Midshipman Easy,” “Laburnum Grove,” “Talk of the Devil” and “Who’s Your Lady Friend” is no performer on the trumpet. Which, if he doesn’t realise it already, is why technicians like working for him.

The projectors were running in the Ealing re-recording theatre. On the screen a cabby was singing to his horse. I felt my way into a seat and watched Frances Day, Romney Brent, Betty Stockfeld and Margaret Lockwood, who recalled “Midshipman Easy” and reminded Carol Reed of his first re-recording session. There was a last-minute hurry to ship copies abroad and once we started (I was the editor) we went on till the job was finished. It took eighteen hours. For Carol Reed it must have been torture. Not physically, but sitting there for hours while soundmen and editor did incredible things to his first-born. Things, as they always will, going wrong—an unsatisfactory effect, an error in synchronization, a failure in a soundhead. Till he must have despaired of ever seeing his film whole and healthy again. And thanked heaven, like the rest of us, for whisky.

Like too many films themselves, the end was anti-climax. The studio discovered it didn’t need the film in such a hurry after all.

Lunch. “Talk of the Devil”—so we did. It was made from his own story, which he had started to invent during the final editing stages of “Midshipman Easy.” I remembered his enthusiasm for it and the way he tested it out around the unit. The finished film was very faithful to that first conception. We talked about how the job was done of post-synchronizing to Ricardo Cortez’s lip-movements the voices of the other characters he was supposed to be imitating. The Cortez scenes were projected for the actors, while another machine projected the words they were to speak in a moving band across the bottom of the screen. Emphasized words were in capitals. The movement was so synchronized that the actors’ cue to speak each word was its reaching the right-hand edge of the frame. The whole job—post-synchronizing and subsequent cutting of sound-tracks—was done in France. "Interesting," I said, "but what about Carol Reed?" This was rhetorical. I knew about Carol Reed—his vigour in direction, his predilection for straightforward

(Continued on page 130)
Cyril Stanborough, F.R.P.S.,

Asks "Are Stills Worth While?"

Since entering the Film Industry at the end of the War, I have seen, like everyone else in the business, innumerable changes on the "floor," but from the still-cameraman's viewpoint I venture to suggest that with the exception of two or three studios in this country little or no change has taken place. He is still obliged, in most cases, to carry on under extremely inadequate working conditions and, instead of being regarded as the representative of a most important branch of a production unit, is more often than not, welcomed with as much popularity as a "pain-in-the-neck" and an individual generally responsible for "holding up the director's schedule"—a schedule sometimes drawn up by an over zealous or shall we say somewhat optimistic assistant-director?

No one in their right senses and with any knowledge of the movie-business could possibly suggest that stills were unimportant and therefore unworthy of discussion, for do not good stills, decently presented, do much to sell a picture, giving as they should, a pretty fair idea of the film from every conceivable angle? Are they not a means also of attracting the picture-going public in or sending them away to another theatre if they are uninteresting and badly presented? These two facts alone cannot for one moment be denied. Then of course we have the press angle, and we must therefore assume that stills are, after all, rather necessary to a production and the success it strives to achieve.

I further suggest that stills in most British studios are not generally given the time and the care they demand. One even now occasionally hears that time-worn "wise-crack"—if one can call it such—"Oh, it's only a still," meaning of course that the unfortunate bloke responsible for that particular drop of work is obliged, more often than not, to carry out his job under dire conditions, and in many cases in one-millionth part of the time a favoured director from the other side is allowed to weigh the pros and cons. of a simple shot or decide whether the leading-man should not, after all, grow a beard for the shot everyone is waiting to shoot!

A still-cameraman is always expected to "jump in" and, of course, "make it snappy." In a matter of one, two or three minutes he is expected, in the case we will say of a "model" shot—necessitating careful matching of set to model—to attempt to photograph something which the cameraman has probably been allowed a few hours or perhaps the entire morning in which to line up, irrespective of time taken on the necessary lighting. If the still in question is a success few admit it, but if, on the other hand, the result is "not so hot"—thanks to the all-round panic in which the still has been shot—then he is even more unpopular than ever (if that is possible).

In spite of the many years I've been at the game I am completely at a loss to understand why one of the principal means of publicising a production to the press, exhibitor and public is seldom given that commercial scope and importance to which it is unquestionably entitled. As it is there are times when still-cameramen literally have to

Carol Reed Talks To Us (continued from page 129)

narrative, his lack of superiority that comes from working alongside the men he now commands—five years' hard as assistant director at A.T.P. And his theatre years as stage-manager, his American tour with "On the Spot," his acting jobs in, among others, "Henry VIII" (Shakespeare, not Korda).

About that production—Thordike's at the old Empire—he had a good story to tell. "I was playing in one scene with Cardinal Wolsey. I had a long and complicated speech—you know, thirty lines with inversions and no full-stops—which wasn't to be looked forward to on the first night, especially since I had the stage-direction to look after too. However, I made my entrance and got through it all right. But to my horror Wolsey dropped his cue. Luckily for himself he was a real old trouser and rose to the occasion. Looking at me sternly, he said:—

"Say once again, what is it you would tell me of,"

And I had to go through the whole speech again!"

But I hoped for that inside story.

"What about your Hollywood trip?" I said, hoping perhaps for some reflex reactions to that malignant magical blasted and boosted name.

"Well, I was only there for ten days," he said disarming. "So impressions are just—impressions. And I didn't go with any idea of drawing comparisons, odorous or otherwise. I had a month to spare between pictures and had always wanted to get a glimpse of how they did things there, so I went. I'd've liked to stay longer, but I had to be back to make 'Who's Your Lady Friend.' I saw most of the big studios—M.G.M., Fox, R.K.O., Warners' and Paramount. What impressed me was the scale of their industry, which enables them to specialise departments in a way which our necessarily smaller studios can't. Back-projection, for example. Director tells them what sort of plates he wants and the action he's going to play in front of them. The specialists shoot the plates, then shoot tests of them with doubles going through the foreground action. On the scheduled day, director walks on the floor and directs his action.

"There seemed to be plenty of enthusiasm and lots of competition for jobs. And their preparation seemed to be very thorough. By and large, studio operation is much the same as it is here. And, I don't know, perhaps the future holds even more for us."

"And what about your own future?"

"In September I start 'Bank Holiday' for Gainsborough, at Islington, with John Lodge and Margaret Lockwood starring. And then in November I go back to A.T.P. to direct 'The Sporting Peer,' with Edmund Gwenn, for them."

"And after that?"

"Pictures," said Reed, "and more pictures. I hope. I like making them. And it's grand fun going on learning about my job."

Sidney Cole.
beg to be allowed to perform the job for which they draw
their salary because the director is "behind schedule," the
leading-man has a dinner date, the leading-lady has a
headache, and for many other similar reasons! I contend
that a man capable of securing first-class results in a very
short space of time must necessarily be a specialist in his
art and should be treated as such, and given every facility
and support within reason in order that results should be
a credit to producer and production alike.

Mentioning earlier the subject of salary reminds me
that there are still-cameramen—real specialists in their
job—whose weekly envelopes contain little more than
labourers' wages. Is it not high-time that minimum
salaries were fixed for all technicians? By technicians
I mean, of course, trained men who are capable of efficiently
executing their job and not inexperienced friends of in-
fuential members of a production company who "some-
how" manage to get in, endeavour to cope with a job for
two or three studios in this country who really do appreciate
the value of good stills and are therefore giving their men
every support on the floor to say nothing of well-equipped
processing rooms and portrait studios. But generally
speaking there is much room for improvement in this
respect, and the conditions under which some of my col-
leagues are seriously expected to turn out good-class work
is just a joke—if one is blessed with a large sense of humour!

We often read about the "disgraceful quality of British
stills." Those who frequently sling this sort of mud do
not know enough about the subject to explain why the
quality is not all that could be desired. I have often
heard people who should know better complain about the
photographic quality of a film presented at a Trade Show
when all the while the fault lay with those at the labs who
made the print and those who thought it "good enough"
to pass. But these critics in particular could not believe
this and had to blame the man responsible for lighting!

CHARACTER STUDIES BY CYRIL STANBOROUGH, F.R.P.S.
(Twickenham Film Studios Productions.)

which they are often hopelessly unsuited, and play the
heavy over their experienced though less fortunate col-
leagues who have got there by sheer hard work.

There appears to be a growing tendency for one still-
cameraman to cover two productions. Apart from the
fact that another colleague is dry-docked, I cannot see
how any man can possibly do full justice to the still and
portrait work of two productions running concurrently
and with the two stages nicely separated, even if he is
favoured with the services of a first-class assistant who
helps in the processing. I assume that this practice is
one of economy. I quite appreciate of course that the
man who is "asked" to do this has no alternative but to do
as he is instructed or fade out. I assume again that
with such a company a few good stills gained or lost
is just a minor point and which does not matter to the
production!

As I have already suggested there are, praise the saints,
Before condemning the quality of British stills, those
whose inkpots are full to overflowing should first of all
take the trouble to inspect studios where stills are taken
and processed under anything but ideal conditions—con-
ditions which would make some enthusiastic amateurs
unhappy. Were they so to do, good ink might be saved
and many conscientious still-cameramen's feelings spared.

I admit that some of these people, knowing mix about
photography but bravely criticiing the work of the still-
cameraman, have sometimes a chance for their complaints
by reason of the disgusting cheap-and-nasty prints turned
out like anaemic sausages by the thousand by so-called
"Commercial Printers," to whom the still-man's ngs
pass upon the completion of production. The results one
generally sees displayed outside the average cinema are
by no means commercial, but they are there because Mr.
Renter considers 2/9 per dozen 10 x 8 prints quite enough
(Continued on page 132)
ACCORDING to an editorial in the July number of W.F.N., two policies exist in British film production to-day: to make films for the world (including the American) market, or to make films for the British market. It is true that, financing apart, a product of the first policy is easier to make than a product of the second policy. If a producer has a footing in the American market, he can spend more money on his production. He can afford to import ready-made stars and expert technicians, whose recent work he has seen and applauded. When he has tired of them he can ship them back home and import some more. He gets prestige and tremendous publicity from his ability to employ famous and successful people. And he can honestly explain to his backers that they cannot expect to make money at first: the industry is new; until he came along its scope was negligible; he is one of the few who are introducing British product to the screens of the world; but soon they (the backers) will begin to reap the benefits of their far-sighted policy. In the end he and they talk themselves into the belief that it is always more economical to spend in excess of £50,000 than any smaller sum.

But what sort of industry does this policy build up? Will it in ten years' time still be importing distinguished foreigners? Will it occasionally deign to lift from less ambitious British circles the local talent which these circles have laboriously selected and cultivated? Surely this policy is that of trying to run before you can walk? Is not this the policy which has directly caused the present slump?

Let us examine the second policy: production for the local market. Here it is risky to spend more than £30,000 on a picture. The producer is at once on his mettle. An English visa, a swell flat, and oodles of charm will cut no ice in this market. The producer must know his job to the full. And he must have experience of local conditions and of local talent among players and technicians. He can afford only one lesser star and one featured player. In fact his brain must be as reliable as his bank balance.

Under neither policy is it worth anyone's while to promote one single production, for no producer can guarantee a satisfactory financial return on one film. The only sane way to go about it is to raise a sum of money scaled to a continuous production policy on the understanding that losses may be sustained in the first year at least; that the next batch of product will break even; and that

Are Stills Worth While? (continued from page 131)

and the shocking prints exhibited good enough! Those who are unable to differentiate between good and bad still prints cannot be justified in suggesting that the still-cameraman has run amok, so to speak, and that the specimens he sometimes sees are representative of the photographer's original unduped negative.

However, the "uncommercial" commercial printer is largely responsible for the more or less washing-out of that abomination—the miniature camera. A nice toy for the amateur who is quite satisfied if he is able to enlarge on art papers, but totally unsuitable to the still-cameraman whose work has to appear on 10 x 8 glossy paper with a minimum of grain. By reason of the "treatment" accorded "postage-stamp-stills" by the commercial printer, most of the best still-cameramen in the land, realising their negatives will one day pass from them, have wisely returned to the 10 x 8 negative and use the miniature outfit only when it may be of some use for a "grab" shot. Certain directors welcomed the advent of this "toy" as a means of dispensing with posed stills in order that they might have that little bit of extra time saved for themselves—to waste more often than not! The idea of "grabbing" a still during rehearsal or take sounds very good but it is seldom practical, for the still-cameraman has to shoot from a different angle chosen and lit by the cameraman, and composition and everything else naturally goes to pot.

One occasionally meets the artiste, famous for a couple of pictures, with whom the still-cameraman has to use much tact and patience. He (or she) considers stills such a bore, and owing to temper or and temperament, makes it extremely hard-going. If artistes are real good scouts they can do so much in securing good results. I have invariably found that the really worth-while artistes and those who have not found fame over-night, are the stillman's best subjects—and friends.

In short, if producer, director and artiste would take stills more seriously and less as a "joke," the still-cameraman would be in a far happier position than he is to-day and that extra bit of support would, I am sure, do a good deal towards placing British films still further on the map.

I regret I have little to illustrate these few remarks in the nature of suitable stills. I regret all the more that I am not a Tom Webster, for a few cartoons depicting the average still-cameraman in action would, I think, put the recent Farr-Louis scrap completely in the shade!
the policy will only expand if the financial returns justify such expansion. It is then up to the producer and his technical associates. But if they choose to tackle the more modest policy of the local market, they will be starting with both feet on the ground. They will be the experts, not a bunch of importees who would not have left their own country if they could have got as good an offer there as here, and who tend to find fault with their new subordinates rather than adapt themselves to local conditions. They will have to select, train, and encourage new blood, backing their own judgment of promising talent instead of amateurishly hiring ready-made "aces." And, incidentally, they will be building for the future a solid and expanding national industry instead of starting in top gear a plant designed to work expensively, but unable to guarantee anything but a "hit or miss" standard of product, and which can only claim international qualities by the obvious absence of any national qualities.

One of the worst aspects of the policy of trying to break into the world market before conquering your own is that the preponderance of aliens in key positions in the industry not only tends to produce a product lacking national character, but also develops an unhealthy minority complex in the rest of the technical staff, who are of local growth. The British technician is a product of a system which trains its youth to respect its elders. The youth of this country develops more slowly and matures later than the youth of most other nations. The young British technician develops more rapidly under the guidance of men of his own country than under aliens, who, strangers in a strange land, often fail to adapt themselves to local conditions. It is harder for a technician to produce good results in a foreign country than in his own, particularly at first. (For that matter a local technician who has become accustomed to working in one studio finds it irksome suddenly to change over to another studio in the same city.) The alien is concerned with getting immediately good results, not in building slowly to achieve a permanent improvement. For, firstly, he is not likely to have his contract and permit renewed if he fails to deliver the goods pretty quickly. And he always has the anxiety of wondering how long he will be allowed to stay, and how long it will be wise to stay, bearing in mind the fact that as he was not much sought after when he left his own country, it may not be long before he is completely forgotten there and his prospects of home employment have entirely evaporated.

For these reasons the alien expert tends to watch his own interests in relation to those of his employer rather than to train the staff under him who should be his immediate concern, and whose subsequent competence should be the measure of the value of the expert’s present services. If, however, the alien looks forward to settling permanently in the country of his adoption, there is all the more temptation for him not to develop qualities in his subordinates that might bring them on to qualify for the position which he himself holds.

One finds cases of alien editors asking their assistants in the presence of their employers: “What have you been cutting this with? A blow-pipe?” One never hears the employer retort: “It is high time the assistants were taught better.” And if the assistant answers back in these circumstances he knows there will be trouble for him when he gets back into the cutting-room.

Or take the case of the expert foreign cameraman who orders his assistants to shoot exteriors in bad weather conditions, and then shows the work privately to the producers in the projection room with the comment: “How the hell can I get good results when the staff you give me goes out and shoots a bunch of crap like that?”

There are numbers of technicians in this country who are condemned to believe that they can never become first-rate in their profession because they never get that chance which is the legitimate adventure due to all promising talent. True, some of them do not deserve ever to get that chance for the simple reason that they should never have been brought into the industry at all. Nearly every production venture recently inaugurated in this country has been guilty of nepotism, both in bringing into the industry new blood that is unsuited for the work, either by temperament, upbringing, or sheer dumbness; and in promoting to positions of authority incompetent assistants; the only qualification in every case being blood relationship with the powers that be.

However, in spite of the fact that entry into the British film industry is entirely unregulated and no comprehensive scheme of training has yet been introduced, a considerable proportion of the technicians at present working or unemployed are potentially of the first class, and a sympathetic combing of the industry would soon surprise them into the light of recognition.

As it is, promotion in our industry is largely a haphazard, negative affair, based on sudden necessities which leave no other course open. And the surprise of the employer and technician concerned, when it turns out that the promotion was justified, is inevitably followed by a canny feeling on the technician’s part that if the employer had had more faith in himself, promotion, and the promotion of others still subordinate, could have taken place long before.

In a recent case, a camera operator of long standing, who was obviously ripe for promotion to control of lighting, was ignored and put off by his employers for many months. He has now gone and proved his qualifications to a rival firm, who are successfully employing him in a position which none but aliens hold in his original studio. In another case it took six conversations to induce a certain producer even to examine the work of a new British director. Next day the producer offered the Britisher a film for immediate preparation and direction.

And so one could go on quoting instances of the neglect to build within our country, and of the easy, weak policy of looking abroad for established talent. The slump proves that too many producers were incompetent even when supported by the cream of alien talent. Too many of them liked to make expensive films so that they could pay themselves expensive fees. When their films flopped they floated other companies, and up they bobbed again. Now the slump has taken the market value even out of their charm, let us take confidence and learn from our experiences. Let us believe in ourselves, welcoming the foreigner more judiciously, building our own industry for the exploitation of our own markets, before we begin beating our heads against the wall of opposition with which the Americans have surrounded their market. Then, as we begin to record small but definite results, and begin to make films strangely British and strangely likeable to our own people, we may again attract the honest sympathy of financial interests—those financial interests which have lately retired hurt, drained of resources, and sore at being proved suckers by promoters who were no more film-minded than parasites ever are.
Antarctic Cameraman Talks on his Apparatus

MR. JOHN RY MILL, the leader of the British Graham Land Expedition, has written to tell me that The Cine-Technician is anxious to hear an account of the results of the use of the Vinten Cinematograph equipment which was provided for our expedition, and as "cameraman" I gladly do so.

I used the camera throughout the period of the expedition. The first shots were taken at the beginning of February, 1935, and the last, which were exposed in September, 1936. Throughout that time, when 25,000 ft. of film were taken, there were no defects of any kind in the mechanism, despite the fact that the camera was used in varying and often rigorous conditions. This is a higher tribute to the quality of the apparatus than might at first appear. It had to stand up to temperatures which (at a conservative estimate) varied from plus 45° F. to minus 35° F. I did not hesitate to take the camera out in blizzards when the apparatus would be erected in blinding drift snow. On taking the camera indoors again it was almost impossible to avoid condensation, despite wrapping it in blankets. Even though the camera was carefully wiped, it could not have been too good for the instrument to be subject to heavy condensation of water on the entire air-exposed metal surfaces and yet no apparent harm was done.

The finder lens holder became slightly bent, and one of the tripod legs was broken (but repaired) owing to the camera falling heavily, but I was both surprised and relieved that the effects were no worse. One part was lost, namely the spring which fits inside the long nut which holds the revolving turret in place. This fell on the snow and I could not find it again (rather like looking for a needle in a haystack) but fortunately it was not an essential part.

The biggest criticism I have to offer with regard to the apparatus applies to the tripod.* At first I found the greatest difficulty in a shaking of the whole camera when turning the handle. You must bear in mind that at cold temperatures the force exerted in turning the handle is bound to be greater than under normal conditions and this helped to accentuate the vibration. There was no play in the tripod legs themselves, and the movement seemed to be one of the tripod legs shaking on the ground itself—which would be favoured by the high centre of gravity of the camera when mounted. The only way in which I could cure this vibration was by suspending a heavy weight from the centre of the tripod so as to keep it more firmly to the ground, and I found this necessary whether the tripod was mounted on rock or snow. There was even greater difficulty in preventing jerkiness when swivelling the camera for following moving objects or when taking a panorama, and however I adjusted the screws which control the pressure needed to swivel, I found it almost impossible to prevent jerkiness. Probably in normal temperatures this difficulty would not arise, but I would suggest that in a polar climate a rack and pinion for both horizontal and vertical swivelling would be most desirable.

It was natural that the lower the temperature, the greater the force needed to turn the handle, but curiously enough during the second winter—when we experienced colder temperatures than in the first winter—the machinery ran more easily. I imagine that not only the quality of oil used in lubrication, but also the quantity, are most important factors when using the camera in cold temperatures.

One of the most pleasing features of the camera is the direct view-finder, whereby one can, before taking a shot, look through the actual taking lens. When I became accustomed to the four different lenses which were provided, I found it far quicker and more satisfactory to judge the right exposure (i.e. diaphragm-stop) by estimating the amount of light coming through the lens than by using an exposure-meter; for example, with the 2-in. lens the correct exposure was with the diaphragm turned down until one saw the scene distinctly but not brightly.

I had one peculiar difficulty. I found the exposed 1000 ft. reel, since it was wound on a larger-sized bobbin, would not fit back into the film tin. There seemed to be no satisfactory method to re-wind the film on to a smaller bobbin through the camera itself in the darkness, and I generally had to resort to cutting off the last 100 ft. and rewinding it by hand (always a clumsy method), or sometimes I did not expose the last 70 or 100 feet.

I was naturally anxious to take pictures of Graham Land from the air, and on the day when "Penola" arrived at the Southern Base to take us home an opportunity

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* The manufacturer of the apparatus asks us to point out that the apparatus was supplied at the last moment, time was not available to manufacture a special tripod, which would function satisfactorily in the intense cold experienced. For future expeditions a tripod running on ball-bearings is recommended. This will ensure easy working under Antarctic conditions.
The camera was mounted on a platform in the cabin with the lens facing a small opening which had been made for the aerial survey camera. On that day we were able to get 1000 feet exposed which I hope may prove successful.

There was no difficulty in keeping the camera clean and in good condition, but when I had not used the camera for some weeks I always found—despite following instructions and using the correct paste-rust at the corners of the gate—that I had to use emery paper to get the rust off. The camera is in reasonably good condition after its long journey.

Considering the fact that the film agreement was only reached and the camera provided at the eleventh hour before we sailed, and that as a result there was no opportunity for me to become familiar with the apparatus under instruction, I was surprised how easily I discovered how to work it. It is straightforward and simple, and the small book of instruction seemed to me wholly adequate.

If I was asked to take the film for a similar expedition in the polar regions again and given a free hand in choosing the equipment, I should have no hesitation in selecting the same camera with a different tripod (heavier, and with rack and pinion swivel), but in addition I should choose a reasonably small and light hand-camera with clockwork motor, which could be used for taking on sledge journeys and for shooting scenes which might be difficult to reproduce unless taken as snapshots.

I used to develop the tail of each film to see if the exposures were correct and the results seemed satisfactory, and I hear that 1000 feet have been developed and have given satisfaction; but I know that some of the shots, particularly the earlier ones, are failures.

I await the pleasure of seeing the films actually produced.

The Reverend W. L. S. Fleming.

Editorial Note.—The camera used was a Vinten. Large bobbins are a great protection against end-rub, the original bobbin can be slipped in place of the camera bobbin and the film re-wound in the magazine by turning the take-up wheel. The film will be then found to be the original size to fit the tin. May we suggest that a clock-work motor could be built so that the camera could be driven automatically on jobs where electric batteries and motor are impracticable. At the time when the apparatus referred to above was taken over in 1935 we understand that a large bobbin was used for protection against end-rub. Owing to the difficulty of replacing, etc., it was decided to reduce the diameter of the bobbin to 3½-in., this size being found to give the necessary protection against end-rub and at the same time permitting the full 1000 foot roll to be replaced in its original tin.]

Religious Film Studios

The Religious Film Society is establishing a Studio at Norwood where a building formerly used as a cinema is being equipped for the production of films, recording commentaries, making worship films, and editing and titling film material that may be acquired or produced.

THE CINEMA AS A GRAPHIC ART

By VLADIMIR NILSEN

Over 200 illustrations. 15s. net.

For the cameraman the technique of film photography is only the necessary means of realising the film’s artistic content. Technique, with such manifold pictorial possibilities at its command, cannot in story film be considered in isolation from the creative process. Every technical device has significance only in so far as it contributes to the expressive language of the film. Dissolves and fades, multiple exposure, optical combined printing, trick processes, sharp and soft focus, long-shot and close-up, tonal gradation of the image—all these are means of expressing content, the means used by cinema.

The creative element is the guiding one in the cameraman’s work, and technique is only the means of realising the artistic purpose. And if this be so, if his work involves elements of artistic creation, then it is clear that it will be governed not only by a technical methodology, but also by principles of an art methodology, which in this case may be termed the art of constructing cinematic portrayals.
"Per Ardua ad Astra"—with a Cine Camera

By HARVEY HARRISON
(Chief Cameraman, British Films, Ltd.)

WHEN the Royal Flying Corps took as a motto, "Through difficulties to the Stars," not even the most inspired visionary could predict the difficulties to be overcome, or the measure of success that would be achieved during the next decade. To-day flying is an accepted fact and the interest of the man in the street is too often bound up in speed or height records. The head work, the patient teaching that has resulted in British triumphs, is only known to those who have had a share in the foundations of these glories. Civil flying is coming into its own, the yearly races for the King's Cup give an indication of the continued progress in design and engine construction—the triumphs of flying boats and the safety record of our air lines offer an example of development and the popularisation of air travel.

But how many people give the proper value to the progressive work of the Royal Air Force.

In the old days men were taught to fly in a simple and hurried fashion. Dual control enabled the instructor to teach from the cockpit, but ground instruction was of an elementary kind. To-day, however, progress offers varied and interesting media for the tuition of beginners, and the Royal Air Force has been quick to adopt those which are applicable.

It is here that the cine-cameraman comes into his own.

The writer has completed the direction and production of five reels which are designed by the Air Ministry to give the Flying officer a concise and clear illustration of his job. Reels such as "Forced Landings" and "Rules and Regulations of the Air" give clearer illustrations of a difficult and most important phase than ever before.

To those interested in the technique of cine-photography the experiences of the cameraman may be of interest and of service, for he too has had to pass through his difficulties to the stars.

My first experience came in 1935 when, during rehearsals of the Hendon Pageant, I took the air in one of nine "Harts" practising formation flights, diving and other operations. The camera used was a Newman Sinclair 200 feet Auto-Kine which was held firmly against the chest. In straight flying this worked well enough, but aerobatics proved the necessity of some form of mounting, for the pressure during dives at 200 m.p.h. and the effect of slip stream made it impossible to remain erect, to concentrate on sighting and to operate the camera generally. To move the camera from one position was not only impossible but dangerous. Inexperienced gunners in "Pushers" during the war, who lifted the magazine from their Lewis guns without due care, found that this was torn from their grasp and sometimes went through the propeller behind the pilot, so powerful was the wind stream. Obviously it was necessary to devise some method of keeping the camera in a position where steadiness was ensured, the maximum visibility obtained, and at the same time where maximum manipulation was possible.

Many trial flights in which the Air Force took especial pains to help—nothing short of wrecking machines was too much to ask—resulted in several mountings being adopted for different effects. Continued experiments proved that cameras with outside spool boxes were useless and the total footage was taken with the Newman Sinclair. In the Hart machines the Lewis guns are mounted on a Scarffe ring and this was utilised. The movement of this ring is too abrupt and so a small fitting was attached to the machine gun mounting which allowed a generous degree of panning and tilting when following aircraft in general flying or special evolutions like "slow rolls."

But another difficulty arose. On this mounting the cameraman was dependent upon the pilot's viewpoint and naturally had to take from the angles resultant upon his course. So another fixture was employed—this time with complete success.
In war time a camera gun, mounted on the top plane, was used to record the correctness or otherwise of the pilot's aim. Aim was taken through the normal gun sights and the release cord pulled when the "enemy" craft came into alignment. The camera spool recorded the hits or misses that would have resulted if a Lewis gun had been used. Following up this idea, the camera was attached to a mounting between the top main plane and the engine cowling and secured by two leather straps. The camera release was drilled and a length of fine Bowden cable attached. This was led through the cowling to the front cockpit and a ring on the end of the cable wire enabled the camera to be set in motion. In order to stop the camera motion when desired, a very short spring was fitted and with this all difficulty in starting and stopping was obviated. The gun sight was used for sighting and focussing and manipulating the aperture with the left hand; the right was free for operating. By means of the telephone fitted to the flying helmet communication was maintained and the pilot guided in his course to suit the camera angles. These mountings were entirely successful for photographing all Evolutions.

Difficulties don't finish with mountings, for atmospheric conditions are not always favourable. Haze has sometimes proved a bogey, but this too can be greatly overcome by the use of correct filtering. To avoid haze, many cameramen have flown to heights above the clouds, but here, unless one is primarily concerned with cloud effects, over-correction is common, yielding a stormy or muddy effect. But where the aeroplane is the central object care has to be taken to find correct graduation. This again was achieved by special filtering.

It has been held that to obtain the finest photography in the air, magnificent and costly cameras mostly of foreign make are necessary, and that the technique from the point of view of the cameraman is only to be found abroad. Once again it can be proved that a simple British camera, and British methods can produce pictures which for clearness and beauty are the equal of any that have yet appeared. These films, which will be used in the training of our future pilots, describe evolutions which many costly feature films have failed to depict and to see them is to feel a great deal of satisfaction with what can be achieved in Britain.

Vincent, tailor, of 9 Old Compton Street, will give the boys (and girls) in the Association a discount of 15%. Offer is open for six months only. Remember to put your A.C.T. card in your old suit!

The Film in the U.S.S.R. A Correction

Tanar (British) Corporation, Ltd., have written to point out that the Tanar Sound System used in Russia is the Tanar Portable Equipment manufactured in this country and not America as was stated in our article in the previous issue. The equipment is of British design and manufacture, and is extremely simple and efficient. The recording tube, known as the Tanarlight, is the only part manufactured for the British Company in the U.S.A.

The main feature of the equipment is an Adjustable Optical Recording Unit which makes possible the adjustment of sound and picture exposures without altering the polarisation current and percentage of modulation. The sound and picture are recorded in perfect synchronism, on one negative. It is hoped to give further details of the Tanar (British) Equipment in a subsequent issue.
Leigh Aman in Leo's Den

Now that I have been absorbed by the Great Leo, I hardly notice the Californian sunshine—though we are having plenty. "Ars Gratia Artis" it says in huge neon letters above the studio. I don't yet quite see how they provide enough Art for the 5,000 employees, but it certainly is a remarkable place. First a few general impressions. Our department—Production—handles all work pertaining to the actual production of pictures, so I have an excellent opportunity of observing the functions of the various departments. The studio itself is very old-fashioned and chaotic in layout. One finds half the wardrobe at one end and the other half an hour away. The same with some of the dressing rooms. The distances from the stages are of course unavoidable. There are little old wooden buildings between great modern blocks, and of the twenty-four stages there is every type that could ever be wanted, although apparently this accommodation is not considered sufficient, as the vast steel framework of five more is rapidly going up.

In spite of these difficulties the organisation and efficiency is amazing. Each individual has a job—and does it in perfect harmony with the others. There is a great deal of truth in Louis B. Mayer's slogan, which is seen all over the studio—"The greatest power on earth is an understanding and co-operative people."

M.G.M. works somewhat on the same lines as Denham, although, of course, there are many more complications. An order, if urgent, is phoned to the production department, who in turn phone it to the departments concerned. All these orders are confirmed in writing. Routine orders come in, are duplicated, sorted and distributed by the production department which, in fact, acts as a kind of post office. We also handle the distribution of calls, here known as "Three o'clock Reports." Needless to say, they rarely arrive at three.

An interesting fact about M.G.M. is that second assistants are only used in large crowd scenes or on location. Normally the unit consists simply of the unit manager, first assistant and script clerk—a boy. The organisation is such that these three can handle a production with ease. Another factor that helps is the unlimited amount of equipment. It is never a matter of "You can't have the velocito until so and so has finished with it." You just order it and it's there. There are a few small time and labour saving devices I should like just to mention. All nails are double headed, leaving a portion sticking out after the nail has been driven in. This saves considerably when striking sets. All cameras are fitted with a mike and speaker, the mike being just below the view-finder, so that the camera operator can give directions while he is looking at the set-up. Also metal tracks are exclusively used, ensuring smooth running. An interesting development from the process department is the use of the Steriopicon background. This is similar to back projection, but is a still instead of a moving picture. It is, in fact, a lantern slide and is used mostly for scenic backgrounds—saving the heavy expense of a photo-backing.

Getting back to orders. The official orders mean something here. If they mention the crew call as 8:30, then the crew—all of them—will be on the set at 8:30. Almost invariably the first shot is well under way by nine.

There is comparatively little late working—companies usually finish about 5 or 6 p.m. All this organisation helps to reduce the number of inevitable delays which occur. Such things as temperamental or difficult artists, an uncompleted script, etc., do exist, although one does not often see them. Recently a major picture was held up for nearly a week owing to lack of script. And a certain star has been known to wait till the morning before deciding whether she will work, thus necessitating the complication of a double call.

The equivalent of the production department here is the operating office at Denham. This works on the same lines, but not nearly enough is made of it. It might be said here that too much work is done and that some of it is unnecessary—such as the distribution of the following day's shooting orders to every department regardless of which department they concern. But this at least ensures there being no mistake and corroborates my remarks on "Over-preparing" made some time ago in The Cine-Technician. It is quite clear that preparation is one of the most important reasons for the advancement of American pictures over ours. As I write, the picture, "Rosalie"—a big musical—is in preparation. Many months ago the script, having then taken nearly a year, was completed. And once finished everyone knows that no more alterations will be made. This done, the work of preparing begins. The musical numbers are rehearsed every day for five or six weeks. Every day a squad of "cadets" marches past our office—in training so that when they eventually reach the stage they will work with military precision. The costumes are made, tested photographically and on the artists, altered—then scrapped or passed. The artists themselves are tested countless times for make-up, hair-dressing, wardrobe, etc. Meanwhile the Unit manager and director are organising location shots for process backgrounds in plenty of time, so they can be tested and the sets built to fit. The sound department are recording the
songs for playbacks. The Art department make elaborate models of every set, so that angles may be clearly visualised. All complete sets are tested photographically for colouring. The break-downs are made and all props ordered in advance, although of course most are either made or obtainable on the spot. The prop room is another of those departments the size of which it is difficult to realise. They seem to have everything! All this happens before the starting date is even announced. Finally, after sometimes as much as eighteen months, the picture is scheduled to shoot. By this time all theoretical difficulties have been removed. There remain only the practical ones!

There seem to be four classes of pictures made at M.G.M. Shorts (one or two reels) having a seven to fourteen day schedule. "B" pictures—feature length but with no real stars—with a fourteen to twenty-one day schedule. "A" program pictures with one or two stars running four or five weeks and lastly the well-known M.G.M. "supers," scheduled usually for six or seven weeks, but often running far over. An important fact about all these classes is that nothing is passed until it is considered the best obtainable. A recently completed picture was not considered good enough, so with three separate units and directors working simultaneously, almost the entire picture was reshot in just over a week. This unit scheme is practiced a lot here. Nearly always location work is put in charge of a different director and crew, thus saving more time and expense. And on the really big pictures, retakes will often last three or four weeks.

These few remarks may perhaps just give an outline of the working of this vast organisation—where at the moment nearly £2,000,000 worth of pictures are being prepared or shot! One must realise that the picture industry ranks third in importance in America—only exceeded by the motor and steel industries, so that it is quite natural a large amount should be invested in it.

But now that Hollywood (or rather Culver City—one has to be careful) is deserting Hollywood and M.G.M. is on its way to England, all this will probably be old news. It is quite extraordinary how everybody I meet here wants to work in England—the competition to get on the English unit rivalled our own enthusiasm to go to Hollywood. Such is fame!

In conclusion, I should like to mention "Talking Pictures" by Barrett C. Kiesling, to be published shortly in England. Mr. Kiesling is in the publicity department at M.G.M., and his book should prove of interest to amateurs and professionals alike.

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**Unemployment in the Industry**

A.C.T.'s Employment Bureau is the only technical employment agency in the industry and therefore an accurate barometer of production. The following figures show the serious position which has developed during the present year.

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**STUDIO FILM LABORATORIES LTD.**

- Title Specialists to the British Film Industry
- 80-82 WARDOUR ST., W.1
- GERRARD 1365-66
Cinema Log

Another Union Jack on Order

Congratulations to "Wilkie" Cooper, the promising young British camera technician of London Films, on his first lighting assignment, on "Conquest of the Air." "Wilkie" is the son of cameraman D. P. Cooper and has spent many years under his father's guidance in receiving a sound education in cinematography in preparation for his great chance. Not only is this a much deserved "break" for a first operative cameraman who has turned on such epics as "Farewell Again" and "Fire over England," but it should naturally mean a stepping-up for the other boys of the unit. This would be a healthy logical sequence of regular promotion for British technicians.

By KENNETH GORDON

From Films to Television

Alexandra Palace, now the home of Television, was once a film studio. It was the first studio in the world to be fitted with "inky" lighting and was equipped with G.E.C. gas-filled lamps, which were not a great success at that time owing to the negative stock used. Yes, I am talking before the War—in 1913. They also had outside stages with the sunlight diffused by "butter muslin" blinds. Strange as it seems, their trade mark was "Big Ben"—the same as London Films. This firm was a subsidiary of Pathé.

Secret Preparations for Irish Studios

A major Ulster cinema circuit is working, in secret, on a scheme to build studios in or near Belfast capable of turning out three feature films a year with comedies and shorts. Local acting talent will be developed. Finance will be found, if the project matures, by the circuit, and it is claimed by the promoters that the Irish rentals alone should show a small profit. The resulting pictures should give a very necessary attraction to Irish theatre programmes. We wish the principals "good luck." A.C.T. Employment Bureau can find the right skilled technical staff to assure success.

Japan goes Western Electric

Fated to leap from war to war, Baron H. von Zeppelin, a member of the famous aircraft family, who was directing Western's recording activities in Spain until the Civil War forced suspension of sound picture production, has left for Japan on his appointment as manager of W.E.'s recording activities there, and so enters another war zone. The Baron spent some months observing recording technique at British studios and later went to New York, where he made an extensive survey of the latest developments in sound recording and reproducing.

Pots and Praise

Two Denham films received the highest awards when competing with forty films submitted by sixteen nations at the Fifth International Film Exhibition at Venice. "Victoria the Great," the Herbert Wilcox production, received the premier award, and the prize for superb direction went to Robert Flaherty for his "Elephant Boy." Joe Rock's film "The Edge of the World," produced by Michael Powell on the island of Foula, has received universal praise from the critics and looks like showing a record profit. Readers will remember that Tregellas, the recordist of the unit, wrote of his experiences on the island in a previous issue, and now we understand that Michael Powell has put pen to paper in a much more ambitious form. His "200,000 Feet on Foula" will be published by Faber and Faber early in January. Mic Powell has made a very sincere job of the picture, and we trust he is not allowed to stagnate, but is given jobs worthy of his ability. He has too long been wasted on quickie trash. The photography by Ernest Palmer has superbly captured the atmosphere of Foula and has enhanced the success of the picture.
FROM GREENLAND'S ICY MOUNTAINS...

North Pole or (as in this case) South, through blazing desert or the chill silence of mountain tops, it is all one to the Vinten Camera.

"I did not hesitate to take the camera out in blizzards . . . in blinding drift snow."

So writes the Rev. W. L. S. Fleming of the British Graham Land Expedition, in his thrilling letter reproduced elsewhere in these pages.

There are no "repair shops" handy in the Antarctic—a cine-camera must stand or fall by its performance and endurance.

This camera both stood and fell (the latter many times), but it survived its two years' hard use, far from help, and, to quote the Rev. Fleming, "there were no defects of any kind in the mechanism."

Honest workmanship, my Masters, wrought by honest British toil.
Paul Barralet

Takes a Busman’s Holiday

AFTER working in the various studios for eight years without a holiday, I decided it was time something was done about it. English seaside resorts did not appeal to me, the Lake District is beautiful but always wet, and Paris is good (but expensive) fun for a week. What I needed was a complete change, as far away as possible, and my thoughts dwelt on India. As this looked like being a pretty expensive trip, it seemed quite an idea to turn it into a busman’s holiday, and so, with the idea of making a few shorts and sequences for the pictorials, I packed up my Debsie outfit and 20,000 feet of film, and hoped to cover part of my expenses!

On a cold, damp February afternoon I left Marseilles and within four days was enjoying the glorious sunshine in the Suez Canal; eleven days later we arrived in Colombo. Having been here ten years before, I was able to look up lots of old friends. In fact, they gave me such a grand time that work was almost forgotten, but after a week of jollity I got down to it. I wanted to make a picture around one of the many quaint little fishing villages and had a simple story ready, but although the men would act for me, it turned out that the native women were not allowed to do so by their religion (even in the native theatre the women’s parts are all played by men). Disappointed, but not daunted, I decided that the subject was too good to cut out, so I turned it into a documentary, and now I am not sorry, for it looks like turning out better than the original idea. The palm-fringed shore, with the quaint little boats (catamarans), made grand pictorial shots which it was impossible to resist. Although I did not quite like it, I decided to go to sea in one of these frail craft, but was glad to find that they stood up to the big waves surprisingly well, and I was able to get several interesting angles of the men casting their nets and bringing in the catch. A friend introduced me to a member of the Education Board, who allowed me to take some scenes at a native school, where they staged one of their national dances for me, and I learnt later that the children are taught the old-time dances of their forefathers in every school in the country.

My first tests showed me that exposures had to be carefully watched, as in the open they need to be cut down a great deal, but in the shade it was necessary to open up to as much as possible, as the bright sun made the shadows almost black. To even this up I decided to use several filters—a neutral density for all longshots on the beach and open country; a “G” for general use; and an Aero 2 on close-ups, also using bright silver reflectors to get details into the dark faces of the natives.

Moving on to Madras, I experienced my hottest and most unpleasant thirty-six hours of railway travelling. Madras is a pleasant little town and just outside there are some extremely interesting temples and buried cities—although these subjects hardly had enough life for good film subjects and I therefore took very little footage. I then decided to fulfil my greatest ambition and enter the jungle. After engaging six boys to carry the outfit, we trekked for six days without seeing more than a couple of snakes, some deer, and thousands of monkeys (my admiration for Mr. Frank Buck has now increased a thousandfold). There was one very exciting thing I did encounter, and that was a Veddah village. Here live a rapidly diminishing tribe of wild men, right in the heart of the jungle. Their methods of hunting are still the primitive bow and arrow, and after making friends with the head man, I took some novel shots, showing how they kill game and dry it in the sun. Talking about sun, it was always a problem to know the best method of keeping the film cool. Ice is not very satisfactory, as it is very heavy, and when melted might get into the magazines. A thick wooden box with a waterproof cover acted quite well, while a big umbrella over the camera in the heat of the day also helped. As far as possible, however, I worked in the early morning and again in the afternoon when the light was not too hard and contrasty, but when filming animals it was necessary to take shots at any hour.

Paul Barralet filming Ceylon’s wild men, the Veddahs in the Jungle.

A.C.T. GETS YOU ANOTHER PRIVILEGE.

Messrs. VINCENT OF 9 OLD COMPTON ST., W.1. (Phone: Ger. 3733)

Are Specialists in the very smartest LADIES’ AND GENTLEMEN’S TAILORING, each Garment being cut and made for you, not cut to a factory pattern.

SO TAKE ADVANTAGE OF THE FACT THAT THE A.C.T. BADGE MEANS 15% OFF FOR THE NEXT SIX MONTHS

AT VINCENT 9 OLD COMPTON ST., W.1. Ger. 3733
Using a Weston for Best Results

To get the best results with an Exposure Meter it is necessary to apply the fundamental principles of photography. In practically every scene there is one central point of interest which should be accurately exposed. The secret of good photography is to expose your film for the object of interest and to subjugate the background. In other words, let the background take care of itself—it should not dominate the scene. By using the following method, the background in a scene will serve its true purpose—it will emphasise the central point of interest and will act as a complement to it.

Example.—Let us assume that we are photographing a grey cat reclining at the base of a brilliantly lighted wall. At a distance of 10 feet from the wall the meter brightness reading is 600. The meter is now registering all the light reflected from a circle 10 feet in diameter. If the camera is set in accordance with this reading, the cat (central point of interest) will be under-exposed and the wall will be directly exposed. The meter is not being properly used.

The correct method is to isolate the cat from the background—in other words, reduce the size of the imaginary 10 foot circle by approaching the cat. With meters having acceptance angles of 60° at a distance of 20 inches, the circle will now be 20 inches in diameter. It includes only the cat—you have isolated him from the background. Assume a reading of 25 at this position, set up the camera at any distance from the wall, and expose the film on the basis of a reading of 25. The central point of interest (the cat) will now be perfectly exposed.

In general, the meter should be held at a distance equal to the minimum dimension of the object being photographed, regardless of the camera position. When necessary to use the meter at the camera position, eliminate all bright sky light by shielding the meter as you would a camera lens.

The above notes refer to the Model 650 Universal and Leicameter, which have acceptance angles of 60°. With the Model 819 Cine Meter, the above distances must be modified to take care of the acceptance angle of 25°.

Comparison of H & D, Scheiner, Din and Weston Speed Values.

The various emulsion speed values now used cannot, in general, be compared directly with each other, except possibly H & D and the Weston speed values for the reason that they are based on entirely different principles.

The Scheiner and Din speed numbers have no definite relation to each other, nor to the other speed values, except for emulsions having the same characteristics which, however, are quite different for the various kinds of commercial films or plates.

To give a rough idea of the relation of the various speed values a comparison is given below for a type of film having the same characteristic as an ordinary commonly used film, but as stated above, the relative values do not hold for other types of emulsions and must, therefore, be used with due caution.

For example, a report of an actual test shows that 26° Scheiner may be equivalent in Din degrees to any value from 1210° to 1710° Din, which corresponds to a ratio of over 3 to 1 in sensitivity. Further, 1810° Din may be equivalent in some emulsions to 65 Weston and in others to 24 Weston.

Caution.—Do not use this table without reading above.

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Note.—The above tables are accurate for converting Weston Numbers to Weston Scheiner Numbers.

Manor House Hospital

Extensive building operations have recently been under way at the Manor House Hospital. They include a new wing of wards, comprising a further 63 beds, and a new block of operating theatres to be officially opened shortly.
Editorial

The Government has issued its White Paper on Film Quota. We welcome in general many of the proposals as incorporating some improvement upon the previous Act. But we also feel that the fundamental issues confronting the British film industry have not been faced. We particularly deplore the fact that there is no more recognition of British technicians in the White Paper proposals than in the previous Act. They receive no protection by a fair wages clause, which, in our opinion, is essential to the equitable working of the labour costs proposals, and, in fact, to the reorganisation of the industry on a rational basis. There is no protection against the continued employment of foreign technicians in major positions at a time when there are a large number of British technicians unemployed who are capable of filling such positions. The White Paper, in fact, tends to promote the financial existence of the British industry without in any way providing for its continued technical growth. Double quota coupled with an initial lower quota, as proposed, may well lead to less employment and to the ironical position of technicians being turned out of their jobs through an Act of Parliament intended to foster the industry.

A.C.T. is now an integral part of the Trade Union Movement, by reason of its recent election to membership of the Trades Union Congress. Affiliation means that henceforth there will be closer co-operation between film technicians and four-and-a-quarter million other workers in various spheres of industry, all imbued with parallel objectives and taking common action on matters of common interest. The inter-union agreement with the National Association of Theatrical Employees was a preliminary step to this affiliation and we are glad to hear that the Electrical Trades Union, the other big employees' organisation in the industry, has recently had its initial meeting with A.C.T. representatives with a view, we understand, to a similar Agreement. We trust that a further step will see the setting-up of a body similar to the old Entertainment Industries Federation, upon which all employees' organisations in the industry will be represented. Such a step seems to us not merely imperative in the interests of all film workers but a necessary corollary to the recently formed Employers' Federation.

We are glad to hear that the General Council of A.C.T. has asked the Rt. Hon. Ernest Brown, M.P., Minister of Labour, to receive a deputation with reference to the continued employment of foreign technicians. We understand that one of the points to be raised by the Association is a claim that the conditions attached to an application for a labour permit are seldom observed. Under the Aliens Order, 1930, a company has to declare when applying for a permit in respect of certain foreigners that no British subject will be displaced or excluded in consequence of the employment of the foreigner in question. Further, the applicant has to claim that the proposed employment of a foreigner is reasonable and necessary in the circumstances that every possible effort has been made by the employer to find suitable labour from among British subjects. We shall await the Minister's explanation with interest, as it appears to us that there has been grave breach of these regulations and conditions in the vast majority of permits granted.

The Government has recently appointed a Committee, under the Chairmanship of Lord Amulree, to investigate and report on the question of holidays with pay. Holidays are essential both for health reasons and as an aid to industrial efficiency. Opportunities for such holidays ought not to be accompanied by loss of income—leisure without income being, in fact, a cause of added strain rather than an opportunity for recuperation. Yet there are probably not more than 4,000,000, out of a total employed population of 18,000,000, who at present receive holidays with pay. Belgium, Sweden, Denmark, Norway, France, the Irish Free State, and other countries legally stipulate for holidays with pay for most, and in some cases, all employed persons. The increased cost in this country would be well off-set by the gain to industry generally and we trust that Lord Amulree's Committee will recommend that the lead of other countries be followed when it presents its report.

"Victoria the Great" and "The Edge of the World" are recent examples of the films which British companies, in the full sense of the word, can produce. Technically both productions have received exceptionally high praise, and this is particularly pleasing as the crews were almost exclusively British. The cameramen—Fred Young and Ernest Palmer—provide an excellent answer to those producers in this country who claim that it is impossible to make a technically good picture without a foreign cameraman. Palmer particularly has shown that a young British cameraman can make good if given the opportunity, and we trust that the authorities will note and act accordingly.

No Smoking

OUR PORTRAIT GALLERY.
Sidney Cole (Vice-President).
FUN AND FROLIC ON A.C.T.'S RIVER OUTING.
National News.

Cecil Snape, completing his contract as Editor with the W. C. Jepes Universal Talking News, has let a cat among the pigeons by announcing that he is floating an independent newsreel under the Sound City aegis, calling it National News. Declaring his policy will be quite different from existing products, he will, we believe, adopt ideas somewhat like the "March of Time" in editorial construction, but of course with the usual bi-weekly issues. Humphries will process the News production and processing will be managed by Jack Wiggins, that up-to-the-minute newsreel Lab. "veteran" who has vacated after many years the Works Management of Film Laboratoires. His daughter, Miss Nellie Wiggins, will be in charge of the negative cutting. Commander ("the fleet's lit up") Woodrooije will do the commentary, and amongst the camera staff engaged are Leslie Murray, who leaves Movietone, Humphries and Owen from G.B. News, Swan and Jerry Somers from Universal News, and Bartholomew from the ranks of the free-lances. Barnes Heath will have charge of the studio recording. We have reason to believe that promotions will be made from the dark rooms to camera staff by Mr. Snape. It is too early for judgments, but it does mean that fresh competition enters the newsreel game. The rest of the reels are dusting the cobwebs from the editorial sanctums and filling the oil cans so that the wheels may turn a little faster. The next few months should see plenty of fun and frolic and result in newsreels that technicians are proud to have turned out.

When Alf Tunwell Broadcast

Talking about broadcasting the other day, I was reminded that Alf Tunwell, Movietone newsreeler, was the first cameraman to speak on the air. This was two years ago, when the B.B.C. decided to brighten the Sunday programme and he spoke for twenty minutes in the feature "Other Men's Jobs."

Newsreel

When is Fredman going to Edit the Reel?

Ernest W. Fredman, the "Daily Film Renter's" hard-hitting editor, accepted a challenge to edit an issue of the G.B. News, following an article criticising newsreel policy some time ago. We await with impatience the results; new ideas are at a premium. Why this delay?

Sir Hubert Wilkins

I wonder how many of those reading in the papers about the attempts of Sir Hubert Wilkins, the Arctic explorer, to locate the Russian Pole Flyers in the American Arctic remember him when he used to trundle a cine-camera in Wardour Street. Sir Hubert was a newsreel cameraman on the Gaumont Graphic and I well remember him filming the Balkan War in 1912. He used a Matchless motor-cycle and sidcar for transport and I'm sure by the terrible condition of the tracks he must have pushed it all the way from Constantinople. Every now and then between his attacks on the "Poles" by submarine, plane, or plain sledge, this quiet bearded figure potters around newsreels to see his old friends and renew acquaintance with the game he still loves.

Crash

Racing to Brooklands, one of the Pathé sound fleet was wrecked in a serious collision near Cobham. In the unit was cameraman, Jock Gennell, and the driver was "Major" Williams. Luckily neither was hurt. But the car was completely smashed, the salvaging firm offering Pathé £4 for it as scrap. Luck was with them, inasmuch as the camera and gear were unharmed, but the delay prevented these boys from obtaining a real news scoop because they would have been the only company to film Mrs. Petre's crash while practising on that day—hard luck!
What the Public Like—But Who Are They?

Loves and Hates

Every two or three years, Sidney Bernstein, well-known cinema owner, circulates a questionnaire to his patrons. The latest was issued to 325,000 of them and 159,723—or to go statistical ourselves for a finger-counting moment—491°, took the pains to reply.

Results are interesting if not startling; cartoons, for example, are voted the most popular kind of short. Top favourite stars are: Men—Gary Cooper, Clark Gable, Charles Laughton, Robert Taylor, Ronald Colman, William Powell. Women—Norma Shearer, Myrna Loy, Greta Garbo, Ginger Rogers, Claudette Colbert, Shirley Temple (who just "pips" Jessie Matthews for sixth place). Norma Shearer has held her premier position in three successive votes, 1932, 1934 and now. Garbo, too, has been placed in the first six each of these times. Colman has been first, sixth and fifth. Gable maintains second place from 1934, despite challenge of "luggage-lift" Taylor, placed fourth on his first appearance.


Cagney was top dislike in 1934 and still is. Lynn and Joe Brown also maintain themselves in the first six, with the addition of Chaplin, Laurel and Hardy and Karloff.

Mae West and Greta Garbo are still first and second among the women dislikes. Constance Bennett, Dietrich, Crawford, also retain places among the first eight, with Hepburn and Zasu Pitts.

(Continued on page 149)
The Last Rideout

A Review by LOVAT CAVE-CHINN

I think, perhaps, that I had better quote the opening paragraph of the introduction to this book* in order that prospective readers may know what it is all about. "The principal aim of this book is to furnish a critical appreciation of the better American sound films shown in England. Incidentally some observations on their exhibition and upon the response to them have been included. . . . No further apology for confining attention almost entirely to the American Film is needed beyond remarking that more than two-thirds of the films shown in England are of American origin, and that, with few exceptions, they are far better productions than those of any other country. Some notes on the best films of Continental Europe seen here, and upon the outstanding productions of English studios, may afford an indication of future possibilities."

Well, now you know! or do you? For, having waded with great care through Mr. Rideout's critical appreciations, I am left with the feeling that it is a great pity that he has failed to see so many of the better pictures of recent years— or has he just a bad memory?

Nearly two-thirds of this book is given up, as the dust-cover tells us, to "analysing the work of some sixty directors." To me this is merely a collection of film reviews, rather vaguely arranged, and giving no true picture of the men thus analysed. And underlying it all is the feeling that what Mr. Rideout is really interested in is photography. Throughout the pages devoted to directors one finds almost equal comment on the work of cameramen, though I cannot say that the author's remarks on this subject are in any way enlightening. As for instance:—"Capra rarely indulges in fancy photography. With Joseph Walker as chief cameraman on his recent pictures we have . . . good atmospheric shots in dark streets of convincing obscurity." "This obscurity, by the way, may become rather too pronounced: it did in the earlier Walker films, as worn copies are projected with insufficient screen illumination." Again, "the harsh brilliance of the photography of James Wong Howe and Charles Clarke, . . . ." And yet again, "Furthermore, and of fundamental importance, great as the possibilities of the optical printer may be in trick work, in the smoothing out of minor inequalities in the matching of shots, one cannot tinker with the development in the old-fashioned hope of disguising defects of exposure. Modern methods of continuous development by machine throw the whole responsibility for negative quality back upon the cameraman and his judgment."

I agree with him here. "'Reckless,' photographed by George Folsey, contains one or two external shots of great beauty, but we still have to suffer a glimpse of the M.G.M. studio sea by moonlight. We can almost recognise the ripples by now." Theodor Sparkuhl and Ernest Palmer, A.S.C., take a rap with "Caravan," a film with good tunes destroyed by its flimsy camerawork as much as by its futile scenario."

Of Lee Garmes he speaks for and against, "'Zoo in Budapest' was an exceedingly beautiful film, photographed so beautifully that attention was diverted from the story." "'Smiling Through'; Lee Garmes, the photographer, appears also to have been in a venturesome mood; once or twice, indeed, rather irritating with his soft focus effects."

Altogether Mr. Rideout writes at some length on the work of more than thirty Hollywood cameramen and it was, therefore, with considerable interest that I turned to his chapter on "The cameraman." But disappointment awaited me here, for only four pages are devoted to "the man who puts the picture on the screen," and this in spite of the fact that the author himself says: "Essentially the cinema is a visual art. Its stories are told in a series of images—photographs which flow across the screen to the accompaniment of dialogue and music, either in contrast to, or in unison with, the visual theme." Gregg Toland is obviously the author's No. 1 cameraman and he writes of his work in de luxe fashion, with also ran Karl Freund, Rudolph Maté, Charles Rosher, Karl Struss and Tony Gaudio.

Even though he has a chapter on the British film there is no mention of that great artist, Georges Perinal, whose work, in my humble opinion, is the equal of anything that Hollywood has ever sent us.

And what about our own natives, Fred Young and Bernard Knowles, to name but two whose camerawork is outstanding. Alas, they are British! If only they had been christened Friedrich Jung and Bernhardt Nobles, they might have stood beneath the Union Jacks not a thousand miles from Uxbridge and cried "Denham Uber Alles!"

At one point Mr. Rideout goes all technical, and whilst he says, "It would clearly be out of place in this account to attempt to write a text-book on cinematography," yet he delves into technicalities. I would suggest that in future works he has his data "vetted" by a member of the A.C.T. Technical Research Committee. The picture aperture is 0.631 by 0.888 inches and not 0.838 as stated in his book.

But let us pass on. The Art Director comes in a very bad third, with only four men receiving mention in two and a half pages. The Editor is less lucky. He is not discussed at all.

Chapter VI. on Sound gets nine pages, but here the author is wise and steers clear of electrical phenomena, contenting himself with dealing mostly with screen "musicals."

The chapter on Colour is devoted chiefly to discussion of "Becky Sharp" and finally "The Garden of Allah." And here again I cross swords with the author. He gives all credit for this picture to the director, Richard Boleslawski, and the colour designer, Lansing C. Holden. But why no mention of Hal Rosson, whose close-ups of Marlene Dietrich were, to my mind, magnificent. Indeed, throughout this book the work of Hal Rosson is ignored except in a criticism of "As You Like It," where, without mentioning the cameraman by name, he says, "the photography lacked imagination, especially in the forest sequence where shade was little chequered by sunshine." I consider Rosson made a grand job of work of this Berghner vehicle as he did of Rene Clair's "Ghost Goes West," and there is no doubt that M.G.M. rank him very high, for he is with us again as cameraman on their first British picture, Robert Taylor's "A Yank at Oxford."

"The Story" and "The Players" lead us to Chapter X. on "Exhibition," and here once again I join issue with the author. He says, "When so much painstaking effort to secure technical perfection has gone into a film, both producers and audiences have the right to demand an equally high standard of efficiency in its projection. . . . This they rarely obtain. . . ." "The quality of the print
often leaves much to be desired..." "Dirty screens; sound so excessively amplified as to be painful...
" "Our projector steadily out of focus for weeks...
" "Nor were such faults confined to poverty-stricken independent exhibitors, but were frequently at their worst in houses under the control of the largest British circuits...
" And more in like vein! And there is no doubt that there is a lot of truth in all these accusations; but has the author set out to discover why these faults exist? I would suggest that the next time he meets these imperfections in exhibition that he look into the conditions of the man responsible, the projectionist, and maybe he will find there things that will surprise him. Often a wage that is an encouragement to go on the dole; sometimes apparatus that should have been scrapped long ago; and long hours in badly-ventilated boxes that sap a man's energy and play havoc with his health.

And so to the concluding chapter, "The British Film." And here Mr. Rideout treads on dangerous ground and, I regret to say, writes without a true knowledge of the facts. He says, "It may be considered a remarkable coincidence that only in a year in which the Quota comes up for discussion before a government commission has it been found feasible to provide British producers with up-to-date commodious studios fit to compare with those of America. He then mentions the success of such films as "The Private Life of Henry VIII," "The Scarlet Pimpernel," "The Ghost Goes West," and Miss Jessie Matthews' films.

Well, in the first place, the "up-to-date commodious studios" were turning out pictures over a year ago and, what is more, a lot of box-office flops that just about "torpedoed" the British film industry. None of the pictures mentioned as successes were made at the new studios, nor were they encumbered with a lot of expensive imported talent, technical and otherwise!

Mr. Rideout says: "It has been frequently asserted that the films the American renters made or purchased here were of atrocious quality..." and we shall go on asserting this, too, until the Government insists on a reasonable amount of money being spent on a picture to rank as Quota.

He says: "It is quite unnecessary to traverse all the arguments advanced by interested parties now concerned for the renewal of the Act. It is sufficient to draw attention to a few points of primary importance." Who is Mr. Rideout to decide which are the points of primary importance? Is not the very existence of the thousands of workers in the British film industry important? Or is he content to see us go on struggling to live: with hundreds out of work and more and more foreign technicians coming in?

He says: "Indeed it would be far better for England to abandon production altogether if we must feel ashamed of British films. They must be at least as good, and preferably better, than the best America can produce before we can be content." But what is a British film? The ingredients at the moment are, say, Hungarian producer—American director—German cameraman—French dress-designer—Russian art-director—Austrian leading lady—Italian scenarist, and any other nationalities bar British in the key positions, plus a lot of British money to be cast away in a riot of extravagant blatant incompetence!

May I quote to you, Mr. Rideout, the views of A.C.T. on the Government White Paper on the new Quota Act?

"The British Film Industry can never assume its rightful position except on a basis of the production of GENTILELY British films of outstandingly good quality.

The frenzied financiers have failed: something more than mathematical allocations and stringent penalties for evasions is needed to set our house in order.

This can only be done, we repeat, by building an industry founded upon the direct fostering and encouragement of British technical ability.

Financial stability will follow."

And in conclusion, I would only add—save your 15and take the family to see The British Film: "Victoria The Great."

What the Public Like (continued from page 147)

We Would Like to Know

The most intriguing questions, though, are those results which Bernstein tantalisingly says "will not be disclosed."

"Do you actually stay away from a cinema where a film is showing which features any of the stars you dislike?" And "of the newspapers and other periodicals which you read, which do you consider has (a) the best film criticisms, (b) the best film news and gossip?" If this habit spreads stars may retaliate with "Which cinema do you consider has the best questionnaires?" And critics with "Do you actually stay away from a cinema where a questionnaire is circulated which features questions which embarrass you?"

But we would like to know the answers.

Sex and Age

It would be dangerous to derive more than a set of probabilities from these answers. Results sometimes contradict each other—e.g., "Historical" figures low on the list of subject preferences; but of the pictures popularly voted the six outstanding, five ("Mutiny of the Bounty," "Lives of Bengal Lancer," "Under Two Flags," "David Copperfield" and "Captain Blood") are historical or costume pictures. Perhaps classification needs looking into.

The investigators are aware of such dangers and correctly lay more stress on age and sex—distribution of results. 89% of Taylor's votes were from women and more than 50% of these from the age-group under 21. Norma Shearer, Greta Garbo and Claudette Colbert, are more popular among women than men. 62% of Shirley Temple's votes come from women. Jessie Matthews had a higher vote in the women's 21-40 age-group than Ginger Rogers or Shirley Temple. Mae West's dislikes came from men and women equally, irrespective of age-group.

These facts are more important than actual positions in the poll.

Questionnaire for Mr. Bernstein

But we'd like to know more about the voters themselves.

(1) At what cinemas was the poll taken?
(2) What pictures were running at these cinemas at the time—and during the previous three weeks?
(3) What is the relation between the answer to No. 2 and the outstanding films results?
(4) What is the social composition of the districts where the cinemas are situated? How far is this reflected in the composition of the average audience?
(5) What is the average admission price?

Please attempt all the questions, Mr. Bernstein—next time.

S. C.
Lab Topics

Why?

Why do British negatives which are sent over to U.S.A. for the American release come back in such a disgraceful condition? In two recent examples, on return, nearly every scene was mutilated in some way. The majority contained make-ups, some were faded in and out in the middle of the scene and others were transposed to give a ridiculous version. Lengths of sound track had been removed and in many cases silent track substituted. In addition, not one reel was in synchronization. If prints from the negatives as returned to England were shown to the American public, we can quite understand why some British pictures "get the bird" in the States.

It often happens that further prints are required when these negatives come back to England, and many days of tedious work are spent duplicating from the Master Positive and sorting out the chaos before the negative is again brought in line with the trade show version. Even then much of the original negative has been lost and duplicate negative substituted with consequent loss of quality.

We are sure our American friends would soon complain if their films received such treatment, but so far as we know their original negatives never leave U.S.A., although they expect us to send them ours.

Colour Plusses and Minuses

There are many signs that motion picture films in the future will normally be shown in colour instead of in black and white. The Patent literature shows every week large numbers of claims for processes which would enable prints in three or more colours to be made on positive film, and before long the laboratory technician will be expected to have more than a nodding acquaintance with the principles underlying some of the methods which are being worked out.

On the whole the processes group themselves into two main divisions, the additive and the subtractive. It will be as well if all those who have to deal with regular laboratory practice, even at the present day, are quite clear as to the difference between the two principles involved.

The additive processes depend on the fundamental fact that the whole range of visible colours can be built up by exciting three separate primary colour sensations—red, green and blue-violet. It has been found experimentally that a beam of red light, one of blue-violet and one of green, together give the sensation of white light provided that their relative intensities are correctly adjusted. Furthermore, mixtures of two or three of these colours in definite proportions can reproduce to the eye practically the whole range of visible colours. Processes which depend on this principle are called additive, because any given colour as it is perceived by the eye is actually added up from the three elementary red, green and blue-violet components which are utilised in the process.

Additive processes of colour photography include the well-known Autochrome, Paget and Articolour plates, Dufaycolor, and also the processes involving lens-like embossings on the film base originated by Berthom and Keller-Dorian, which have been employed in Kodacolor and in the Siemens-Perutz process.

It would be impossible in the limits here to describe each of these in detail, but in every case the various colours seen are produced by the addition of three primary components.

The subtractive processes start off with white light and depend upon the use of various filters which are introduced in the beam and which subtract from it certain components, leaving the residual colour required.

If we hold in the path of a beam of white light a yellow filter, it eliminates blue from the light and allows everything else to pass through. It could, therefore, be called a minus blue filter, and it so happens that the residue from the white light, when the blue is eliminated, is yellow. In the same way a magenta filter eliminates green and the residue is the reddish-blue colour known as magenta. Thus, a magenta filter can also be referred to as a minus green filter. Finally, a blue-green filter of the right tint will eliminate all red light from a white light beam, and this again can be referred to as a minus red filter. Obviously, therefore, if we place all three filters in the path of a white light, the first will eliminate blue, the second will eliminate green and the third will eliminate red. These three colours, however, are, as we have already seen, the primary components from which white light is built. If they are all eliminated there will be nothing left and consequently only the sensation of black will be experienced.

If we use two of the filters, what would happen? Suppose we put in the yellow or minus blue filter and the magenta or minus green filter. If white light is passed through the yellow filter, this will eliminate the blue and everything else will pass on. This filtered light will then pass through the magenta filter and the green will be eliminated. The light will now have lost its blue and its green components, leaving only the red; consequently, the two filters above named when used in series will filter the light so as to allow only the red component to emerge. Similar reasoning will show that by using the other two possible pairs of filters, green light or blue-violet can be obtained from the white light. By an extension of the idea it can be shown that using one, two or three of the filters of the correct densities, all the various colour sensations can be reproduced.

Examples of this type of colour photography are best known to the cinematographer from the processes associated with the names of Technicolor, Garsparcolor and Kodachrome.

The advantages of the two systems are a matter of debate. The rival systems have each their adherents and considerable capital has been invested in both. The next few years should show which type of process is going to take the place of our regular black and white films.

10 x 8's From Leica Stills

A production unit that has just finished a picture discovered that their contract with the distributors called for a set of 10 x 8 negatives for production stills and all they had were some Leica negatives that had been snapped on the floor and were under exposed and very over-developed (soot and whitewash). P. Dennis of stills fame soon got them out of their difficulties. He made enlargements from the Leica negatives, rather over-exposing them.

(Continued on page 153)
WESTON EXPOSURE METERS

Model 650 Leicameter.

Model 819 Cine Meter.

Model 650 Universal Meter.

FILMS & EQUIPMENTS LTD.
145 WARDOUR ST. :: LONDON, W.1.
George H. Elvin, A.C.T.'s Delegate, reviews

THE TRADES UNION CONGRESS

NEWCOMERS, as A.C.T. are to the organised Trade Union Movement, have a heritage to be proud of. The Trades Union Congress recently held at Norwich was the sixty-ninth such gathering, and it is interesting to note that there were 629 delegates present, representing 244 trade unions, with a total membership of 4,008,617. When the Congress was last held in Norwich, in 1894, 375 delegates represented 119 societies with a total membership of just over one million. The vastly improved working conditions to-day compared with forty-three years ago are almost entirely due to the work of this Trade Union Movement. Discussions at this year’s Congress will continue to ensure a similar improvement for those who have taken their place in the industrial life of this country forty-three years hence. Organisation generally, unemployment insurance, social insurance, safety and welfare, pensions, hours, wages and conditions of labour, holidays with pay, the forty-hour week, international labour conventions, legislation, conditions in particular industries—the film industry, for example—and international activities, were some of the specific subjects debated which will help us along this path.

It was with such thoughts in mind that I travelled to Norwich as A.C.T.’s first delegate to the Trades Union Congress. We represent a newer trend in trade unionism—technicians who until recently, both in our industry and elsewhere, have kept outside industrial organisation believing it to be principally for manual workers. Doctors, actors and actresses, navigators and engineering officers, clerks and administrative workers, commercial travellers, insurance workers, engineering draughtsmen and others are now all part of the Trade Union Movement.

President’s Address

Mr. Ernest Bevin, in the Presidential Address, made specific reference to technicians when he said that “there is an awakening on the part of another professional branch, namely, that of management, as apart from the finance-capitalist, which is making for itself a more distinctive place. These people are becoming increasingly conscious that the results of their labour are not being used to public advantage and that their endeavours over many years to organise and build up great undertakings of social utility are often brought to nought by the action of speculative financiers. Their position becomes more and more insecure. Technicians will find much greater scope and security... by working in association with us than they enjoy at the moment.” Words which non-unionists should well heed.

Mr. Bevin also addressed part of his remarks specifically to those workers who are not yet in their trade unions and pointed out that the agreements made by the Trade Unions, together with the work done through Trade Boards, cover nearly nine million people. “Therefore it will be seen,” the President said, “that there are over 50% of the workers affected who are mean enough to accept advantages towards which they do not contribute one single penny. What is more, they weaken the efforts of those who are putting up such a struggle to improve the conditions of life. I call upon them to play the game.”

The Film Debates

It is impossible in a short article to give a detailed report of a week’s business. I hope that members will have followed the proceedings generally in the press. All I can do here is to enlarge upon these items of special interest to film technicians. The chief of those were, of course, N.A.T.E.’s two motions on the film industry. The first dealt with safety and statutory licensing conditions in cinemas and called upon the T.U.C. General Council to renew its representation to the Home Secretary on the urgent need of complete amendment of the Cinematograph Act, 1909, and Statutory Rules thereunder, and in particular to press for amendments which will prevent understaffing in cinemas, fix a maximum working-week, and ensure adequate rest-room facilities. In moving the motion, which was carried unanimously, Mr. Tom O’Brien, N.A.T.E.’s General Secretary, stated that many cinemas were still backward in these matters and, although the Home Secretary appeared to be impressed by a deputation

Reynolds’s News Photo

George H. Elvin and father, Herbert H. Elvin, fellow-delegates to the T.U.C. Mr. Elvin, sen., has just been elected 1937-38 President of the Trades Union Congress.
he had received, very little headway had been made. Mr. F. W. Bussey, President of the Electrical Trades Union, seconded the motion and pressed specifically for T.U.C. action to help reduce the cinema workers' hours of labour.

British Films and the British Film Industry

The second motion was the more important to A.C.T., dealing with the industry generally. After referring to decisions of previous Congresses, it said:

"It recognises the increasing importance of the Film in influencing the thoughts, customs and habits of the people, and its powerful potentialities for propaganda as well as for entertainment.

It considers that a flourishing and efficient British film producing industry is a national necessity, not only to protect British cultural and educational standards from alien disarrangement and infiltration, but particularly to safeguard the employment of thousands of British Workers of varying grades now employed.

This Congress, having regard to all the issues involved by any foreign domination of this powerful medium of organised commercial entertainment, reasserts its desire that every means possible be utilised to protect the British film producing industry from those influences designed to weaken it, and instructs the General Council, in association with affiliated organisations interested, to press upon the Government that the new legislation shortly to be introduced before Parliament on this subject shall provide adequate safeguards of the principles to which this resolution calls attention."

Mr. O'Brien, in proposing the motion, dealt with its general terms and implications while I, as seconder, confined myself to the more domestic issues.

The mover drew attention to the great economic importance and potentialities of the industry and claimed that eight large American companies controlled nearly eighty per cent. of the world's film supply, apart from the dictatorship countries. The film exercised a greater influence on the minds of the people than either even the radio or the press and we could not afford to neglect it. It was the ambassador of trade and must not be allowed to come under foreign domination. To-day it took a sum equivalent to nearly one-half the value of our cotton exports to pay for the importation of foreign films into this country. The need for development of the industry was of the utmost importance. Mr. O'Brien continued, not merely to give greater employment but also to give to Great Britain and the British Commonwealth a status of security and dignity appropriate to its position in the world. A British film industry was a vital necessity, as vital to the country's protection and interests as any weapon of national defence.

In seconding the motion, I stressed that support was wanted to ensure that protection afforded under a Cine-Technician Films Act covered technicians and workers equally with other interests. The present Act did not give these safeguards. The letter only had been observed and technicians were ashamed of some of the junk which they had been forced to turn out as quota footage. The present White Paper proposals had suggestions which should help to ensure quality—although nothing could guarantee it—but the proposals as they now stood might very well tend to less employment than heretofore. The actual quota was being lowered in its initial years and the double quota proposals should be strenuously opposed. It was also essential to remedy the foreign domination, referred to by the mover of the motion, particularly as on the labour side it had resulted in the importation of unnecessary and superfluous foreign labour. To-day's present heavy unemployment amongst British technicians would be halved if the foreign labour at present in the industry was not employed. Film technicians were not being narrowly nationalistic, but the position must be reviewed in relation to conditions in the industry generally and particularly in other film-producing countries where it was virtually impossible for British subjects to obtain employment. The White Paper as at present framed may well lead to the ironical position of technicians being thrown out of their jobs through an Act of Parliament intended to foster the industry.

Mr. R. A. Bradfield, of the Shop Assistants Union, opposed the motion, objecting to the words "alien infiltration and disparagement," in view of the fact that the trade union Movement was an international one. His speech was a clever one, but carefully evaded all the issues made by the proposer and seconder of the motion, and stressed the general films made in other countries—which, of course, he admitted-thinking apparently that we wished to prohibit the exhibition of foreign films in this country. The support which this delegate obtained was quickly dispelled by Mr. O'Brien who, in a vigorous reply to the debate, reiterated the present position of workers in the industry and urged on Congress to protect them. Upon the vote being taken, the motion was carried by an overwhelming majority, not more than a dozen hands showing in opposition.

I trust that as a result of this decision the various unions in the industry, under the lead of the T.U.C. General Council, will combine together to ensure that the best possible safeguards for the technicians and workers in the industry will be incorporated in the new Quota Act, and that there will be similar co-operation to remedy the other matters to which attention was drawn.

Lab. Topics (continued from page 150)

the facts in print being quite "green." He then copied the prints on 10 x 8 flat film and on developing quite good negatives resulted, giving contact prints of the usual contrast and full of detail.

The Labs. Have a "Do"

Last month Humphries and Pathé ran a joint social under the able direction of George Hughes, who welcomed friends from other labs. The Film Labs. team won the film winding competition. Jock Milne of Olympic and Miss Co-star of Humphries with their "sweet music" won the crooning event. Bill Collof Denham carried away a handsome bedroom clock in the draw. Leo Cass had a spot of bending when judging the ankle competition, which was won, after a keen contest, by Miss Woodcock of Humphries. . . . Little lady, come up and see me sometime. Community singing wound up a very successful evening.

The next social evening will be in the capable hands of our members at Automatic Barnes and Olympic. Both of these labs have a fine record for promoting social events, and we are expecting great things of our next "social."
Recent Publications

The Seven Soviet Arts, by Kurt London. Faber and Faber, 15/-. 

This book is the result of a trip to the Soviet Union, financed partly by the royalties from the Russian editions of the present author's previous work on Film Music (you can't take your rubles out of the country) and partly by the fees from a lecture tour in the Soviet Union inspired by that previous work.

We don't think the present volume will lead to another such lecture tour—not in the Soviet Union, at any rate. Not that The Seven Soviet Arts has no merit. It is a mine of information on the present state of the arts in that country, all eight or nine of them. And it covers allied crafts like the gramophone as well. One can therefore say that in the main this is an accurate account of the state of the arts and crafts in the Soviet Union this time last year.

But the opinions embedded amongst the information are of little more value than would be those of a benevolent cannibal who has just visited a neighbouring tribe that is emerging from the state of cannibalism. Nothing is so succulent to the cannibal (conservative creature!) as the flesh of his own kind. And nothing is more difficult for the conscientious ex-cannibal than to live through the period of time required to eradicate the cannibalistic leanings of his kith and kin, particularly the more materialistic of them. Think of the experiments in catching and killing and cooking other kinds of flesh, the danger involved, the overthrowing of age-old traditions, the search for new methods with which to replace them. It is certainly much more comfortable to remain a cannibal, and that is what our author feels in his heart of hearts.

But he does not help his case by deductions like the following: "Kavalleridze, who is also one of the more prominent film directors, . . . is working on the film-version of Lissenko's opera Natalka Poltavka. Just as Dovshenko was a painter before he took up film-direction, Kavalleridze was a sculptor, and this will, let us hope, enable him to avoid making just one more of the usual film-operas which we have heard ad nauseam in the West. . . ."

All the dots in the above quotation are ours, except the last four. Evidently Mr. London believes so little in the film as a separate form of self-expression (in that, he resembles so many of our aunts and uncles) that he finds it beneficial for artists to play general post with it. We have only to refer the reader to the report of the A.C.T. Delegation to the Soviet Union, published in the last issue of The Cine-Technician, to discover exactly the kind of work of sculpture the film Natalka Poltavka has turned out to be.

T. B.


The reminiscences of a Continuity Girl—unless, of course, they are of a scurrilous nature—must necessarily be more interesting to the public at large than to the people who know all about it anyhow. Continuity Girl has no plot. Martha Robinson just relates her experiences on a number of productions, pausing now and then to explain technical points which would not be clear to the lay reader. The style is unpretentious, and, although writing in the first person, the author does not force her personality upon one, nor leave one with the impression that the Script Girl is the one Great Big Noise in film production.

Except for an assurance, in her preface, to the effect that conditions have improved somewhat amongst the bigger companies, Martha Robinson does not comment at all upon the discomforts and long hours that film work entails. She describes it all, but leaves the reader to draw his own conclusions. And it is to be feared that the uninformed will draw the wrong conclusions—to wit, that these things are necessary evils in the production of pictures. Martha Robinson might have gone into the root cause of these long hours, and examined to what extent mismanagement and stupidity were responsible for them, but then, perhaps it is too much to expect very outspoken criticism of the industry from one who still earns her living by it.

Vega d'Auvergne.

Eleven Trade Unions Visit Russia. Congress of Peace and Friendship with the U.S.S.R. 2d.

This pamphlet is the report of the recent trade union delegation to the U.S.S.R., which included two representatives of A.C.T., whose report on the Film Industry was published in our last issue. The paragraphs on the film industry are an outline of the fuller report in The Cine-Technician. The rest of the pamphlet deals mainly with the observations of the other delegates, which, whilst interesting generally, suffer from the lack of detail which must evolve from any attempt to deal with a large subject in a restricted form.

How To Write A Movie, by Arthur L. Gale. Pitman, 7 6 net.

Published as a guide to the amateur, the producer of scientific and educational films, and the writer who is interested in the possibilities of selling film stories. The author is editor of "Movie Makers," an American publication.


A novel for boys. The story is told in and around a French film studio. Well illustrated.

Cinema Survey, by Robert Herring, Bryher and Dallas Bower. Brendin Press, 1-.

Interesting discussion of various aspects of film from three viewpoints—film critic, cineast and professional.

R. P. S. Appeal

The Royal Photographic Society is appealing for 100,000 shillings.

The lease of their present premises expires in March, 1939, and this sum is needed to secure adequate premises commensurate with the development and present needs of the Society. Two ways are suggested to help obtain the necessary funds:—(1) By joining the Society, and (2) By subscribing to the 100,000 Shilling Fund. The work of the R. P. S. is well-known to cine-technicians, and it is hoped that as many as possible will respond to the appeal.
"The only intelligent film paper published in this country."

_The London Star._

*world FILM news*


Articles in the October number include: _An Innocent in Hollywood; Conditions in Film Studios; Nell Gwyn to Queen Victoria; Film Reviews, by John Grierson; People of the Studios; Newsreel Rushes; An Interview with Pudovkin; Music-hall; Short Films; Radio and Television, etc., etc._

"The first good motion picture magazine to be published anywhere."

_Robert Flaherty._
Technical Abstracts

Applications of Photography to Scientific and Technical Problems. By Olaf Bloch, F.T.C., F.R.P.S.

To-day the photographic industry is one of great size and has many important ramifications. Amongst the chief materials used are silver, gelatine, bromides, paper, cellulose (nitrate and acetate) and glass. The quantities required annually may be estimated to amount to some 500 tons of pure silver, 6,000 tons of cotton for the making of film base, 3,000 tons of specially prepared gelatine, and 12,500 tons of wood pulp for the production of paper. Amateur photographers need about 1,500 tons of film and 7,000 tons of paper; professional photographers use about 8,000 tons of film, 8,000 tons of glass plates, and 9,000 tons of paper to make portraits and advertising pictures. If we include those industries of which photography forms the basis, such as cinematography and process work, the field is vast indeed.

Astronomy

Stars can be seen by the unaided eye down to a magnitude of 6 to 7, with the assistance of a telescope to a magnitude of about 15, and by means of photography to a magnitude of about 21. As one magnitude is the number whose logarithm is 0.4, the intensity ratio between telescopic and photographic perception is 1 : 250. There is probably a limit below which the energy of a light source is sufficient to affect the photographic plate, however lengthy the exposure, but we have no knowledge of this at present.

Spectroscopy

The spectroscopic analysis of the composition of the stars is of great interest. For instance, two bands in the infra-red, $\lambda$ 7820 and $\lambda$ 7883, show the presence of carbon dioxide in the planet Venus. This has been confirmed by experiments with a considerable thickness of carbon dioxide under pressure.

The absence of oxygen in Mars is inferred from the fact that photographs taken when the planet is approaching to and receding from the earth show no shift of the oxygen bands. Bands representative of ammonia ($\lambda$ 7,900) have been found in the spectrum of Saturn and Jupiter, and methane ($\lambda$ 9,700 infra-red) is to be found in the latter.

Spectrophotography also plays an important part in chemical analysis, especially of metals, both for the detection and estimation of small amounts of foreign elements and also in the case of alloys. Spectral lines and bands may be seen and their positions assigned by visual means, unless they occur in the ultra-violet or infra-red, but for the accurate measurement of their intensities photography must be employed.

Photomicrography.

This is a very important branch of photography. So far as visual microscopy is concerned, the drawing of the enlarged image is a very lengthy operation whose accuracy depends upon individual skill, and the amassing of a large number of records is generally quite out of the question. Colour recording is more difficult still. Photography has made this an easy matter, and colour-sensitive plates and filters have made it possible to secure photographs of almost any desired contrast either of tone or colour in monochrome. In addition, the making of microphotographs in actual colour which give reasonable accuracy of colour rendering is now a simple matter, while the use of special apparatus and, in some cases, special emulsions, has opened up new fields of work in the ultra-violet and infra-red regions of the spectrum. Most laboratories, whether scientific or industrial, now employ the microscope in conjunction with the camera.

High-Speed Photography and Cinematography

High-speed photography includes cinematography. The basis of this vast industry, which includes sound recording, is entirely photographic.

X-ray cinematography is a recent development; the method usually employed involves the use of an X-ray fluorescent screen of high efficiency and a cinematograph camera with a lens of great aperture, one of the order of f/0.85. The shutter is synchronised with the high powered X-ray tube so that the tube is only working for the duration of the exposure.

Very high-speed cinematography can be effected by means of controlled electric sparking; it is possible, for example, to record the working of machines such as the chain-stitch sewing machine, which makes 1,000 stitches per minute, with individual exposures of less than 1/6000 sec., or of the stick throwing the shuttle on a high-speed loom where the shuttle is thrown 250 times per minute.

In one highly successful type of camera the film moves continuously with as great a velocity as 200 feet per second, if required. The light source consists of intermittent flashes from a condenser discharge into a mercury vapour lamp in any number up to 6,000 per second. If the number of flashes be synchronised with the number of cycles of any moving object required to be photographed, the instrument becomes a stroboscope.

The spark method has also been most successfully used in the photography of explosions in gases and the photography of projectiles, etc., travelling through the air.

Aerial Photography

Amongst the very interesting work from the air are the photographs of old camp sites, both pre-historic and Roman, and much beautiful work has been done, resulting in the acquisition of considerable knowledge. Much survey work in infra-red photography has been done, and when the conditions are suitable considerable advantage results. For instance, a sharp horizon line is necessary in the photograph and this is not easy to obtain in misty weather, save by the use of the infra-red method. In consequence of the increased penetration obtained it also diminishes the number of photographs which need be taken, and for the same reason increases the number of flying days upon which photography is possible.

A photograph of the earth, taken during the stratosphere flight of 1935 from the balloon Explorer II, at a height of over 72,000 feet, shows the curved top of the troposphere which forms the lower boundary of the stratosphere at a height of 37,300 feet. The photograph also shows quite distinctly the curvature of the earth.
Polarised Light

The use of the polariscope in conjunction with the microscope is well known, and recent developments have made it possible to apply polarised light to ordinary photography. This is effected by making use of the properties of a crystalline substance, herapathite (quinine iodosulphate), which possesses this property. The screens are made by orientating the crystals suspended in a suitable medium by squeezing them through a slit. These screens, placed in front of the camera lens in the usual way, are capable of cutting out unwanted reflections from glass, wood, paper and other surfaces, but not metallic reflections. In the latter case it is necessary to polarise the illuminating light and to use the filter in front of the lens as an analyser. This can be done by fitting a large polarising filter over the light source or sources.


Precision Lighting

is tip from Academy Award Winning Cameraman, Gaetano Gaudio, A.S.C.

"DURING the past year my attempts to solve the lighting problems created by to-day's super-speed films have evolved a definitely new technique of lighting.

It might be called 'precision lighting,' for it is achieved almost exclusively with precision lighting tools—spotlights. The general floodlighting equipment which was formerly used to assure a safe exposure level of illumination overall is no longer needed or used. Instead, every detail of both actors and set is lit with light beams projected from spotlights. This makes no difference in the amount of light used, but it makes a tremendous difference in the result on the screen. Every beam can be controlled precisely.

Our normal concept of light is that it comes from above. Outdoors, even on a cloudy day, the light comes from the sky. Indoors, either from windows or lighting fixtures, the illumination comes downward from above. Why, then, should we play light on our sets from any angle but above?

Likewise, in a set where we try to get some separation between players and set by contrasting well-lit players against a darker back wall, if we use front light from units on the floor, the light will not stop after illuminating the player, but will continue onward to disturb the lower keyed lighting of the wall. 'Anthony Adverse' was lighted almost entirely by spots.

There is another precision lighting tool which plays a big part in my new lighting technique—the dimmer. My electrical crew always keeps from four to half-a-dozen or more small dimmers available on any of my sets. With them I can rebalance my lighting by bringing this unit up or that one down as the players or the camera moves about the set."

Gaetano Gaudio uses these small dimmers on his lights so that they can bring up slowly the intensity of his lighting to increase modelling on the actor's face to suit the particular tempo of the scene. In dolly shots he similarly has natural effects in lighting by allowing the players to walk through shadow-areas from one high light source to another as is shown in the ward scenes in "The White Angel," illustrated alongside. In this type of lighting, he says, composition should be properly part of the lighting scheme.

American Cinematographer, July, 1937.

Report of Standards Committee

New Drawings

The most important actual change recommended is an increase in the width of the variable-width sound record on 35 mm. film from 0.071 inch to 0.076 inch. The latter value is actually in use now and was introduced to make room for the double track for the push-pull recording system. This change involves also a change in the sound track dimensions for 16 mm. film to allow for reduction printing. The width of the sound record is increased from 0.060 inch to 0.064 inch. The width of the printed area for the variable-width sound-track has been reduced, however, from 0.086 to 0.085 inch, so that the printed area for both types of sound records is the same.

Screen Brightness

In accordance with the recommendation of the Projection Screen Brightness Committee and its endorsement by the Projection Practice Committee, the Standards Committee is proposing to adopt as recommended practice a standard screen brightness of not less than 7 or more than 14 foot-lamberts. There have been some good arguments against this recommendation and further comments will be welcomed before the final adoption of this recommendation. Reference can be made to the New Year, 1937, issue of The Cine-Technician for a detailed article on Screen Brightness.

Standard Densities

After investigation by the Sub-Committee to determine the possibility of standard densities for standardizing densimeters, the recommendation has been approved by the Standards Committee that strips of photographic film standardized by reference to an integrating-sphere densimeter be used as reference standards. In spite of the fact that these densities are not permanent, it is believed that they are as permanent as any other densities likely to be obtained, and have the further advantage of offering approximately the same degree of light-scattering as the photographic film with which they are to be compared.

——S.M.P.E. Journal, August, 1937.

Ward Scene, "The White Angel."
(Warner Bros. Production.)
Recent Developments in Motion Picture Set Lighting

E. C. Richardson

Many of the industry's outstanding cinematographers state that they lavish quite as much care upon lighting the set itself as upon lighting the star actors. Illusion of roundness is achieved by high lighting curved surfaces with little catch-lights, which give to the single eye of the camera the effect of binocular vision. These effects are generally attained with projecting or spot lighting units mounted overhead and usually crossed. Although sets are mostly three-sided, lamp rails overhead are mostly four-sided.

Artificial shadows forming patterns properly executed is trick to enhance composition of picture.

"Key lighting" fundamentally refers to the logical practice of lighting sets directionally usually suggested by set designs.

The dominant light source would come from H.I. arcs projecting a clear-cut beam. Beneath this "key lighting" secondary modelling light units would be used.

Lighting close-ups is an intensely individual matter. Marlene Dietrich may appear best under strong "key lighting" projected downward upon her face, and Mac West may require the softest of diffused flat lighting. And a third example, Irene Dunne, may look best when her face is softly illuminated by focussing a "baby" spotlight fitted with a magenta filter into her eyes to enhance their natural sparkle. The new Junior Solar Spot is a prime favourite for this service and the 500-watt baby solar spot is very useful. Even distribution is given by their Fresnel-type lenses.

The "Handi lamp" or "Lupe" is used for mounting on camera blimp or "dolly".

Individual dimming devices are being used more and more.

Careful attention to physical and mechanical aspects of burning carbons, elimination of flicker, improvements in carbons, allow H.I. arcs to reduce excess of blue and ultra-violet radiation and burn as steadily as "inkys," requiring only a straw-coloured filter to afford a photographically satisfactory distribution of light within a beam of from 8 to more than 45 degrees.

More than 95 per cent. of lighting for Technicolour productions is done with H.I. arc spotting equipment.


New Splicer

Duplex's new splicer is six inches wide, five and one-half inches high and eight inches long. Can be operated at high speed, for either 35 mm. or 16 mm. film as each machine is equipped to handle both sizes. An important feature is the built-in dry scraping device, which removes all emulsion from the film with one flick of the finger. The scraper is set to very close register so that it removes the emulsion easily and completely with one stroke, so that splices can easily be made in total darkness if necessary. The entire machine is kept at a constant warm temperature by an electrically controlled heating unit designed to speed the drying of the cement and to vulcanize the splice. This unit operates on either type of current (AC-DC). The machine is warmed in one hour and is designed to be left on continuously for any length of time.


New Type Screen

The first installation of the "gradationally perforated" screen, recently developed by the Hurley Screen Company of Long Island City, has been completed on the Radio City Music Hall, New York. The screen is perforated only in approximately the horn area, leaving the remainder solid.

The extent of the perforated area depends upon the size of the screen, ranging from 8 feet wide for small and medium-sized screens, to 12 feet for large screens. From the middle, the perforations gradually diminish in number and diameter towards each side, but they average a diameter which, with the depth (thickness of screen) makes the total transmission area (holes) approximately equal to the usual 10%, of the entire area of the screen.

Installation of the new screen in the Music Hall was a huge task, the overall dimensions of the screen being 50 x 80 feet. There are over 1800 grommets for attaching to the frame.

—Motion Picture Herald (Better Theatres), July 24th, 1937.

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Panning Round the Globe

Pog Revolves the World for the sake of the Children next door.

Hollywood—Only six million dollars and Hollywood will belong to England . . . at least so we are told . . .

Germany—They are now destroying all the old screen masterpieces (pre-Hitler). What a break for English Quickie Directors . . .

Italy—Nero still trying to fiddle.

Intelligence Test For All.

£3 million lost in the Film industry. Who’s had it?
Is Dean Inge the only gloomy Dean?
Who are the four Englishmen left in the Industry, and why?

... The Four Englishmen left in the Film Industry . . . ?!!

In view of the Soviet flight over the North Pole, is it true that "Conquest of the Air" was made with Russian Gold? It's evident, but not very Prudent.

Is the mystery night flier over London really Mr. Crocker?
If all the rolls of film from Denham were unrolled and placed end to end they would reach from London to——— Prize for the best answer or measurement. (Note.—Nitrate film should be kept away from flame).

Talking of from "dustbin to the dinner-table," are zipfasteners a good cure for flies?
Who was Captain of the Wardour Street Lancers?
Was he also Controller of Perforations?
Who said, "Let's play the game, boys, but remember it's hide-and-seek, not cricket!"?

Poet's Corner.

ALICK IN WONDERLAND
(With respects to Lewis Carroll.)

Lord Moyne he worked on his report,
He worked with all his might;
And did his very best to make
Things for the Trade more bright.
And this was hard because it was
In such a sorry plight.

The film magnates in Wardour Street
Were walking hand in hand,
They wept like anything to see
Some British in their land.
"If they were only sent away,"
They said, "it would be grand."

"The time has come," one magnate said,
"To meditate and brood.
We'll send for the producers
And the stars from Hollywood,
But we'll get British capital,
Their money's always good."

"Oh! wealthy banks and companies,
If you'll lend us your cash,
We'll show you how the British film
Can really cut a dash."
And one by one they came along;
'Twas really very rash.
On they all came and very soon
Millions of pounds were lent:
Shareholders, too, were very glad,
It seemed a good per-cent,
And no one knows e'en to this day
Just where that money went.
Producers they came from abroad,
And technicians and stars;
One very ace air cameraman
It's rumoured came from Mars.
The British helped with loading-boys,
With prop-men and with chars.
Luxurious studios were built,
With swimming baths and pools,
A boudoir there for each film star
With gilded chairs and stools.
It's odd how easy 'tis to get
Money away from fools.
The film magnates again cried out,
"Build us another floor,
The money's all gone up the spout,
We'll have to say encore."
It's very sad to have to say
There wasn't any more.
Lord Moyne he smiled o'er his report,
He smiled with all his might;
"Fifteen thousand you must spend."
That gave them all a fright,
"Producers must be Britishers,"
And Echo answered "Quite."

**Pog exits (hurriedly).**
A very good day to all you poor saps.
TELEVISION
by "TELE-TECHNICIAN"

THE recent presence of the B.B.C.'s, mobile television unit at Pinewood, Denham and Elstree, has aroused amongst the film technicians of those studios a marked curiosity as to how the television wheels go round. It is not within the scope of this brief article entirely to satisfy that curiosity—a simple explanation of the design and operation of a television transmission and receiving station can be found elsewhere—but rather I want to outline briefly the difference in technique between making a motion picture and broadcasting a television programme.

The most salient point to be appreciated is that, apart from the film transmission which is radiated every morning from Alexandra Palace, the studios there actually produce nearly two hours' screen time every day—as opposed to a film-unit's twenty minutes "rushes," out of which may emerge three to four minutes' actual screen time. I deliberately say "nearly two hours" because, of these two hours radiated each day, some ten to fifteen minutes are taken up by film transmission (either news-reels, cartoons or interest shorts) to fill in the few minutes necessary to strike the sets used in the first part of a programme, and erect and dress the sets for the succeeding part of the transmission.

An individual item may run for five minutes or for an hour (vide "Journey's End," which was televised on Armistice Night), which means that the actors have to memorise their lines and action to an extent wholly unknown in motion picture production. Technicians (by which I infer the assistant-director, camera operators and boom-swingers), on the other hand, while working under the same conditions of prolonged strain as the artists, have the advantage of wearing headphones which are connected to a microphone in the monitor-room, and by means of which they receive from the producer running instructions as to the operation of their equipment—"... cue the butler in now, please... pan left slightly, number three camera... I am coming over to you in a moment, number one... you have to give me a little more head room... I'm mixing you now, number one... track forward slowly... lower the mike as number one comes in, sound..." is the sort of thing they hear, thanks to the fact that the producer sees on the main screen the picture from the camera which is actually in use, and on pre-view screens the pictures from those other cameras which he will next be using.

The cameras (known as Emitrons) employ no film of any sort, being entirely electrical, and their outputs terminate on a panel similar in appearance to the sound-mixing panels so familiar in film studios, where they can be faded, cut, dissolved or superimposed at the discretion of the producer; in addition, the "electrical output" of one or more special film (known as Telecine) projectors can be mixed in with the camera outputs to obtain special effects. From which it will be observed that all the editing is done while actually broadcasting or shooting, and the director or producer has to go on the floor knowing exactly where his cuts, fades and dissolves are going to take place—an unusual experience for the average film director producing a television show for the first time!

Scripts are substantially the same as motion-picture scripts but more detailed (see Fig. 1), and in order to avoid chaos must be adhered to fairly rigidly; I use the word "chaos" because it must be remembered that in television production the expressions "Cut" and "Let's have another take" are non-existent, so that failure on the part of either artistes or technicians to follow the script closely may lead to severe complications, in that a lot of the mechanics are dependent on dialogue word cues. Errors by the technical crew can be immediately rectified by the producer via the headphones already referred to, but once a transmission has started the producer cannot contact the actual artistes. Summing up, then, so far as the producer, the artistes and the technicians are concerned, a half-hour transmission (and this is a very frequent length for a television play or revue) can be likened to a situation unheard of in a film studio—one take, 2,700 feet long.

When film technicians have digested the above, they will perhaps be less prone to draw comparisons unfavourable to television between what they see on a television screen and what they see in a motion-picture theatre.

Finally, a few words as to the size of the television picture. Film technicians, in particular, seem to be of
VISION

FADE IN

FADE IN TELECINE
Continuity as previously

QUICK FADE OUT AND CHANGEOVER

O.B. Control
Start music before vision fade in.

FADE IN

No. 2 camera M.C.U.
Miss Matthews and Mr. Whiting sitting on sofa. Hold tight
shot on No. 2 camera, mounted
on truck. Motion-picture
camera to be set up just behind
emitron camera, so that when
emitron tracks back, motion-
picture camera (and crew) are
revealed.
On Miss Matthews and Mr. Whiting
 exiting for dance:-

MIX TO:

No. 1 camera M.C.U. to F.L.S.
Camera mounted on camera crane
in down position, holding full
length shot of Miss Matthews and
Mr. Whiting dancing. Camera to
pan as necessary for holding.
Position to be held such for
2nd chorus.

For 3rd chorus (last) crane slowly
to track back and rise, timing being
such that when back and up in L.S.
of entire stage, number finishes.
On finish of number:-

MIX TO:

No. 3 camera M.S. Shot to include
whole of former set-up, together with
motion-picture camera, lamps, crew,
electricians, etc. Mr. Hale and
Mr. MacWilliams in shot. Miss Matthews
and Mr. Whiting to enter. Everyone on
stage to maintain a background of
conversation immediately after Mr. Hale's
'cut' in previous shot.

SOUND

A.P. Control

FADE IN "Music from the Movies"
As previously.

FADE IN O.B.LINE (No. 1 microphone)
HOLD MUSIC UNDER O.B. OPENING UNTIL
CUE TO FADES OUT BY TEL. P.K.

CONTINUITY as previously.

QUICK FADE OUT

AND

CHANGEOVER

O.B. Control

Start music before vision fade in.

Song: Jessie Matthews and
Jack Whiting
Two pianos, guitar and drums
accompaniment. (Routine: 1 v.,
1 c. vocal, 2 c. dance)

No. 1 microphone boom: vocal and
speech.
No. 2 microphone stand: pianos, etc.

MIX OUT:

No. 1 microphone
No. 2 " on pianos, etc.

MIX TO: No. 3 microphone

SONNIE HALE: O.K. cut!
(Director)

GLEN MACWILLIAMS: Grand.

JESSIE MATTHEWS: You mean to
tell me you don't want another take?

SONNIE HALE: That was fine,
darling. Good for you, Glen?
opinion that the television screen is too small to warrant their really serious interest in television. I would submit that this reaction is probably due to the fact that they have only seen television in a large room and in the presence of a considerable number of other people, which means, in all probability, that they were standing instead of sitting (and that their eyes were therefore on the wrong level relative to the screen), and that they were some fifteen to twenty feet away from the receiver. The ideal way to look at television, on a standard commercial receiver, is to be seated in front of it at a distance of some six to eight feet and, as in a cinema, in virtual darkness. If you go to a cinema, sit in the best seat in the house, clench your fist and hold it at arm's length between your eyes and the screen, and you will observe that your fist almost entirely covers the screen; if you sit, as I have prescribed, in front of a television receiver and do the same thing, the same result will ensue. This would suggest that for the home, at least, the present television screen is proportionately of the correct relative dimensions.

On the Studio Floor; Television and Cine Cameras meet.

NEW SOCIETY FOR VIEWING SCIENTIFIC FILMS

A new Society has been formed under the auspices of the Association of Scientific Workers, for viewing scientific films. The first programme included a very remarkable film from France and two important films by Gaumont-British Instructional, a colour film by Len Lye and a new G.P.O. film. The show was at the Academy on Sunday, December 12th, and profits will go to the furthering of the scientific film. Those interested in future activities should apply to Film Centre, 31, Soho Square, W.1., or to the Association of Scientific Workers, Kelvin House, 28, Hogarth Road, S.W.5.
ROBERT STEVENSON

STUDIOS WHILE YOU SLEEP.

W hen the Editor of the "Cine-Technician" asked for an article, I did not quite know what to do, for I have seen no films for two months and thought about them not at all. Having lived in studios for nine years, I made up my mind that it was time to brush up my knowledge of the outside world, and I now live on a farm, with hens, ducks, pigeons and a horse (and quite a good long-shot with the dovecoot in the foreground), and no cinema for ten miles.

I knew the Editor would not thank me for a note on Buff Orpingtons or a discussion on the merits of Wessex Saddlesbacks. So I put the matter off and went on cultivating my garden (and I can't help thinking Voltaire must have served nine years in a studio when he insisted on the necessity of that excellent cathartic).

Fortunately Anna tried yesterday to make cheese, a thing that she has never done before and I hope will never do again. I was forced to eat some of her cheese for supper, and as a result, dreamt that a capitalist had presented me with a million pounds to start a studio. Why he did so, I don't remember, perhaps he had misread the new Quota Bill; but I spent the rest of the night deciding how I should run it, and my schemes may be of interest to cine-technicians if only that they may disagree with them.

At least, they are not the fancy pokerwork designed to adorn a company prospectus, but the protest of a humble cine-technician, who has suffered every studio misery from dry-nursing directors as associate producer to seeing his own sad face on the screen as clapper boy.

First of all, I found that in my studio the creative and the non-creative sides were sternly separated. The creative side was defined as the producer, the writers and the whole floor unit, with people like the art director and the cutter who are directly allotted to a picture. This delighted me, as I have always been mildly surprised that the floor unit, who make the film, should sometimes be the Cinderellas of a big studio.

As far as I can remember, the people in offices were made to wear bowler hats to show that they were businessmen, though an honourable exception was made for the producer, who, if he is the right man (and in my experience I have been blessed with the most pleasant producers), is a hundred per cent creative. And another thing in this curious dream, the salaries of the people in bowler hats were not charged to the picture, so that the floor unit did not live under the shadow of a claustrophobic overhead; though I have no doubt that they were added in by head office, who in their great mystery can do what they like.

Next in my dream, I abandoned the style and title of Assistant Director, for no Assistant Director is an Assistant Director, but something far more important, the Director's Chief of Staff. The best title I could think of was Floor Manager, but I was asleep at the time and might do better in daylight. I also remember multiplying his salary by four, on the grounds that what a man earns should bear some relation to the money he can save or lose for his employers.

Then I found myself choosing my staff by most peculiar standards. I did not pick a cameraman just because I had been to the trade show of his last film and thought a couple of long shots "very artistic." I found out how long he had been allowed to take in lighting and bore that in mind. It makes a slight difference to the cost of a picture! So with directors: any director who messed about and didn't know what he wanted and tried things out was taken off the picture, which was somewhat of a surprise to him.

Also with directors, I ruled out any who could not write. This is a peculiar theory of mine—that as direction is the visualisation of the completed film, a director who can't write and therefore can't visualise, is incompetent and wastes time. But, as I say, this is a peculiar theory of mine.

At the same time, I ruled out any director who insisted on writing everything himself. The writers are the writing specialists: a director's job on the script is that of a sub-editor, to select from them what he wants.

By now the effects of the cheese had become more insistent and I launched an attack on the thing I loathe
most in a studio, and that is chairs with important people’s names on them. How reasonably democratic Englishmen can tolerate thrones for anyone above a certain salary is more than I can understand.

I found in my studio a curious practice of putting up a detailed weekly cost for the unit to see. I have never really understood why costs should be concealed unless the producer is ashamed of them; and I can’t see how you can expect a floor unit to cut costs unless they clearly understand what those costs are.

Furthermore, after the release of every film a report was posted up of the gross, with comments from reviewers and exhibitors on its success or failure. A unit has to make films to public taste, which it can only judge by past experiences, and if it does not know just how those experiences failed or succeeded, it cannot learn anything.

In this curious studio, I planned a unit call at 8.30, shooting at 9.0, with a schedule honestly designed to finish at 5.30. If the schedule was not completed, the unit must work till 6.30, but no longer in any circumstances, and no spurious arguments about striking sets or releasing artistes. And, most important, if the schedule was finished before 5.30, the unit went home, even if it was only three o’clock. And this rule is not such a dream fantasy as it sounds; we tried it once and I believe it is the first rule of economical pictures. For you can have what illusions you like about esprit-de-corps and the good old firm; but only Dean Farrar’s Eric would kill himself to get through the day’s schedule if he knew his reward was to go straight on to tomorrow’s.

There were two other curious things about our hours.

Every evening immediately after shooting there was a ten-minute conference on the next day’s work, with the night gang standing by to make any changes required (though I suppose the really curious thing was that the director knew just what he was going to do). And the other was the second Saturday of every schedule was a whole holiday for everyone except the director and the producer, who sat together and ran all the staff shot, and quietly made up their minds if the film was turning out the way they had planned, and made any changes necessary. Very often a set sets in, and the director is too tired or has no time to take a long view and see that the film is slipping: one day off after a fortnight’s work would save ten days’ retakes later.

Then in my dream I came to the first week before production, and I was surprised to see the script only in master scenes. This, I was told, was because the less technical detail there is in a script, the more pleasant an actor finds it to study, and it was these scripts that were given to the actors.

Then the producer held a conference, with the full floor staff, including the chief electrician and the head “props,” at which the director outlined his ideas for every scene, so that the floor unit might have at any rate some idea of what they were doing, though when the director cheerfully accepted ideas from the others without proclaiming that his dignity was insulted, I realised that it was only a dream.

Then a second script was prepared for the staff with every possible technical detail. In this I saw that the

(Continued on page 102)

WE ALWAYS THOUGHT WE WERE GOOD

Once again Imperial heads the list of recordings for the month. In the December issue of the “World Film News” 21 shorts are shown and we recorded 16 of them.

1 is a foreign recording.
5 were recorded by other British Studios.
16 were recorded by Imperial.

NOW WE KNOW WE ARE GOOD

Imperial Sound Studios
84 Wardour Street
“where everyone goes for recording”
WHAT THE SEPARATE QUOTA SCHEME MEANS

(This is an anonymous article. The author is a distinguished British journalist. For various causes, his reasoned plea on behalf of the Separate Quota proposals must be published unsigned.)

THE STANDING COMMITTEE, which is considering the Government's new Films Bill, begins discussion of the proposal for Separate Quotes as we go to press. This new scheme was made public only at the beginning of November.

Despite its complexity it has already become the dominant issue, and it promises an abundance of Parliamentary headaches during the next few weeks. To grasp what is implied by "Separate Quota" is necessary first of all to summarise the existing situation.

The present law requires that out of five full-length pictures which the renter (i.e., the distributor) offers for sale, one shall be a British picture.

Concurrently the law requires that out of each five pictures exhibited, one shall be British.

Diagram 1. Government Scheme

<table>
<thead>
<tr>
<th>Production</th>
<th>Distribution</th>
<th>Exhibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENUINE BRITISH FILMS</td>
<td>FILMS MADE IN BRITAIN SOLELY TO FULFIL RENTER'S QUOTA</td>
<td>RENTER'S QUOTA</td>
</tr>
<tr>
<td>IMPORTED FILMS</td>
<td>IMPORTED FILMS</td>
<td>OPEN MARKET</td>
</tr>
</tbody>
</table>

Diagram 2. Separate Quota Scheme

<table>
<thead>
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</tr>
</tbody>
</table>

This system, which was designed to give a quota protection to British pictures, has in effect resulted in the protected market being largely cornered by the American sponsored "quickie" which, while fulfilling the strict letter of the law, has wholly vitiated the purpose behind the law.

"If these compulsory quickies made for £6,000 a piece are so inferior," you may ask, "why does the exhibitor show them in preference to a genuine British picture, made voluntarily, which may have cost £20,000 or £30,000 and which in nine cases out of ten is immensely superior in quality to the quickie?"

The answer is this: The foreign renters, wishing to recoup some of the money they have been compelled to spend on making or acquiring a quota picture, link their "quickie" to some big American picture and offer it for sale in double harness. The exhibitor who, in many cases, would much prefer to buy a voluntarily made British picture, is compelled by the renter to buy his quickie or do without the big American picture.

How do the Government's proposals affect all this? Very little. The minimum cost of the quota picture which the foreign renter has to make or acquire is increased to £15,000.

But the Bill perpetuates the system under which genuine British quality pictures have to compete (even inside the quota market which was intended to protect them) with the quickie which will in future be more costly but of whose quality there will be still no guarantee.

Now look at Diagram 1. This shows the treatment the British film has been encountering during the last ten years and which it would still encounter under the Government proposals.

The vital part of this diagram is the right-hand column under the heading of "Exhibition."

A British picture costing £20,000 or £30,000 will still have to compete for exhibition with pictures made solely to fulfil the renters' quota. Perhaps the British picture will be excellent. More than likely the quickie it is competing with will be as inferior as ever, but the quickie will still have the selling pull of being coupled with a big all-star American picture, to acquire which the exhibitor will have to pocket his pride and his patriotism and swal-
low the quickie along with the big American feature.

The British picture, crowded out of what should be its protected field, may still get a showing, but it will have to compete in the open market without any quota protection whatever, and in direct competition with films which have already more than covered their production costs in the United States and which can therefore sharply undercut the British product.

The supporters of the Separate Quota believe that they have a remedy for this situation. Their proposal is that no one film shall be eligible for both renters’ and exhibitors’ quota and that it must be stated at the time of registering whether a film is intended for renters’ or exhibitors’ quota.

The renters of foreign pictures will thus still have to acquire a quota of British made pictures but they will no longer be able to sell them inside the protected market. British pictures made or acquired by renters to fulfil their quota requirements will have to compete in the open market on even terms with the foreign produced films.

Apart from all other considerations this will tend to discourage the quickie and to improve the quality of the films made or acquired in Britain by the renters.

So far so good. The real importance of this provision, however, is that it gives for the first time a genuine scientific protection and a reserved market to the genuine British producer.

Now look at Diagram 2. The genuine British produced film flows straight through to the third column market “Exhibition,” where it reaches a genuinely protected market.

“But,” say the opponents of the Separate Quota, “if these British films reach the screen without any foreign competition what guarantee will there be of their excellence?”

“A film will not make money merely by being protected,” reply the sponsors of the Separate Quota, “and if pictures made under exhibitors’ quota do not pay, fewer and fewer of them will be made. If, on the other hand, the public likes them, they will make a profit, capital will be attracted once more into British film production and more will be made. The whole point of the Separate Quota Scheme is that the exhibitors’ quota is flexible and will rise or fall on a sliding scale according to whether British producers succeed or fail at the Box Office.”

The Separate Quota, after a quite short public life, now has the backing of practically every British producer who is not also an exhibitor. Many renters of foreign films have also given it their blessing. All the Trade Unions, representing the workers in the industry, are also behind the scheme.

The Separate Quota does not give the British film producer the same certainty of demand as does the Government scheme which calls for compulsory manufacture of a rising number of British films each year, irrespective of their merits. It provides instead a genuinely and scientifically protected opportunity for films to be manufacture voluntarily. The number made will depend upon the commercial success of their predecessors and not upon an artificial and arbitrary scale.

The Separate Quota system gives protection to the British producer and then leaves him to stand or fall by the quality and Box Office appeal of his product.

The Government scheme compels production, but by withholding any genuine protection withholds all inducements to quality.
THE FUTURE OF DOCUMENTARY

by

JOHN GRIERSON

FIRST, as I am writing for technicians, let us get straight on that word documentary. I see Michael Powell has been raising a great fuss because the critics called Edge of the World a documentary. He doesn't like it because Wardour Street thinks there is something highbrow and difficult about documentary and the commercial success of his fine picture is thereby prejudiced. Well, I like it and for these very reasons. It is time the cinema got less scared about being highbrow and difficult. It has been playing tag with the sevenpenny novelette outlook long enough. Men cannot live by bread alone and the cinema cannot live forever on the excitements here today and gone to-morrow of mere entertainment. As a full blown medium of expression there are other things it can do as well. It can inspire a bit. It can explain a lot. It can cut off slices of fact and bring them alive. And documentary is one part of the attempt to do that other thing with the cinema.

Personally, I have never worried much about the attitude of Wardour Street. Representing, as it does, the more naive uses of the cinema, I have never expected it to understand what documentary was after. I have only known that if we sold it hard enough, created enough snobbery around it, Wardour Street, with its usual sense of inferiority, would ask no questions and swallow it whole. Nothing less has happened. I used to be offered two hundred feet in the pictorials. To-day when we care to go into the theatres, which is not often, we get West End releases and featurette prices. I confess, however, that we have learned something about making films in the interval and you can't blame Arthur Dent for that. There may even be some uses in adversity. But the fact is to-day that we like the word documentary and just because so many others dislike it. It marks our difference and our vanity. It indicates, by its ugly ugliness, that we are the educators and uplifters of the good old breed. The very fact that the word is ugly and essentially un-enteraining keeps the commercial people from stealing it and gives the group I represent an effective monopoly. Who are we to throw away a commercial asset?

Speaking more seriously, there is nothing mysterious about it. In documentary (French: Documentaire; based on fact) we have been concerned to describe actualities and interpret them. Remember the only model we had

Stills by courtesy of Strand Film Co., from the Paul Rotha production, "To-day We Live," directed by Ralph Bond and Ruby Grierson.
to go on originally was the newsreel. There the story was in the ready-made interest of the material. We have set ourselves the more laborious task of cutting off slices of industrial, social and everyday life and trying to make that hitherto unpromising material look sufficiently like a story to carry people's interest. Why did we do this? Why not concentrate on the exciting things and be sure of making the theatres and making money, and so forth and so on, as per Wardour Street? 

The answer is: 1. we were more interested in these seemingly dull things; 2. we were not necessarily interested in making the theatres, when we knew that in the halls of the country there was more seating capacity than there was inside the circuits; 3. we were not all of us interested in making money. Why again? Because some of us started out to be instructors of the citizenry. As Michael Arlen once said of his writing we may not be good teachers, but we have at least the fortune to be born ones. So we take a particular pleasure in telling the citizenry, as best we can, how their community works. We find the film an excellent medium for doing so and, in fact, a necessary medium for doing so. You can only bring the complicated processes of the community alive in a medium which allows for both simplification and drama, and film does that. It is also a magnificent carrier. It not only dramatises the description and the exhortation, the lesson and the lecture, but it can shoot them out to every lecture hall in the country. There are more than a hundred thousand of them.

This explains why we have plenty to do and a vast field to work in, and why, though we like playing the Carlton and the New Gallery and are always privileged when we play the film societies, we do not depend on them. Of late, we have a minority movement in our midst which does not share these views about theatre circulation. As distinct from the old sociological guard, it has a hankering for the bright lights and says—sensibly enough—Why avoid an audience of so many millions? Why not make our documentaries just a little more exciting (though a little more superficial), a little more popular (though a little more evanescent), edge them in with the Garbos and put them on a strong commercial footing?

Well, it depends on what you consider your job to be. The mood of the vast majority of theatres is entertainment, release, and essential frivolity, and why not? It is the mood in which most of us go to the vast majority of cinemas, and again, why not? To meet the terms of that mood means—and every technician knows it—reducing every item on the programme to entertainment, release and essential frivolity. Exceptions are possible, but they prove the rule. I have watched March of Time struggle to get its commentary on national and international affairs into theatre terms and I know what a laborious and sacrificial struggle it is. First the subject has, in itself, to be exciting; and that means concentrating on battles and bombs or one or other of the more celebrated forms of hell and havoc. Or it must be a novelty. Or it has, necessarily, to have the elements of controversy. In fact, like mass journalism the world over. By the time a recipe has been worked out which will capture the ordinary citizen in terms of his theatre mood, many important subjects have been eliminated.

We argue as follows. You have only to catch the same people in a different mood (say the mood in which you are reading this article) to make these other important subjects possible. Where to get them? In the specialised theatres and in the hundred thousand lecture halls of what is called the non-theatrical distribution world. In fact one necessary half of our work has been to build up that circulation. It runs at the moment to ten million people a year. It will run to twenty million presently.

This is not to say that we deplore the minority viewpoint which hankers for the theatres. The March of Time has done valuable work not only for entertainment but for public education. It has raised the status of the newsreel to the responsible position enjoyed by the best of our popular papers. And there is room for more work of this kind in the section of the programme left over for the interest shorts and the second features. But, as I see it, the theatre documentaries will not be able to get away from the theatre conditions they have sought. They will have to cultivate the art of amusement; they will be unable to ignore the immediate attractions of hokum; and they will for the most part be limited in their themes to the stuff of excitement. As a rule, D. F. Taylor and Alexander Shaw have gone from Strand Films to make Conquest of the Air for Korda; and we shall see presently how they have come to terms with this new problem. However they succeed in this case, there is nothing to prevent the development of a valuable second feature type, based on fact and building its dramatic quality on documentary lines. It is significant, however, that wherever such a type has succeeded in the past it has mostly been when the film dealt with one or other of the Services, where war and adventures thereof added substance to the factual description, or where death and disaster stalked behind the story. Our Island Nation is an example of that today.

I cannot think of an exception. Flaherty's Nanook, Aaran and Elephant Boy had these elements and succeeded. Mowana, as beautiful a film as any, had none of them and failed. Berlin, for all its quality, failed for similar reasons in the commercial houses. B.B.C. The Voice of Britain got by, but just; more through the presence of Henry Hall and other B.B.C. celebrities than through its account of a public service. Song of Ceylon, a better and deeper film than any of them—excepting always Flaherty—never had a look in, nor did we expect it to.

Expect, then, a documentary future among the second features, but within limits and mostly military. Similarly the future among the interest films will be strictly limited by the nature of the market and the size of it. Two feature programmes do not now, when a newsreel or cartoon or a March of Time have been added, allow for much else. And even then the market is flooded with American novelty shorts which are sometimes good and always cheap. Showmen, who for the most part regard the interest as a fill-up, will naturally prefer a short which is given away with the feature to one they have to pay for.

There are two hopes for the documentary film from the new Films Act. He is already promised five per cent., which work out at 15 seconds every hundred minutes, but with a bit of pushing he expects to get ten per cent. His second hope is in the development of intelligent showmanship throughout the country: the growth of a new generation of showmen who, always within the terms of entertainment, will see the value of a subject which tries to go just a little deeper than the others. Already we have had a great deal to be thankful for in this direction. We have had a great backing from the newspaper critics and showmen like Earle St. John, Sam Eckman, Arthur Jarrett and Sidney Bernstein have given

(Continued on page 170)
Hollywood Letter

by LEIGH AMAN

LET'S start with the fights and get them over. The latest one centres round assistant directors. The question is whether they should be included in the Screen Directors' Guild or not. The directors say they should, but the producers say there's is a different kind of work and therefore should have a different Union. Their idea of course, is that the assistant directors, being purely technicians, and not "artists," should work in the interests of the studio — if necessary against the director. The directors, presumably, want the assistants on their side. Until they gain their end, the producers refuse to recognise the Screen Directors Guild—which is all very complicated. As yet it isn't settled. There is another fight on between the two writers' Unions for official recognition.

The "Talk of the Month" this time is the Hal Roach-Mussolini Business. This has caused a great deal of amusement to some people, but seems to have antagonised the majority. There were more arguments and heated discussions over this affair than I have heard for a long time. The trouble began, it appears, in Italy. Mussolini made Roach a very attractive financial offer to make films of some of the operas and Roach saw no reason to refuse it. Mussolini put the business in charge of his son and it was suggested he should visit Hollywood. Roach didn't feel so good about that—or so he said afterwards—

"The visit of Mussolini was not my personal idea. It was suggested by an Italian banker and advocated by his father. I could not do otherwise than act diplomatically in favouring young Mussolini's trip, which was simply for the purpose of studying conditions in the industry in this country. The boy is not interested in war or politics; he's interested in business and I never imagined at the time that a business deal would become a political question."

Which seems to me quite reasonable. However, when Vittorio arrived, a Hollywood anti-Fascist League at once published various quotations from his book on the Ethiopian war. "War for us is a sport," was the favourite, with which was published the picture of a dead child. They also said (in common with many others) that the mere fact of having an American producer associated with Mussolini would harm the entire American film industry. The result of this rather ridiculous unpleasantness was that Vittorio slipped quietly out of Hollywood after staying only a week. Which was too bad, as Roach had put an entire new front to his studio—at great expense—just to impress him! It is fairly certain that the deal will fall through now and this is perhaps just as well. The Californians all expect the war to start in Europe and it would be a pity to disappoint them.

Many people think that studio work has become so efficient in Hollywood that there is very little location work done now. This is not true—it anything it is growing in importance. It is the only way of getting a natural setting and with the continual improvement of equipment it would be silly not to use all the natural advantages available here. Nearly every picture made since I was here has had some location sequences. The still here is one of the "Bad Man of Brimstone" company on location in Utah.

M.G.M. is one of the few studios even in Hollywood to have a department devoted entirely to research work. As can be imagined, this department saves many a com-

M.G.M.'s. "Bad Man of Brimstone" Unit on Location

company time and money for information on almost every subject. Under the able guidance of Nathalie Bucknall, it deserves mention here, as it might be a useful idea to develop a similar department in one of our larger studios.

A Corner of M.G.M's. Cartoon Department
(Continued on page 170)
THE FUTURE OF DOCUMENTARY

(Continued from p. 168)

a lead to their lesser brethren in the sticks. Perhaps it is because they, too, have a notion of instructing the citizenry, only keep it off the record. They would be ashamed if they were charged with it.

You will have gathered my own view. Fifteen seconds or thirty seconds in every hundred minutes: it does not matter what the proportion is. It is not good enough. We want programmes where we play first feature and since only the specialised theatres could do that, or us, our policy is to have our own theatre system. It is true that we cannot have Odeons and Plazas and Granadas. We could not pay for them and in fact we could not fill them. But what we can have is every school, every church hall, and every debating centre in the country; and we are well on our way to getting them.

Such a policy must affect the future of the documentary film greatly, for every form of circulation has its own particular inhibitions. This can be said, however: that in non-theatrical circulation, you do not need to be all the time on the jump. You do not need to be for ever giving your film a shot of strychnine to keep it on the pop. You can expect people to be at least in the dim initial stages of a thinking mood. You can expect your audience to come a bit of the way in the process of understanding and you are not for ever under the obligation of sugar-fing pills, tempering the wind to the storm lamb, remembering to give the old lady in the back row a dollop of mother love and, in general, acting like a fussy and patronising old hen. Which is what most showmanship amounts to anyway, if you remember your Wardour Street portraits. In fact, whatever happens among the second features and the so hardly patronised interest shorts, the main future of documentary is where it is now: financed by sponsors in the name of public education, and going out to a non-theatrical audience of twenty or thirty or forty million people a year, also in the name of public education. With the development of television it will appear, though in slightly altered form, and reach to more people even than that. As regards its material, it will reflect, more than ever—wars and dictatorships apart—the seriousness of its sociological purpose. Already within the past two years, it has made a dramatic approach to social material; describing such fundamental themes of public interest as nutrition, housing and health and the state of education, describing the work of public departments and making a first attempt to bring these matters into the forum of public discussion. There will be more of that.

As regards the aesthetics of the documentary movement, I beg the technicians will not concern themselves too much with what they hear. It is true that we have had to develop certain technical novelties in order to add excitement to plain material, but our big terms and our sober discussions are often just part of our selling talk; calculated to impress those dignitaries of Wardour Street who, as we all know, are so impressed with art that they fall flat on their faces before it. Wasn’t it Sam Goldwyn who talked art to Bernard Shaw? And wasn’t it Bernard Shaw who said: “That’s right, Mr. Goldwyn, you look after the art and I’ll look after the business”?

In Documentary you may take it we are sensible enough to be looking after the business. It is, as I said before, an educational and uplifting business. Like the Y.M.C.A., the Little Brothers of St. Francis, the Ku Klux Klan and the Holy Rollers—only different. In fact, technicians who are still dreaming daily that John Maxwell will pay them a hundred and fifty a week should not bother their heads about it. Documentary will do them no good—and vice versa.

PASSING THE BUCK

In the good old days of doubtful cameras, some of us—in fact, MOST of us—blamed the apparatus—PASSING THE BUCK.

Today your boss—and if YOU’RE a boss, YOU—know cameras are fool proof if looked after.

Our Service Pays. We DO look after ours.

The Buck cannot be passed. Like Venison? WE DO!

Happy Christmas

SHAW JONES' Day and Night Newman Sinclair Camera Hire Service

49 GREEK STREET, SOHO, W.1. GER: 6716
A Christmas Call from the Workhouse

WHERE are the pals of yester-years?

Here are a few of the holes and corners into which our fellows from the studios, the skill and muscle on which any British film production must be built, have fled for shelter from the icy blast.

Bookmaker, South American sheep-turner, journalist, writer of advertising programmes for a Continental broadcasting station, writer of lyrics for a non-stop revue, "non-intervention" patrol officer, war correspondent, boarding-house proprietor, commercial traveller, door-to-door salesman, non-film clerk, and "fiddler." ("Fiddling," in case you think he ought to have joined the Musicians' Union, is buying an article for credit at one end of Wardour Street and selling it for cash at the other).

A.C.T.'s employment bureau registered under 50 out twelve months ago. Over 100 six months ago. Today near 250. In all, 35 per cent. of technicians are unemployed.

Talent scrapped. Why?

Because pictures aren't being made. Because making pictures isn't profitable. Because, they say, costs are too high.

Whose costs?

Not technicians!

Many producer-speakers have located on high costs; but we know exactly where technicians are skimped to the point of lower salaries and longer hours than any others in the business, and much publicised cuts of 10 per cent or 15 per cent of our wages only reduce picture costs about one tenth of one per cent.

Some things technicians who have worked in this industry do know and notice. They cannot fail to be aware, for instance, of major studios in this country which were designed with such blatan incompetence or negligence that the cost of every picture runs up and above the cost that would have covered the same production in a studio designed by any one of our members.

In a sensible society those responsible would have been punished. Here, however, perhaps the only consistent line of protest is to reward the man designated responsible for such constructions (who may in fact not have been responsible at all) by a gift from his employees' salaries?

Recall a conversation between one of our A.C.T. investigators who recently explored the Soviet film industry for us and those he was supposed to be questioning, but who in turn were questioning him.

Q. "What are you working on now?"

A. (from our explorer) "I am not working.

Q. "Indeed. And why?"

A. "With us there is what is called a shunt."

Q. "What is a shunt?"

A. "Well, you see, the people in charge of production have lost a lot of money. Their films weren't profitable. And so now they can't get any more money for production."

Q. "Well, why don't you change these people, and try new ones?"

A. "Oh, we couldn't do that. You see, the production apparatus, the studios and all the rest of it belong to them."

Q. "What do you mean--belong to them?"

Very simple. But too plain and obvious for some people. No wonder the millionaires who own the newspapers make them yowl and yelp when, in a certain country, if a business is not going well, they get rid of the people running it and try a new lot. Someone might notice that it wasn't such a bad idea at that.

Here we do notice, that when the film business is running badly, and our boys are on the street, the only people who seem to be fixtures (and eating just as well) are the people who run it badly. And when the Government thinks of doing anything for the business, it is the men who smashed it that it asks for advice on what to do.

A man is sick and the doctor asks the microbes what medicine they'd like to flourish on.

It is a fact that the film industry needs protection. The more arithmetic of the number of theatres in U.S.A. and in Britain is the demonstration of this. The language barrier, which handicaps U.S. product in competition with home-produced in many European countries, is totally absent in Britain, where even Runyon is comprehensible and the Southern home variety sounds affected to the Northern home ear.

Other things being equal, the home market in the U.S. can return a greater initial cost than the home market in Britain, and a U.S. film can therefore use its whole income from Britain in battling murder on the British market against a competitor of equal standard striving to recover its cost out of income. A British film on the British market is like a man trying to cut a dash in the same style as his same-salaried bachelor fellow employee, while all the time he himself has a wife and ten children to keep.

Hence protection is necessary. But to protect the film industry, as it stands, is to protect not an industry, but those that barter on it.

Where is the British film production industry? Put your spy-glass to your eye. Tell me.

Around all the horizon will you see one single organisation striving to make a success of production? Striving, that, is to build up a successful business of making pictures, finding out how to, learning their job, and constructing.

There's barely a producer in the game who isn't in for some other motive. Either because he's forced by law to make a minimum of pictures as a condition of being allowed to do business, and take his profit at renting or some other phase of the racket, or else as a speculator, to make his money out of manipulating investments.

Making pictures my eye. Who cares about pictures? Not a hundred years ago a British firm made a picture which (a) didn't lose money, (b) won the award of the Hollywood Motion Picture Academy of whatnots, (c) won Missolmi's Gold Medal, (d) won a lyric speech from Goebbels (after the names of the couple of Jews connected with it had been taken off the credit titles).

On the very same day on which a newspaper connected with the producers took the occasion to declare: "British pictures are at last at the top. The men and methods that placed them there will keep them there," the employment of the last survivor of the men who made that picture terminated with that production company.
THE CINE-TECHNICIAN

U.S. competition makes film production a poor man with a hard life, but speculation makes him a rotten one, his heart and lungs festering pasture for maggots, his movements a jerky galvanism, subsiding whenever the artificial current is removed.

It is the speculation which makes fancy costs and rational organisation a joke. A studio hasn't to be efficient, it has to be showy. A story hasn't to be a good one, but a known one. A director who is a news story may have extravagance indulged, a star the moneyed layman has heard about (even if long tombstoned at the box-office from old age) must be got at the price of any crotchet, even to the engagement as well of ten unnecessary cameramen from Kamschatka, who alone have the knack of renewing her ragged profile, so long only as they will sign a contract long enough to appear on the prospectus or be mentioned at the board meeting.

Half the producers in the business know nothing about production and care little. They are window dressing, using production as an excuse to catch the finance of the passer-by. The other half are merchant middle-men, reluctantly consenting to production only so much as is easier than finding new ways of evading the regulations designed to obligate them to it.

The real producer, the man who wants to (and may be, who knows, knows how to) make pictures, is not in production, but if he exists at all is peddling his dreams around coffee stalls in company with the "independents" who call themselves so because nobody has given them the chance they'd jump at to be independent.

And dreams they will remain. Without legislation protecting not Britain against U.S.A. but him specifically against circuit booking power acting with the force of monopoly, the real would-be producer can dream on. And to expect legislation like that from a Government in our society here to-day is the same as if the grocer round the corner expected it to save him from the chain stores. Equally, so long as monopolies pack a bigger punch than individuals, so long will "impartial" controlling commissions, designed to retain but 'govern' both, à la Mayne, stay a vision from Utopia.

Then what to do? Quota Acts help, of course. They help the monopolist against the small man. But when he dines he drops crumbs. True, the speculators and the merchants will find their ways round the new one, certainly, as they did round the old.

The "quickie" will have its equivalent. A cursory examination of the new draft, with its labour-cost minimum less than the sum paid often to one single artiste, indicates the field-day it offers to the ingenuity of the speculators' accountants. The Board of Babes in the Wood will also have fun (if they try), discovering whether the minimum for purchase of foreign rights under the so-called reciprocity scheme has not, in fact, been offset against juggled prices of foreign pictures changing hands in the opposite direction.

But all in all, even if every part of a law can be dodged, it will always be easier to pretend to be conforming than to dodge all of it.

Even the "quickie" gave work.

Hence a by-product of every such law will be a certain amount of production. We can and do put up a fight to tighten the loopholes to make that by-product as big as possible. Next year some of our "plus fours" will be got out of pawn. A lot of them, if any concessions are won out of the separated quotas now.

But boom and slump is our lot. As it is the lot of every son of Adam, not—well, I nearly brought in politics here, shall we then call it 'not working in the "post-office land,'" i.e., the land where business is run socially, for service.

A small boom and slump of our own is related to the enactment of quotas. Towards the end of a law period there's no money put into our business, because speculators are waiting to see how best to wrangle the next law. Just after a new law starts there's always optimistic "sucker" money that hasn't yet found out that, in the grip of the speculators, production under the new conditions will be just as unprofitable as under the old.

But our large boom and slump is related, inversely, to the general boom and slump of the country. In a period of national slump, when the market for money returns next to no per cent., there are still vast sums accumulating for investment in the hands of big banks, trusts, insurance combines. Rather than take chicken-feed, the directors of said organs don't mind an occasional flutter in the highly speculative comedy of film finance, where even if the odds are all against you, it's at least a gamble and does introduce you to a thrilling world of starry goo-goo eyed dinner companions.

In time of national boom, happens the contrary. Today, for example, why put a penny on to such a roulette board, when cast into cannon or aeroplanes or battleships it will return to you ten-fold?

So we technicians must wait. Work when we're called, and somebody can raise money out of employing us and seeming to be interested in production. Starve when, from time to time, the unprofitability of the game, to the poor suckers who stump up the cash, temporarily gives it a bad name. (Luckily for us suckers' memories are short).

Whether we work or starve, whatever it depends upon, does not depend on us. Nothing we can do, no skill or self-sacrificing hours we may contribute, can affect one jot the question whether the studios shall be busy or be idle and empty. Those who do have some responsibility in the matter are, curiously enough, to be found at supper in the Savoy Grill, boom and slump alike.

It makes one think. The "post office" way—shall we call it?—is not perfect, but it does keep on delivering letters. And what to do about that is another question.

IVOR MONTAGU

[Editorial Note.—In enjoying this vigorous article, readers will have borne in mind that it expresses, as do all our contributions, an individual point of view.]
ZUKOR HAS HEARD OF BRITISH TECHNICIANS

(Reprinted, by permission, from "Variety," issue of October 26th, 1937)

If Paramount can find a producer in England of sufficient standing to supply a satisfactory product for release by Par in America, the company will be inclined to keep out of active production in the tight little isle. Adolph Zukor, after studying the situation in Britain, is said to have been somewhat discouraged by the troubles other American companies are having in England, notably Metro. Remembering Par's two prior efforts to make pictures in England, Zukor is believed more inclined to make releasing arrangements to meet quotas than to enter picture-making directly.

Pending any definite decision, Paramount will await further developments on the British quota laws, determining its position and plans after it has been decided whether the quotas will be on a basis of pictures or money. Zukor is strong in his belief that English producers are doing as good as Hollywood invaders could. The chairman of the board doubts that Americans in London could do any better, it as well, in view of the progress that is being made in native English production.

Zukor is of the belief that Hollywood should cooperate with England in making pictures for the British markets and for markets elsewhere, taking the position modestly that "we shouldn't hog it all" by entering into competition with the English producers.

PAR'S PAST EXPERIENCE

While reported that Par may go into production in Britain within six months, on the heels of Metro, which has already started operations, it is now regarded as doubtful whether Par will ever set up its own studio machine on English soil again, though it will continue at Joinville, France, to meet quotas of that country. Par tried production twice in England at the Elstree studios with disastrous results, once in 1926, again in 1930. While abroad, however, Zukor is said to have looked into plant possibilities, renting and other matters contingent upon any decision to set up a producing subsidiary in England. The company will turn out from four to six pictures annually at Joinville (French quota), i.e. Blementhal in charge of production there. While he will not openly admit it, Zukor by inference suggests a preference for a releasing tie-up with any British producer who can supply the company with a brand of product it could consider to handle in this country in line with the coming quota restrictions.

Aside from being optimistic about the advances made by the English film-makers, with whom Zukor is inclined to cooperate, the chairman of the Par board is chary concerning the sales outlook in the foreign market and predicts that for Par it will run 25-33 per cent better in sales than last year. He bases this on contacts with Par sales representatives as well as with exhibitors who play Par product abroad. Zukor is strongly of the opinion, however, that the U.S. must give greater consideration to the development of foreign markets, suggesting that there has been neglect so far as Britain and the Continent are concerned.

George Elvin

We regret to report that Mr. George Elvin, our popular and hard-working General Secretary, is seriously ill with bronchial pneumonia.

George was indefatigable in the leading role he played in the employees' fight to amend the Government's "Quota Bill," and consequent overwork resulted in the run-down condition which led to his present illness. His absence is particularly felt at such a time.

At the time of going to press, we learn that he has safely passed the crisis, and we are sure that all our readers will join us in wishing George a speedy recovery and good health in the New Year.
FROM THE QUOTA BATTLE FRONT

VARIETY AT THE VICTORIA PALACE

(From left to right): George Elvin (A.C.T.), George Hicks (T.V.C. General Council), T. O'Brien (N.A.T.E.), and Anthony Asquith (A.C.T.)

New Kodak Stock

Practical tests with these new stocks under normal laboratory processing conditions show that they are the greatest advance in duplicating emulsions up-to-date.

EASTMAN FINE GRAIN DUPLICATING FILMS

The new products are a Fine Grain Duplicating Positive Film and a Panchromatic Fine Grain Negative material. The Fine Grain Positive Duplicating Film is very slow and needs a 500 watt lamp in the printer house to provide adequate exposure. Both stocks should be developed in the Borax D 76 developer. An overall gamma of approximately .81 for contact dupes will produce an equivalent contrast to that existing in the original negatives. This can best be obtained under normal conditions of machine development at a temperature of 65 F., by developing the positive for approximately 9 minutes and the negative for approximately 5 minutes, which should yield gammas of 1.3 and .7 respectively. The only drawback to the new stock is that the Fine Grain Duplicating Negative Emulsion being panchromatic must be handled under Wratten Series III safelight, which is difficult with optical work. This could perhaps be overcome by manufacturing a similar negative emulsion specially for optical work, with a lower actinic value, so that it could be handled under a brighter safelight.

Canadian A.C.T.

Welcome news from Canadian cameraman George Rutherford, that the plan put forward at a Toronto meeting of cine-technicians to form another British Empire Unit of A.C.T. was accepted by the key-men, and secretary Roy O'Connor is preparing the organisation so that they can all get into action.

India has already a branch of A.C.T., and we are looking forward to the boys "down under" to form up in Australia. The Canadian branch will cover over 4,000 miles of territory, We wish them good shooting and Happy New Year.
OPTICAL PRINTING and OPTICAL PRINTERS

By ALFRED C. SKITTRELL

OPTICAL printing, or projection printing, as it is sometimes called, is a process of rephotographing from one film to another at unit magnification. The apparatus necessary consists of a cine camera with a registration movement and a printer head (or projector) also with a registration movement, mounted upon a lathe bed so as to face each other. The camera, its lens, and the printer head are mounted upon separate sliding stands, adjustable by hand, and both vertical and lateral movements are usually provided for all three.

Accurate registration is of the utmost importance. Lining up for exact registration is difficult if it depends entirely upon a scale or indicator of some form, no matter how fine the mechanical adjustment may be. A better and safer method is to use a target film. This consists of a pattern of lines photographed on cine film, and when a piece of this is placed in the projector and its image projected on to a similar piece placed in the camera, the correct setting for exact registration becomes apparent when the two exactly superimpose.

Optical printing is utilised for an endless variety of work. Full control of duplicating print and negative stock is possible at all times, permitting a very great degree of manipulation. Many effects formerly produced in the camera such as fades, dissolves, matte shots and split screen and composite scenes are now made on the optical printer, and in addition an entirely new range of trick effects such as wipe-offs and trick transitions has been made possible. The production of fades and dissolves is relatively simple. A print is run through the projector and copied in the camera, while the camera shutter is manipulated to effect fading. Wipe-offs are a little more complicated and there are several ways of producing them. One is by means of a mechanical device, geared to the camera drive so as to move as the film runs through, the direction and speed of the movement having been prearranged. With this method only a limited number of effects are possible and the more usual method is to use film mattes or masks. These allow a much greater variety, limited only by the ingenuity of their devisors and the means at hand to produce them. The required pattern is worked out step by step, in black and white or in light and shadow, each step being photographed. A print is taken from the negative so obtained and the wipe-off effect is produced by running first one and then the other of these two film masks through the projector, while the duplicating print is running through the camera, in contact with the negative raw stock, a bipack magazine being used. (Fig. 1).

Before the advent of the optical printer, many special effects were made during the primary filming, ghosts or visions, glass shots, matte shots, in fact everything to make the cameraman’s life unbearable and to waste time and pile up costs. All such work can now be done upon the optical printer. In fact it can safely be said that the optical printer is definitely one of the most flexible tools at the disposal of the film-technician.

One very important factor in optical printing is first-class quality in duping and laboratory manipulation plays an important part in attaining this. The slightest variation in the standard is felt more by the optical printing department than by the production department owing to the fact that the dupe neg must match the original. In production there are three basic laboratory processes, viz:

1. Developing the original negative.
2. Making print from original negative.
3. Developing print from original negative.

In optical work there are five, viz:
1. Making Duplicating Pos.
2. Developing Duplicating Pos.
3. Developing Dupe Neg.
4. Making print from Dupe Neg.
5. Developing print from Dupe Neg.

Obviously the margin of error is greatly reduced, and successful results demand intense laboratory co-operation. Having arrived at a satisfactory routine of duping to fit existing conditions, consistency of laboratory work is vital if good results are to be continuously achieved. First in importance is the making of the lavender duplicating print. Obviously, without a good master the duplication of the original is impossible. Strict sensimetric control is imperative. A too soft or too light print will give a too flat neg, and conversely a too hard or too dark print will give a too contrasty neg, and in the case of a too dark print, an increase in graininess.

Slight variations can be compensated for, but this, of course, means a departure from the established routine and, in addition, uncertainty as to results must exist until those results have been examined and tested. This importance of the duplicating print cannot be too strongly stressed. Indeed, it is safe to say that unless it is exact, true duplication of the original is a practical impossibility.

From the mechanical point of view, the quality of the dupe is affected by three things: 1. the lens; 2. evenness of light; 3. uniform speed in running.

Besides the regular cine lenses, there are copying lenses on the market which give quite satisfactory results. A focal length of from four to six inches allows comfort-

Figure 1

(Continued on page 177)
LEIGH AMAN—(continued from p. 106)

The recently inaugurated Cartoon Department at M.G.M. is interesting, for, as can be seen from the still, the methods employed are almost identical to some of our own cartoon production units.

The following figures are, I think, worth giving. They do show the size of the industry here. There shouldn't be any excuse for making a bad picture! Figures are prepared by Nathan D. Golden, of United States Department of Commerce, as of August 1st, 1937.

Theatre investment ... $1,880,000,000

 Studios investment ... $100,000,000

 Distribution investment ... $20,000,000

 Estimated total gross box office receipts in 1936 at U.S. theatres $1,000,000,000

 Approximate world attendance weekly was ... 220,000,000

 Approx. annual Hollywood payroll $85,000,000

 Approx. weekly Hollywood payroll $1,650,000

 Estimated cost of production in 1936 $135,000,000

 World expenditure by American companies on advertising ... $110,000,000

 First-run theatre rental per picture ranges from $5,000 to $25,000 weekly.

 Of 764 films released in U.S.A. last year 547 were American. Origin of others: Argentina 1, China 1, Czechoslovakia 2, England 40, France 15, Germany 70, Hungary 12, Ireland 1, Italy 20, Mexico 26, Mongolia 1, Palestine 1, Poland 4, Russia 13, Spain 2, Sweden 7.

 Number of producers of feature pictures was 214 of which 164 were in California and 50 in New York.

 Approx. number of persons employed in motion picture industry in U.S.A.: 282,000. Of these, 28,500 engaged in production, 12,500 in distribution and 241,000 in exhibition.

 To conclude, I reproduce a memo, from the "Vice-President in Charge of Production" of a major studio to his department heads:

 To ALL DEPARTMENT HEADS.

 Confidential Correspondence.

 If just seems impossible to cope with a certain condition that is going on here, that is, leaving all unnecessary lights burning throughout this entire plant.

 When the crews stop for lunch no one makes an effort to kill all the lights, the same thing goes for any picture that is being worked on. They just sneak out and leave the lights burning. No one seems to care one iota what is going on. I do not blame the men working, I blame the foremen and the people who are at the head of each department.

 I am going to hold you responsible and you in turn can hold your foremen or anyone who directs this type of work.

 There is no reason why this should go on, other than it seems certain people haven't much interest in their work and are just here for the ride.

 I hope I won't have to send any more memorandums out like this again as I am tired of being the only one that takes an interest in this type of saving.

 When Alexander Korda writes a note like that to his employees, then we shall know that Hollywood is really on its way to England. Until then I think we're safe— is that the right word?

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3. The film is rendered impervious to oil, water or dampness, and is immune to any climatic conditions.
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OPTICAL PRINTING (continued from p. 175)

able working space between camera and projector and a speed of 1.5 should be ample. A well diffused tubular projection lamp of 1,000 or 1,500 watts is very satisfactory for printing light and the motor must be strong enough to drive the machine without speed fluctuations.

All optical printers usually start with the simple layout described. There is no standard, each is more or less individual, but if the printer is properly designed from the start, additions can be made easily to become permanent parts of the machine.

As a particular example of design, the optical printer used by the Olympic Kinematograph Laboratories may be described. Figs. 2 to 9 show different views of it. The machine is one of the most modern in design, very easy and precise in operation and extremely efficient for all-round trick work.

![Figure 2](image)

Fig. 2 is a complete view of the machine. The lathe bed is 8 feet long, allowing full range for enlarging and reducing work. At the extreme left can be seen the motor and gear box (A). B is the main driving shaft. C and D, projector and camera driving shafts. E, the transmission gear box, through shafts F and G to rear camera platform, which is seen with the screen staging on the right of the picture.

![Figure 3](image)

Fig. 3 shows the machine from the projector end. A is the motor; B, a gear box giving choice of three speeds. 4, 8 or 16 feet per minute; C is the printer head. This is a standard Bell & Howell camera of the shuttle gate type, with the rear pressure plate removed to give full aperture clearance. D is a tube carrying air at a pressure of 30 lb. to the square inch to the gate, just below and behind the aperture. This is to prevent "breathing" and to remove any dust before the film enters the gate. E is the projector driving shaft. F is the stop-motion gear, and G the gear lever. H is the footage counter, which also registers frames. This is essential, as all work is done I turn 1 picture and must be correctly timed to the frame. I and J are calibrated controls for vertical and lateral movement of the projector. K is the lamp house, and L a water tank to reduce heat at the aperture. The light is reflected to the aperture by a white card (M) set at the required angle. In the case of glass shots a surface silvered mirror is substituted for this card, giving a much higher light transmission.

![Figure 4](image)

Fig. 4 clearly shows the lay-out of the three members. A is the printer head, B the lens, C and D calibrated controls for its movement, and E the camera. This also is a shuttle gate type Bell & Howell, in which the pressure pad has been cut away and a prism mounted behind the aperture with a look through window (F) in the camera door. This view also shows a device (G H I J) for printing alternate frames or one frame in three or vice versa.

![Figure 5](image)
Fig. 5 shows this device in detail. A and B are revolving camshafts driven from the main shaft C. D and E are solenoid contacts which energise electro-magnets, (Fig. 1, G and H), attached to the stop-motion control levers on printer head and camera. The camshafts on this device are changeable for varying ratios and the whole device can be mounted or dismounted in less than two minutes.

![Figure 6](image)

**Figure 6**

Fig. 6 shows the wipe-over device (A) in position. B is its drive transmission gears and C the driving shaft. In the open camera can also be seen the inspection prism (D) previously mentioned.

![Figure 7](image)

**Figure 7**

Fig. 7 is a close view of the camera unit showing a fader gear box (A) giving automatic fades from 1 up to 6 feet. B is the shutter hand control. C is the stop-motion pin. This ensures that the camera always stops with the shutter completely covering the aperture, so that it is impossible to fog a frame in the middle of an effect. On the projector the reverse is the case and the stop-motion pin locates the shutter in the full open position.

Fig. 8 is a view of the camera mounted on the rear platform for screen work and shows the method of picking up the drive. This set-up is used for book-leaf and other flip-over effects where the action is required to continue during the transition, and is of great advantage in the working of intricate matte shots.

The machine is also provided with a connection for a flexible drive to the camera, so that it can be used on a tripod while photographing through the glass screen for swing or panoramic effects or model work.

It is obviously impossible completely to cover such a wide subject as optical printing in what must, of necessity, be a short article. Should any reader require further information or desire to raise any question in connection with this article, the writer will be pleased to answer any communication either through "The Cine-Technician" or addressed to him at The Olympic Kinematograph Laboratories Limited, School Road, N.W. 10.

**OBITUARIES**

The technical side of our industry has received a great loss by the untimely death of **WILLIAM C. VINTEN**, one of the veterans of the film trade, whose engineering skill had been devoted for nearly 40 years to the manufacture of cinematograph machinery.

"Billy," worked for A. S. Newman, R. W. Paul and Charles Urban (Kinemaolor) before forming his own company which became limited in 1928. He greatly helped in the internationalising of the standards dimensions of the industry was a member of the Royal Photographic Society, the Kinematograph Manufacturers' Association, Society of Motion Picture Engineers, and the British Cinematograph Society. For a number of years he built cameras and studied the problem of his fame are the Model "C" camera and the one for topical work with matched lenses, also a camera only just out of the experimental stages that will take 300 pictures per second. And his automatic laboratory processing plant is successfully working in many laboratories.

In spite of ill-health, he always had a cheery word for everybody and his technical help was always at the disposal of the cine-technician.

He leaves a wife, two sons, and three daughters. Charlie, his eldest son, carries on. He has a great engineering prestige to live up to and we feel sure the memory of his father's great skill will spur the firm of W. Vinten Ltd. to even greater heights.

We technicians mourn a dear friend and skillful colleague.

We also regret to report the death of our well-beloved member, **PAT TOBIN**, who passed away at Streatham.

Pat Tobin was a well-known cameraman in Ireland. He filmed a number of Irish productions, including "The Life of St. Patrick." During the "Troubles," he was a cameraman for the Irish Events Company, and secured many amazing pictures. He was arrested during this time and was about to be tried for murder, the pyro stains on his fingers being mistaken for the stains on the hands of a trench polisher suspected of the crime. The active intervention of the Kine-Cameramen's Society, who obtained the support of a number of M.P.'s, secured his release. Coming to England, he was for a number of years a news-reel free lance. Amongst the events he covered during this period was a trip to Rome where he filmed in the Vatican. Lately he was engaged in colour cinematography, first for Gaspaolor and later for Spicer-Duthay.

Popular with his colleagues, skilful as a technician, Pat will be deeply missed by A.C.T.
BIOSCOPE WALLAHS

by

OSMOND BORRADAILE

Filmimg on the N.W. Frontier of India

LAST May, I was appointed by London Film Productions to go to India to photograph scenes for their second Indian film. We were instructed to proceed to the North-West Frontier, a very different country to that of Mysore, where I spent over a year with Robert Flaherty on “Elephant Boy.” This time, we were heading for one of the hottest parts of a hot country, with the hottest period of the year just beginning. This knowledge was not very comforting, especially as we were to work in colour, which meant that the all-important task of trying to keep the negative cool—or I should say negatives, because we were to use Technicolour—would give us many anxious hours and would be the cause of many headaches.

As our camera was needed for the Coronation, we were unable to leave before May 16th, on which date Christopher Challis, I and our 60,000 feet of negative left for Southampton to embark in the Imperial Airways’ flying boat “Canopus.” Yes, we were to fly to India. They couldn’t get us warmed up fast enough! Owing to the weight of our equipment, it was necessary to split our party and it was decided that Henry Imus would follow by the next plane, bringing with him his pet Technicolour Camera D4. Challis and I had a rather rough trip as far as Brindisi, then we had our only carefree day to Alexandria; from then on, we were worried about the film; we felt it was all right as long as we were in the air, but as soon as we landed that old plane seemed to get hot enough to melt. What a relief to be in the air again. They were unable to carry us through to Delhi by air, so at Karachi we did our necessary shopping, engaged one Syed Hassin as bearer, and took the train for Delhi. In our compartment we placed a big tin bath into which we stacked our negative, surrounding it with mounds of ice (or what was supposed to be mounds, a mound being 18 lbs.), and covered it all with two layers of heavy canvas; another mound was kept in another tray, but uncovered; on to this ice we directed all three fans in an effort to cool the atmosphere. It was necessary to renew our ice every two or three hours. Our trip across the Sind Desert was very hot, but in the above manner we were able to keep our film within the safety margin.

At Delhi, I managed to get in touch with Geoffrey Boothby, who had arrived a few weeks earlier and was then at Peshawar; he told me over the telephone that the officials had been most helpful, had promised us every possible assistance and had advised making our base at Peshawar. So that evening I caught the train to join Boothby, leaving Challis and Imus, who had just arrived to collect the few things we were having made: umbrella stand, ice chests for magazines, etc. Boothby and I spent the following week spotting locations, getting permits, arranging for troops, hiring a car and a lorry, having reflectors made, and so on. To say that it was hot is indeed putting it mildly, the thermometer always keeping on the wrong side of 100°, but it rose nobly to the occasion of our first day of shooting, when it won the hot weather sweepstake for all India by reaching 120° in the shade. Of course, we were in the sun! What a day! We were shooting the ride factory in the Kohat Pass, which is in tribal territory, where every man—and many children for that matter—carries a gun. I was amazed to see the fine work those chaps do with such crude homemade lathes and tools. In appearance, the finished ride is hard to distinguish from our army service rifle, from which it is copied; however, the marking such as “V.R. 1932” generally betrays its origin. I didn’t care to risk firing one as I haven’t much faith in rifle barrels made from railway track, although I was assured that they are quite dependable and accurate for the first fifty rounds.

The next few days were spent in picking up scenes in the Peshawar Bazaar; the heat still persisted and seemed to be intensified in the crowded streets. The task of keeping the film cool while on location was more or less successfully accomplished by keeping the magazines in our portable ice chests until we were ready to shoot. Then one would be loaded on the camera and covered as quickly as possible with wet cottons. By now, I had decided that it was impossible to ship the exposed negative back to England unaccompanied, as it was sure to be subjected to high temperature for a much longer period than Technicolour deemed advisable (a measure of precaution that always seemed to exceed the comprehension of officials in the cool of the Denham Studios, judging from the numerous telegraphic requests for the despatch of the exposed film). Of course, I had very reluctantly taken that decision, as it prevented me from getting any reports from the “rushes” and meant that I should have to wait until I returned to England to know the result of the expedition. Working in such darkness was not very comforting and possibly accounted for some of the 26 lbs. in weight I left behind in India.

Our script called for an important looking settlement surrounded by gaunt snow-capped mountains. Yes, we had a script! . . . or I should say scripts, for it was a disappointing air-mail that failed to bring a different version from Denham. It was in search of this location that Geoffrey and I drove to Srinagar, in the beautiful Kashmir Valley; a more beautiful place I have yet to see. Here we were surrounded by snow-capped mountains, but we could not find a suitable village. It was all too beautiful and peaceful for our purposes; we needed a more dramatic background. So it was with reluctance that we returned to the heat of the plains. We were advised to drive through Kohat and on to Parachinar on the Afghan border.
Here again, we failed to find all the conditions we required and so decided that we must try Chitral, a place that indeed looked and sounded promising from the pictures and descriptions given to us by the few people who had visited the outpost. We were indeed privileged to be granted permission to go to Chitral, a place that very few civilians are allowed to visit as it is so far beyond the frontier and necessitates travelling through a territory requiring a military escort. We obtained the services of Captain E. Grey, H.I.T., to arrange for the trip. The preparations all completed, we left Peshawar in June and drove the 80 miles through interesting and historical country to Dir, the present end of the road. Here we said farewell to our car and two buses, and after another day of preparation took the trail.

Our caravan consisted of forty pack mules and half a dozen riding ponies, a truly impressive sight as we filed past the fort on to the mountain trail. Our first march was nine and a half miles to Gujar Post, with a climb of over 4,000 ft. It was very warm, and I was greatly relieved upon opening the “yackdans” (a sort of trunk that slings on each side of the mule), to find the film still surrounded by ice and a goodly supply left for the next day; from then on, we should have no trouble in getting snow from the mountains.

The marches were not very long, but rather strenuous, and by the time camp had been pitched, ice or snow arranged for, a quick splash in the ice-cold stream, our meals finished, we were ready for an early turn in, to be watched over by pickets from the post. The second march took us over the famous Lorawri Pass, over 10,000 ft., in elevation and as cold as any studio official’s heart. Here we changed escort, as the pass is the boundary between Dir and Chitral States. From this lofty position we could see peak after peak stretching off into the haze. I must say that I was thrilled at the prospect of photographing such an exciting country, so much so that upon reaching Ashret Post, I hurriedly devoured my meal and climbed the mountain about 3,000 feet above the camp, from where I had another excellent view of mountain scenery, and also the sport of following fresh bear tracks. For those with a spirit of adventure, what an allure... this gateway to Chitral with her towering peaks, her rushing waters that seem to beckon you on... 

The trail to Kirkhali Post, our next march, followed for the most part the rushing stream that we had first picked up after crossing the ice field just below the pass: it was rapidly becoming a mighty torrent, for every canyon we passed brought its contribution from its own melting snow field. We had many occasions to congratulate ourselves for having trusted our camera and lens-case to the coolies, rather than to the temperamental mules who invariably kept to the very edge of the non too wide trail which was often cut from the face of the rock with a sheer drop of hundreds of feet to the stream below. At Kirkhali, our stream joined the swift Kabul river, which we followed the next day into Doshi, where we were made welcome by the British officers commanding the brigade of troops stationed there.

We made Doshi our base for the next month, shooting scenes with many troops and the glorious mountains for a background. The officers and men entered into the spirit wholeheartedly and gave every assistance to the mad “bioscope wallahs.” To Indian troops, there is only one name for motion pictures, that being “bioscope”... and they know we are mad for working all day in the blazing sun.

Our next move was to Chitral, the capital of the State, 25 miles beyond Doshi. This we did by cars that had been packed in from Dir and reassembled in Doshi. The drive is a hair-raising one, but as there is, at present, only fifty miles of passable road in this mountainous state, the drivers know every bump, and bounce us along at amazing speed. At our journey’s end, we were made welcome by the Assistant Political Agent who presented us to His Highness the Miltier, whose present palace is the old fort that was besieged in 1895, and in whose relief one of my cousins played an important part. It seemed strange to find my name well known in this distant outpost.

Although we were surrounded by snow covered peaks, the thermometer rose above the 100° mark each day, so the film still required constant attention not only before, but during and after exposure. Again, we were given every assistance by everyone who could help; such a spirit makes working a pleasure even in the boiling sun, and it was with regrets that I bade farewell to my new friends and looked on Tirich Mir, the 25,426 ft. mountain, for what I hope will not be the last time.

The return trip to Peshawar was uneventful with the exception of a mile taking a high dive over the “hund” with a load of exposed negative. It made a sheer drop of about 30 feet, then somersaulted over and over for another 50 feet or so. As I watched it fall, my feelings were divided between the poor beast and the negative; both must surely be lost; but a miracle happened: before men could reach the beast, it rather shakily clambered to its feet and upon closer inspection the only damage revealed was a few cuts and bruises for the mule, and two smashed yackdans; the film containers were not even dented.

We found the heat of Peshawar more trying than ever, especially after opening the mail and finding several new versions of the script... Yes, the troops are right: the “bioscope wallahs” are surely mad! With our remaining unexposed negative, we went to Landikotal, in the historical Khyber Pass. Here again the support and co-operation extended to us made it possible for us to get some exceedingly fine scenes. Our negative all exposed, it only remained for us to pack, say farewell to our friends, and get our film back to England as soon as possible. This happened to be by boat, which gave Challis and I time to induce Imus to shave the terrible growth he called a beard. I also had time to reflect on the trip and wonder if after three months of such trying conditions, the negative and camera had remained in good condition.

It was a great relief and most gratifying to overhear, after projection, that even the brains of the industry acclaimed our work as excellent. Being just a technician, I take off my hat to Geoffrey Boothby, the director, Henry Imus and Christopher Challis, of Technicolour... a better crew never went anywhere.

**Sound Pioneer**

A recent invention by the Russian, Prof. Poliakoff, has revealed the fact that a patent warrant was issued to him in Germany for the recording of sound on film by an electrical process as long ago as 1889. This probably makes him the first man to have electrically recorded sound on film.
LAB TOPICS

As in this issue, so in future issues we hope to give you a page of laboratory news and developments, apart from the usual laboratory articles which are published from time to time.

INTRODUCTION

Elsewhere you will find an excellent article on Optical Printing by Mr. A. C. Skittrell. Once again we ask all those who are keen on making these pages as interesting and useful as possible to help us. If you have specialised laboratory technical knowledge, or a new idea that is likely to help or amuse your fellow workers, send your efforts to us for publication under the heading "Laboratory." Items which are too long for this feature will appear elsewhere in the journal.

The year now drawing to a close has been spent chiefly in consolidating our strength. Each week makes it more obvious that we shall soon be 100% strong in all laboratories, an achievement which cannot but lead to better working conditions, stabilisation of wages on a higher plane, and the attendant advantages of a healthier and happier band of employees. Several weeks were spent getting together the data for our case to be put before the employers and anyone reading it cannot but admit that we have more than just cause for complaint, especially with regard to some particular laboratories. With regard to the employment bureau, many lab technicians have been found permanent situations. Laboratory managers should note that they are at liberty to make use of the bureau whenever they need extra technicians. There is no charge for the service. Social activities have been greater this year. Humphries and Pathe's gave a social which was a distinct success. There was a trip up the river Thames in the summer, and last month the A.C.T. Ball. Both events were well attended by the lab section.

Did you hear about the positive developer who on being asked why he had under-developed a dozen rolls said that he was in a hurry to get home?

The good old days—or were they? The following by Mr. M. J. Soper may help you to form an opinion:—

REMINISCENCES

So much has been said and written about some of the earliest pioneers of cinemato-graphy, and of their adventures with the weird and wonderful apparatus with which they had to produce their results, that I thought it might interest and amuse some of the younger or at least some of the less experienced of our laboratory workers, to read of the adventures which often fell to the lot of some of the earlier technicians.

While I do not presume to place myself in the same category as the pioneers who have written in "The Cine-Technician" from time to time, still I can go back a matter of 25 years or so, during which time the laboratory section of the trade has, in keeping with the production side, so changed that unless one kept in constant touch with it during those years, he would often find himself completely out of his depth.

For example, one of the first printers I can remember was called a "Darling" after the maker's name, but I am afraid we often called it other names which were far less endearing. It had a lamp house which usually contained a small carbon filament lamp about 20 c.p. which was mounted on two runners like tram-lines, and the lamp was pulled backward or forward as occasion required, from the outside, with pieces of string looped to the fingers of the left hand, while the machine was hand turned with the right. As the lamp only had a run of about three inches, and the negs. were not so even as they are now, we often had to regulate most of the exposure by fast or slow turning. I remember having to work one of these machines with an incandescent gas mantle in the lamp house. One can imagine the result if a very dark scene came into the gate and the lamp suddenly jerked forward.

Development was carried out in flat dishes and the film wound on what was called a "pin frame." This consisted of a square of brass rods, and also rods from corner to corner, with a handle in the centre for use when inspecting the film. Along these rods at intervals of about \( \frac{1}{2} \) in were brass pins, on which the film had to be wound (collodion to pins). The loaded frame was then dropped into the developers, and woe betide the winder who "framed it up" if it was too loose, because it either came off the pins when dropped in the solution or came dropping over one's arm when held up for inspection. In either case, the wretched boy who wound it on was usually rewarded with liberal applications of "developer's clog" to his rear portion. These frames, however, had their uses, and were admirable for "putting one over" on the lads in the drum room.

It must be remembered that all raw film was at that time black and white only, and had to be stained according to the subject matter in a variety of beautiful colours which were, however, very difficult to remove from one's person or clothes. It so happened that the stainier did not approve of the fellows in the drum room he simply waited till he got a blue, red or some such bright colour, and forgot to rinse it after staining; the result was, of course, that when the loaded drum was started, it sent out copious showers of multi-coloured dyes, and the language those lads saw fit to use was nobody's business.

The drum room was usually fitted with large circular drums, on which the film had to be wound. These were about 6-7 ft. in diameter, and about 10 ft. long, and with careful drumming would hold from 800 ft. to 1000 ft. of film, which was dried by the revolution of the drum by motor, at quite a good speed. The chaos that ensued should one of the ends break away while the drum was at speed, can better be imagined than described.

It is impossible in the space to give a more descriptive account of the trade in those years; but which of us "old uns" do not recall the silver puddings over which we watched so carefully, the smell arising therefrom, and the share of the proceeds when sold, and which of us have not made nocturnal prowlings in Wardour Street, with a 400 ft. tin of "silver mud," probably purloined from one of the aforesaid puddings?

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Cinema Log

We Look Back Ten Years

It was ten years ago when the first Film Quota Act was being prepared, and it is interesting to look back and review the industry in those days. In 1926 production had practically ceased, the only organisations representing employees in the production field were the Producers' Association, under the chairmanship of George Pearson and the Hon. Secretarship of Sidney Morgan. Backing these were 28 producers, including Maurice Elvey, A. E. Coleby of "Call of the Road" fame, Sinclair Hill, George Duker, Jack Raymond, Anthony Asquith (our own beloved President), A. V. Bramble, Tom Bentley, Manning Hayes, Hugh Croise, Guy Newall, Cecil Hepworth and the late George Ridgewell.

The old Kinema Club, at 9, Gt. Newport Street, had together the actors, including Victor McLaglen, Teddy Doran (who later became M.P. for South Tottenham), Pat Mannock (Daily Herald screen critic and then a scenarist). Led by George Ridgewell, this band used to hold open-air meetings at Irving's statue in Charing Cross Road and also in Hyde Park in an endeavour to promote interest in the proposed Bill.

Technicians were represented by the late Kine Cameraman's Society which had just lost its funds in the Farrow's Bank crash and, as most of its members were out of work, had not a penny for a fight. This Society had no offices, no paid officials and as its President and officers were nearly all in the newsreels, no real sympathy and knowledge of production problems. Still, in spite of this, it managed to do something towards promoting the Act. N.A.T.E. were in those days only dealing with the theatres. There were few studios built as such then. Convereted skating rinks, or glass houses, were the order of the day, and the Hackney Road Studio was a converted Gas Retort House. Gaumont's, Shepherd's Bush, was a glass house, and so was Ealing, then Barker's.

Films were silent, cameras hand-cranked, and there was no "Pan" stock or colour films. Lighting was mostly old type Westminster's or Mercury Vapour Banks with no "spots." Lenses worked at f/3.5 and even f/1.5 and were not colour corrected; make-up was No. 5 greasepaint, which made the actors appear to have a bad attack of jaundice.

On the exhibition side, B.P.T. was the only large circuit, and Graham Cutts was just designing his super.

In the labs., wooden frames holding 150 feet were in use for development and the stock was dried on revolving drums. Red or orange lights lit the darkrooms and visual inspection for development of both neg. and pos. was the order of the day. Sensitometric control and our old friend "gammu" were unheard of. Wireless still used the crystal and television was only a ventriloquist's dummy's head, revolving lenses, bits of wire and other strange gadgets and a burning enthusiasm in the hands of Baird in a Dean Street back room. Time marches on.

In the Street of Adventure

Talking to a well-known film columnist in Fleet Street the other night, he expressed in strong terms his disgust that A.C.T. should attempt to ruin the already ruined British Film Industry by attempting to limit foreign technicians. Dramatically declaring that "Art" was international, he appeared to ostracise British technicians from international art, no doubt reasoning that it is essential to have some high-sounding foreign name and to have been trained in some non-existing Continental studio to even light a title card. I suppose we should only blame the British technicians' bad publicity for a statement such as this. When "Herr von Schnitzell" arrives in England with a blast of trumpets anything he says is published without checking. On the set he loudly slams his hands out of his British crew of assistants, making them appear to the crowd on the studio floor a bunch of "nit-wits," instead of as is often the case a competent bunch of good scouts pulling a foreign incompetent out of the mire for the benefit of a British film, and just quietly taking the knocks. You see, my friend the scribe never hears of the foreign technicians' pictures that are deposited on the shelf, bringing in their train great loss to its financiers. We know foreign "Aces" who are not "Dukes" and with whom it is a pleasure to work, so, smarting with indignation at this unfair comment on my brother technicians, I read that

Jack Warner says during the incoming year, starting next February, two international world-scale productions will be made at the Teddington Studios of Warner Bros. First National, for world release in the 137 exchanges under the Company's control. Full programme will be fifteen pictures involving about $160,000. He chose three Teddington productions, "Perfect Crime," "You Live to Learn," and "Mayfair Melody" for American release without reciprocity.

Contemplated production will not import technicians from abroad. Mr. Warner expressed his satisfaction with British ability and quality of production. Warner Bros. will make British pictures in colour, but not at the moment—so which of these two people is right I leave to your imagination.

Kinema Exhibition 1937.

The exhibition of Kinematography was opened at the R.P.S. by Col. J. T. C. Moore-Brabazon, D.S.O., M.C., M.P., Hon. F.R.P.S., who was during the Great War head of the R.A.F. Photographic Section, is a director of Kodak's, and also holds No. 1 pilot's certificate for flying issued by the Royal Aero Club. I often met him when filming in St. Moritz, where the Colonel was a great exponent on the "Cresta Run."

In his opening remarks, he said the best reproduction of sound was procured by photography and that synthetic sound might be produced to cut the American accent out of films. In a short time our favourite actor will be able to sing a perfect song with a range far outreaching the finest singer we have ever heard. "the cinema got into wrong hands in the early days and in my opinion has never got out of them." Further, he pointed out that the amateurs in the colour field could beat the 35 mm. professional cinematographers owing to the stock that was available.

A number of competition films were shown and in the professional field a very fine G.B. Instructional film
was "The Catch of the Season," being the birth, life and death of a trout, and containing very fine microscopic and scenic photography. A monochrome amateur film. "Bhil Wedding," was a 9.5 mm. documentary taken by S. Jepson in India. Most interesting and made the audience realise what fine photography and projection can be obtained with this small gauge film. M. Natan’s 16 mm. "North Kensington Nursery School" contained some remarkable studies of small children and told the story very well; his "Sunday in Chartres," filmed in one day with Kodacolor was a very fine piece of work. The interior of the old Cathedral was shown by means of a series of shots showing the stained glass windows that were really beautiful; the tempo was very good, starting slowly with the people gossiping and going to church in the morning, and quickening in the afternoon as the people go to a typical French Fair. If only we could get this type of film in 35 mm. that they could print. Another fine amateur colour epic was "Birds of the Reeds," taken by J. Chear, a Civil Servant, on a little stream at Welwyn. J. Chear is a quiet fellow who declares he is too nervous to film people, but in the nooks and crannies he waits for hours to shoot these delightful colour studies of bird life.

Going back to black and white, we had a 16 mm. plaque-winning film by D. J. Carnegie—"Kenya Farm"—a documentary with speed, showing all phases of life on the farm. Photography was very good, camera angles and effects quite up to professional standards. Of course, one misses sound, but these efforts should be viewed by professionals as they show to what high standards the amateurs have risen.

By the way, what a change Dr. Spencer has brought about in the R.P.S. His spirit is reflected in the whole of the Kinematograph Section, who were bubbling over in their very successful endeavours to make this exhibition so attractive. Fine stills by the studios; modern lighting equipment by Mole-Richardson and Beards; cameras by Newman and Vinten; and a galaxy of sub-standard equipment, were there to delight the heart of the photographer. Jolly good show.

"Medicine To-day and To-morrow"

In the above-named journal, Dr. D. S. Greig, M.D., tells the story of the production of the Bermondsey Borough Council’s health films.

Dr. D. M. Conlan, Medical Officer of Health in 1923, with only still photographic experience and aided by assistants from his department, prepared a series of silent films. The work and preparation of scenario, shooting and cutting was in the hands of these amateurs, processing only being in the hands of a professional firm. 1924 saw his first masterpiece—"Where There’s Life There’s Soap," received with great popularity. Simple in form, direct, and sometimes brutal in statement, it was designed for use in schools for children of all ages. Dr. Conlan composed snappy doggerel verses on soap such as

"The skin contains a million drains,
And you must keep them clean
For dirt will choke a drain
As from this picture can be seen."

A couplet or verse is thrown on the screen. The children gaily sing the verse, and it is then illustrated by a section of film, and the whole soap and dirt epic goes through, finishing with shots of Bermondsey’s special bathing facilities.

To-day, Dr. Conlan runs a film unit with studio at the Town Hall and uses musical backgrounds and synchronised commentaries prepared on discs. Fourteen films are in his library and two films are added each year, and colour films of great beauty illustrate the Borough’s growing amenities. Their latest production, "Some Activities of the Bermondsey Borough Council" is a superb document of civic education.

This just shows what can be done.

These films are available in 35 mm. and 16 mm. non-flam stock, and four afternoons a week Health Officers give school shows. From April to October Bermondsey’s projector van rolls into position in the streets and the show is on. Humour, slapstick, and belly-laughs are used in the films. "The Tale of Two Titties"—the story of a clean and a dirty tet—might disgust the West End première, but it brings mirth to the market stalls and consolidates its point in health culture.

Congratulations to the Air Pilots’ Association

It is with great pleasure that I hear that a Parliamentary Committee will be set up to investigate the grievances, etc., in connection with the staff matters and organisation of Imperial Airways.

These tough-hearted lads have had a very poor break and as I personally helped in a small way in the formation of this Association, during the air-strike at Croydon while filming there, I am pleased to hear that their grievances are likely to be remedied. It is time that industrial dictators learned that in a democratic country they must meet to consider representations of employees’ conditions placed before them by their duly appointed representatives.

SUB-STANDARD

The A.C.T. GENERAL COUNCIL has recently reviewed the question of sub-standard work and in particular the way in which amateur cinematographers appear to have encroached on what has hitherto been regarded as the legitimate field of the technician. There is at the moment a considerable meeting of panels of experts who will be prepared for the cost of film alone to cover in sub-standard local news events, advertising shorts, and documentaries. A.C.T. has also a "panel," an unemployment figure of over two hundred technicians, many of whom are equipped and willing to undertake such work, not for the cost of film but for proper payment in return for service of professional merit, since with all due respect to the amateur it cannot be expected that he can turn out the finished article in anything approaching the quality that is the normal standard of the professional technician.

It has never been the practice of studio workers to do else than admire the keenness of the amateur clubs whilst they confine themselves to fictional subjects and indeed many clubs include A.C.T. members in their ranks. But when the amateur oversteps the boundary and attempts to embrace work of professional scope, then a protest must be made. This trespassing on cinematographic preserves is not a conscious one but rather is due to a superabundance of somewhat misplaced zeal, result-

(Continued on page 192)
Recent Publications

A Mongrel in Movieland

In his progress to stardom Scruffy speaks frankly of many subjects. He makes cracks at the many madmesses and inconsistencies of film production. "No one could accuse the film people of sanity," he says. He is puzzled by production terms. "A unit in filmland denotes a number of persons and therefore is a contradiction in terms and does not make sense. This, of course, is in accordance with the highest traditions of the industry." He discovers that everybody is the most important person in films and that everybody can produce a lot of statistics to prove it.

There are many delightful sallies. For example, assistant directors "imagine, like everybody else in films, that they are the most important people in the business and that no picture could be produced without their valuable co-operation. Their real job is to call out orders at regular intervals in a refined voice and lend tone to the whole proceedings. This gives them a sense of importance and does no harm to nobody, because nobody takes any notice."

In short, Scruffy puts the whole industry in its place and lets us know quite clearly that he is the only person in film production who really matters. We congratulate A.C.T. member, Bernard G. Browne, on discovering such a brilliant star and equally scintillating author with, of course, the able assistance of Claude Burbidge. We also commend his wisdom for disappearing on the day the book is published (Scruffy whispers it's a honeymoon and he strongly approves of the bride). Moreover, as we wish them all long life and happiness, we hope the holiday will be a long one in order to enable a leg-pulled industry, technicians, and everybody else, to recover from possible squalls which might develop, if we hadn't a sense of humour, into more than a mere "Storm in a Teacup."

G. H. ELVIN

"THE FACE ON THE CUTTING ROOM FLOOR"
By CAMERON McCABE. Gollancz. 7/6.

Two-thirds of "The Face on the Cutting Room Floor" is damn good detective story. Film technicians, however, are warned that they will have to accept a Silent Automatic Infra Camera, smooth and noiseless, capable of working in light and darkness equally well, using non-flammable reversal film which is automatically developed as soon as it has been exposed and possessing a panning and focusing device which enables it to follow people without the aid of any guiding hand.

The book goes all haywire for the last third of its length. McCabe has run off his story with a magnificent trial and built up a grand climax—and then, presumably, in his anxiety to attain originality, he adds a seventy-page epilogue which goes into long psychological explanations for the behaviour of all concerned—until we are so bored that the committing of another murder on the last page does not interest us in the least.

Despite the anti-climax, "The Face on the Cutting Room Floor" is well worth reading, even if everyone speaks in parables and nearly all the characters seem to be raving mad. Therein, perhaps, lies its charm.

RALPH BOND
LEN LYE reviews
Major Klein's "Coloured Light"

Technical Press Ltd., 30/-.

All technicians take a bow: all technicians advancing their work take a double bow. If you read this book you'll know why. It's "Why" makes the wheels of thought go round. Particularly the wheels connected with colour pleasures. Mainly treating colour as a medium of art for both creative and receptive sensory stimulation. In other words, beauty, loveliness, or any other word you have for aesthetic kick. And the technical advancements that give a greater means for its expression.

The subject matter is put down in a clear, concise statement of theory, practice, and technical outline of colour manipulations which sharpen your own thoughts about colour or create new ones. And your new thoughts may sharpen the appreciation of the work listed and done by the pioneers in creative colour and its mechanics.

We're lucky to have research workers who can not only give lucid details of their views and experiments, but also those of other workers in the same or analogous fields.

A. B. Klein has marshalled the theories and reference data of seemingly every known worker in the field of colour thought in its scientific and aesthetic aspects. He presents mature theories and puts forward interesting viewpoints on the social values and standards of painting, music, and the colour research in which he has taken a large share.

I myself am no technician and designate myself as a colour-playboy intent on my contact with reality to supply it with a mental aphrodisiac just for the sake of what happens.

The author is versed in the Western European art traditions and has kept alive his own thoughts in relation to them, which is also evidence to me that the technical knowledge outlined in the book is as advanced in content.

This is a relief to find nowadays when the external forces of reality absorb so much of our mind's virility on problems of economics, social organisation, human annihilation, liberties, and so on; so that we have hardly any mind left for creating or approaching mind gems in any aesthetic medium.

Film people who feel that eventually they will be dealing with the more subtle of the aesthetic problems in colour films will find many oblique lines of thought bearing on film presentation, such as back-projected colour in sensory movement for sets presenting dance, drama, music, and the placing of characters in colour controlled movement backgrounds.

If the book is too expensive in these days of incessant economic demands and upsets, at least it is worth having access to in the studio or general reference library, to read in between jobs, and as a preparation for a self-confident contribution to the only thing that matters finally apart from behaviour and bread and butter, namely, the subtleties of mind content invested in beauty.

(Recent Publications continued on page 188)
Technical Abstracts

Change in Projector Aperture

DIMENSIONS MORE CLOSELY APPROXIMATING THOSE OF CAMERA SUGGESTED TO PREVENT ELIMINATION OF MATERIAL

As a means of preventing the elimination of significant pictorial and dramatic material from the projected picture, the Research Council of the Academy of Motion Picture Arts and Sciences has proposed a change in the projector aperture, extending it to dimensions more closely approximating those of the camera aperture.

The present standard width, adopted in 1932, of .825 inch, would become .815; the present height of .600 would become .615.

Academy’s Objective

The proposal represents an attempt of the Academy to eradicate a condition which has become more of an evil as more of the camera aperture range has come to embrace critical material, placing important dramatic or contributory elements in the peripheral areas of the frame, which areas are now rather substantially cut off by the projector aperture. The Academy proposal follows a recommendation made by the Projection Practice Committee of the Society of Motion Picture Engineers, at that body’s convention in Hollywood last spring, also suggesting that action be taken to stop the elimination of peripheral critical material. The S.M.P.E. committee, however, proposed that critical material be confined to areas that would be photographed well within the camera aperture so that the existing standard aperture could be effectively retained.

Same Purpose

The Academy action, which, it is said, was taken without consultation with the Projection Practice Committee, has the same purpose as the recommendation of this committee, but definitely indicates the reluctance of the production community to consider any constriction of action areas.

The recommendation of the Projection Practice Committee last spring called for confinement of critical material in the frame to an area of .005 inch smaller on all sides than the dimensions of the present standard projector aperture.

By recentering the projector aperture so that it is in line with the camera aperture, the Research Council proposal would place exactly one-half of the increase in width and height on each side of the horizontal and vertical centre lines. This would result in a reduction of the vertical framing tolerance to (one half .005 minus .615 equals) .008 inch, whereas the present tolerance is .615 inch. Side tolerances are similarly reduced from .625 to .615. Such reduced tolerances, particularly the vertical ones, affecting the maintenance of the image in frame, are regarded by some persons in projection circles as highly undesirable.

It is also pointed out that with the reduction of the lateral (sidewise) tolerance, placing both camera and projector apertures on the same centre might lead, in some prints, to lateral misframing because of film shrinkage, which is said to amount occasionally to as much as two per cent. The present standard camera and projector apertures are off centre laterally precisely for the purpose of allowing for film shrinkage.

George Schütz
Motion Picture Herald

Tone-Tint Merging

The recent announcement that the Metro-Goldwyn-Mayer studio is constructing an addition to its studio laboratory to house a new department for toning and tinting release prints vindicates an opinion which many notable authorities have frequently expressed in print and otherwise for many years.

Briefly stated, that opinion is that since the coming of sound, producers have neglected a tremendous means of increasing the emotional appeal of their films in neglecting the emotional appeal of tinted and toned film.

Tinting and toning motion picture film is no new thing. In the days before the Vitaphone this technique had developed to a relatively high degree. Many of the greatest productions of the silent days owed more than a little of their emotional appeal to the aid of colour in the form of tones and tints.

At that time, however, toning and tinting were limited by the fundamental limitations imposed by the then crude technique of making conventional black-and-white prints. Control, in the sense implied by to-day’s scientific accuracy, was unknown in the developing and printing methods then used.

The toning job—the black-and-white print—is now made with a scientific accuracy that gets the best out of the negative.

Printing is done on the most modern Bell & Howell production printers, and the film is of course machine developed, while the entire process is subject to such accurate sensitometric control that any number of absolutely identical prints of any picture may be obtained.

The tinting and toning operations are carried out with the same accuracy. The work is done on machines, of course. These toning machines are essentially similar to the studio’s standard developing machines, but with the tanks rearranged to be suitable for the processes involved.

The speed of the machines is necessarily variable over an exceptionally wide range, to allow both for the various solutions which could possibly be desired, and for the necessary control.

In some respects the machines for toning are simpler than conventional developing machines. Turbulence is not required, nor is a solution circulating system. The solution is of course refreshed with metered quantities of a concentrated solution at fixed intervals. The life of the solutions seems practically indefinite.

Temperature must be very accurately controlled. It is also extremely important that all parts of the machines in contact with the solutions be chemically impervious to the various solutions, neither being affected by the solutions nor contaminating them.

These operations may be carried out at any time after development of the print, and in a lighted room. Therefore the toning machines are in a separate section of the laboratory, and the prints are developed, fixed, washed and completely dried before the toning or tinting operations.
A somewhat thin air pervades the extreme end of the book. Mr. Seldes's remarks on colour, stereoscopy, and the possible influences of television on films squeeze into these pages by a hair's breadth only. But he is sensible and sensitive on all three subjects.

His zest shapes the many facets of his subject into a trenchant whole which could repel no layman by over-technicality, while the technician will recognize with relief a writer who has brought a sense of proportion, knowledge, and accuracy, to bear on a subject which changes kaleidoscopically according to the angle from which it is approached. This is a good job of work of approaching the kaleidoscope from the point of view of the movie patron.

J.M.

TECHNICAL ABSTRACTS—(continued from p. 187)

The tone most generally used at present is a single solution uranium tone, often in combination with tints. In this connection it should be remembered that a toned image is one in which the silver image itself is coloured while the highlights remain clear, while a tinted image is one in which the silver grains are not coloured but the gelatin support carries an overall colour so that highlights and all appear coloured.

JOHN M. NICKOLES
—American Cinematographer, September, 1937.
(Continued on page 189)
Third Dimensional 16 mm

Stereoscopic motion pictures — movies in which a real illusion of the missing "third dimension" of depth is given—have received the attention of many researchers, professional and amateur. Some of their schemes have worked; others have not. But the goal of producing moving pictures which will give a scene the same roundness and depth the eye perceives continues to hold endless fascination.

One of the more recent and more successful researches into this field has been conducted by J. Kinney Moore, S.A.C. member and maker of "The Life," which won a special award for special effects camerawork in this magazine's 1936 Amateur Movie Contest.

Moore's experiments, made on 16mm. Kodachrome film, successfully capture the third dimension and combine it with natural color to produce results rarely, if ever, shown on the screen before.

The principle underlying any perception of depth, whether photographic or merely visual, is simple. Our eyes are placed side by side, approximately 2 1/2 inches apart. Each eye therefore sees the view from a slightly different angle; in effect, the right eye sees slightly "around" the right side of an object, while the left eye similarly partly around the opposite side.

In our brain, the two images are combined into one, and this two-eyed vision gives us our perception of depth and roundness. If one eye is put out—even merely closed—things appear as flat as a photograph, and one finds it almost impossible to judge depth or distance accurately.

The camera is necessarily a one-eyed instrument. It cannot, therefore, give anything but a flat one-eyed picture.

Every system of stereoscopic photography or cinemato-graphy depends on making in some fashion two separate pictures of a scene, each of which represents what one eye would see, and then showing each eye its proper picture while preventing it from seeing the other eye's view.

Moore gets his two films by coupling two Cine-Kodak Specials together. His two cameras are mounted on a special base, which he built himself. This base is hinged along its centre line, not only to allow the left-hand camera to be swung clear that the right-hand one may be loaded conveniently, but to permit the camera to be "toed in" so that both are centred on the same object—usually the most distant important object in the scene.

Each camera is driven by its own clockwork mechanism, but the two are kept in step with each other by means of a mechanical coupling. The one-picture-per-turn "trick crank" of the camera is removed. In its place is put a sprocket.

The sprockets, in turn, are both connected through a chain belt to a common shaft. Thus it is impossible for one camera to run without the other. In practice, Moore often uses but one camera's motor to drive both.

Projection is by two Ampro projectors connected through a similar chain and shaft coupling. In this case, the knobs used to turn the projector's mechanism in threading has been removed and the sprockets substituted, while the knobs have been replaced at the end of the coupling shaft. In use, both projector motors are employed for driving.

Each projector is fitted with a standard Eastman Pola screen light polarising filter. The two polarisers are "crossed" or placed with their polarising planes at 90 degrees to each other.

The house is given spectacles, the lens of which are also crossed polar screens. Thus each eye can see only the image projected by the projector whose polariser is parallel to the polarising lens in front of that eye, and cannot see the other image projected through the crossed polariser.

—American Cinematographer, September, 1937.

Report of the Sub-Committee on Perforation Standards

The Sub-Committee has investigated the possibility of adopting the S.M.P.E. standard perforation for negative film, and has come to the conclusion that various factors, especially the stock of background films, makes it impossible to use the S.M.P.E. standard perforation universally.

The Committee now proposes that the rectangular perforation proposed by Howell and Dubray in 1932 be adopted as the standard perforation for both negative and positive. This perforation would operate satisfactorily on all apparatus designed for the Bell & Howell perforation, and should give little or no trouble on apparatus designed for the S.M.P.E. standard perforation.


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Phone: Gerrard 2366
Panning Round the Globe

Now in these columns small I wish you a Merry Christmas, and just like Henry Hall I say; "Here's to the next time" (that fooled the Editors!) This is the page that brings good cheer to millions of hearts; for further particulars see "Wanted" columns.

Pog Surveys 1937

JANUARY........Cold and wet waiting in the queue.
FEBRUARY....Still cold and wet by the Exchange.
MARCH.........Nippy by the Labour Bureau.
APRIL.........One day's work (Boat Race).
MAY.........One more day's work (Coronation Day).
JUNE.........Another day's work (Derby Day).
JULY.........Lovely and warm by the Exchange.
AUGUST.......Am getting quite sunburnt.
SEPTEMBER...Walk round the studios for an airing.
OCTOBER...Leaves are falling fast—so are my arches.
NOVEMBER...Fog arrives—feeling of satisfaction that it might stop work somewhere.
DECEMBER...Ponds and credits completely frozen.

And with these words we say farewell to the sleeping isles of Movieland.

Pog Casts His Eye Over The World

ITALY...............Nero having a final fiddle.
GERMANY.............Finance so sticky they are now using 8 mm. for all films.
AMERICA.............I can categorically state that The Great Train Robbery has now been finished and will be seen in the near future.
AUSTRALIA...........The sun is shining.
MANCHESTER.........Still raining.
ABERDEEN...........Outlook unsettled.
FURTHER OUTLOOK...There will be definitely more weather than of late.

Believe It! So What?

Bricklayers enter the cutting rooms! This is something really new. We have heard of Tripe Butchers, but Bricklayers is extremely novel. We hope they gave them some straw.

In view of this, Cutters are contemplating entering other industries. Knitting would be appropriate for some of our Montage Experts.

'I am the man they pay to keep quiet

Seasonal Piece

It was Christmas Eve in the Poor House,
Everything was neat and tidy.
The technicians were eating their Hot X Buns.
Blimy! It's Good Friday.

Bricklayers Invade the Cutting Room

"Technicians Wanted"

(Copy must reach Pog three days before St. Tibb's Eve if it is to be included in this Column)

FOR SALE. One cameraman's viewing glass . . . hardly used. Or would exchange for float of Brandy Sauce.
WANTED. One Native to clap . . . good studio. Wages, two bowls of rice and loin-cloth. British Birth Cert. and Public School Education essential. Apply.—Duckshovsky, Blenheim Studios.
FOR SALE. Full set of Exterior Filters; or would exchange for umbrella and barometer.
LOST. One Ist Assistant. Last seen taping an Infinity shot; hasn't been seen since. Finder please return. Adequate reward. Apply any Police Station.
MORTGAGE. Do you collect Mortgages? If so, we can supply you plenty. All we want is your cash. We ask no questions.
Poet's Corner

Producers We Beseech You (or A New Year Wish)

A.C.T. will tell you why
You must join the F.B.I.
Tumults then will be abated
For you'll all be Federated.
George Elvin the board can sit on
For he really is a Briton.
Things are bad and you must cry
At the British Industry.
Once our Britons ruled the waves.
Must we Britons now be slaves?
There has been a lot of stalling.
Hark your "Matterland" is calling.
Tempus Fugit, so 'tis said,
Very soon you'll all be dead.
So come on, you really must.
Boys be British and (or) be Bust!

Keep It Dark

Cassandra, of the "Daily Mirror," is thanked for the following:-

"I hope that some Americans' understanding of the British mind is a little better than that of Louis B. Mayer, the Hollywood film executive, who recently said: 'Once I had the honour of parading before his late Majesty King George V in a suit of armour, when he visited my home town in Canada—so I think I can say I understand Britishers!'."

Newssreel Swindle Sheet

In Bradford she was Mabel,
She was Marjorie in Perth.
In Plymouth she was Phoebe,
The sweetest thing on earth.
In London she was Doris,
The Brightest of the bunch.
But down in his expenses
She was Petrol, Oil and Lunch.

Intelligence Test For All

Who's been at my Enn's?
What is a Film Star? And why?
Remember the Law of Libel, boys.

Who trumped the British Ace cameraman?
What is the Shape of Things to Come?

Why could no Man Work Miracles with our trade?
Why have stars stopped marrying cameramen?
What is a "non-discerning Patron"?

What does a Receiver receive (a) officially (b) unofficially?

Who's going to wash his hands of the Film Industry?
And how much soup is he going to use? More B.O.?

Why have Stars stopped marrying CAMERAMEN?

Final Notice

Seeing as how it's Xmas, I must now away to fill some of the little one's stockings! They will have their little bit of fun. Bung ho! Remember me to the folks.

POG

SUB-STANDARD—(continued from p. 184)

...ing in a situation which, although it has its awkward points, is by no means unsolvable.

The Sub-standard Committee of the Association has prepared a special list of technicians of all departments who are prepared to shoot on the smaller stocks, and draws attention to the facts that, firstly, a large number of normal documentaries are already produced on sub-standard film, and secondly, that the present policy of the General Council on this question has by no stretch of imagination been changed to meet this new intensified amateur activity, but has never in any shape or form countenanced the "employment" of such labour.

The present situation has probably been brought about in the first place largely by producing firms who turned down these smaller subjects on account of the little profit involved. Local firms were therefore forced to find other ways of getting their work done and the individual technicians were never approached. In future, however, through the instrumentality of the Sub-standard Committee, many likely firms will be contacted and it will be suggested that next time a film is wanted the A.C.T. should supply the crew. With the increased use of the cinema in the schools and by utility and other companies for demonstration purposes it will be regrettable if this side of the industry does not remain under professional aegis.

For technicians who wish to increase their knowledge of sub-standard technique, no better course is open than to join the Royal Photographic Society, whose keen interest is open to all those interested in cinematography. The response from the trade to the recent R.P.S. Cinematographic Competition was lamentably low and it is to be hoped that in the coming New Year A.C.T. members will enrol in the Society and qualify under its new rulings (see "The Cine-Technician," Vol. II, p. 80), for Associate and Fellowship. 1938 will also see the transference of the Association from the Central Association of Photographic Societies to the Federation of Cinematographic Societies with regard to its membership of the Photographic Alliance, and so our differences with the amateurs must be quickly regulated in order that our entry into the newer body need not be marred by any discordant features.

Members are therefore urgently requested to bring to the Council's notice any anomalies that exist in this matter and to assist the Sub-standard Committee with suggestions and by seeing that they themselves do not engage in any activities subversive to the Association's interests.

T. S. LYNDON-HAYNES, A.R.P.S.
THEY TALK COLOUR.

ALEXANDER KORDA, Chairman of London Films, proclaims faith in colour

The introduction of colour into films was as natural and logical an improvement as the introduction of sound, and I think we can expect as rapid an advance in technique as attended the introduction of sound.

My own faith in colour cinematography is best evinced by the fact that my three latest pictures are Technicolor productions—"The Divorce of Lady X", "The Drum", and "Over the Moon".

Unfortunately, when sound arrived, English studios were taken naurases, and it was many months before they could change over. I was anxious that my company, at least, should be fully prepared, should the public approve colour in films. We now know that colour has undoubtedly come to stay, and its greatest triumph is that it is no longer remarkable.

With the first colour film, the critics were obsessed with colour, and devoted much of their space to commenting on whether reds predominated or the sky was natural. To-day they remark that it was surprising that they had almost forgotten that a film was in colour.

There is no doubt that colour brings an increased entertainment value, particularly to women, who are the larger percentage of the cinema-going audiences.

In "The Divorce of Lady X," the value of the money spent on creating and presenting new fashions is fully seen on the screen, and not, as it would be, were it in black and white, minus the colour combinations which make so much of a creative dress designer's art.

These revolutionary improvements in the film industry must come slowly, accompanied as they are by technical difficulties. People have not realised that one of the main difficulties has been making copies. I think it has been sufficiently proved that the subtractive process is at present nearest the solution of the problem, and the progress of the various companies who have adopted this process confirms this.

In my opinion, a great deal of nonsense is talked about eye fatigue. Good colour, such as we have recently seen in widely distributed pictures, has not affected the eye. There is no doubt that once the prejudice against colour films has been overcome, in the same way as the prejudice against talking pictures was overcome, colour will be universally accepted.

The time will come when the risk of bad copies and uneven photographic printing will disappear. I think even that the various adjustments in make-up and departures from real life appearance on the stage will be ironed out, and we shall have photographic colour without the assistance of lamps and colour mediums, and curious looking make-up. There will be transmission to the screen of natural colour, which is as natural to the eye as on the screen.

I feel that not a long time will pass before black and white pictures will be a thing of the past.

C.E.A. President, C. P. METCALFE, gives Exhibitor's view

Colour lost its novelty value long ago and in recent times has proved anything but an unmixed blessing to exhibitors who failed to realise that it had done so. They allowed themselves not only to book films which, if they had been offered as ordinary black-and-white subjects, would have been rejected as unsuitable, but they booked them at enhanced prices because they were in colour, and later found to their dismay that in the minds of their patrons, colour failed entirely to compensate for the films' deficiency in other respects.

That colour properly applied to suitable subjects can enrich the films, and also the screens on which they are
projected, is beyond doubt, but colour for colour’s sake is useless and worse than useless.

Applied as it often has been it mars a good film, because instead of being used to give a sense of greater reality to the subject of the film it has been applied in such a way as to call attention to itself.

Just as artists should lose their personality in the personalities of their characters they represent, and as music should be used to create a background or atmosphere for the film, so colour should be used to emphasise and give additional reality and additional beauty—it must not distract attention. Audiences should be almost unaware of its presence.

So long as colour means only vivid red, blue, green and orange, and so long as it dominates the whole scene, and so long as subjects are chosen because they are suitable for adaptation to the colour medium, so long will it be valued, or almost so, in the eyes of the audiences, and therefore also in the eyes of exhibitors. Once studios learn to apply it artistically, and realise the proper place for and the proper use of colour, and subdue some of its violent contrasts and vivid hues—apply it more as tinting and toning, well applied in the past to form a pleasant background, it will be recognised as a valuable subsidiary and applauded as a further advance and refinement of the cinematic art.

ARTHUR DENT, Managing Director of Wardour Films, opposes 100 per cent colour programmes

The bland geniality of Arthur Dent is difficult to resist. He has the power of taking you into his confidence and then surprising you by saying: "You can quote me as saying so." Accordingly I will quote him—and I'll surprise you.

"What can I say about colour films that hasn't been said already? The novelty, the embellishment, the added attraction? Maybe. I don't quarrel with that. But I will go on record as saying that from the public's point of view I don't honestly believe there is an iota of difference between the colour film of to-day and the colour film of twenty years ago. Technical advance—yes. But do you remember the old Pathé colour pictures, where they used to stencil the negatives by a laborious hand process? Well, I challenge anybody to prove that by the text of popular appeal the colour film to-day is anywhere ahead of that standard."

He talked of the possible eye-strain, but didn't make a great point of it. "I feel it myself," he said, "more when I come out of the cinema than during the run of the film. My eyes are tired. The black and white film concentrates your attention on the action. The cameraman lights it to show you what the director wants you to see, and you watch the play of emotions, whatever they may be, because there is nothing to distract your attention. Not so with colour. With the movement of the action there is the changing of the dispositions of the colours, and don't tell me you aren't supposed to be watching the colours! If the producer didn't want you to see the colour he'd make it in black and white—it would cost him less anyway.

"They say the time is coming when all films will be in colour. They've said that for a long time. I'm afraid—no. I hope—that they'll say it for a long time yet. The public pays to hear a story, to see the progress of the drama in the changing expressions on the faces of the artistes. I have still to see a colour picture which can bring out that sense of the dramatic in the face as well as it can be done in monochrome. Colour at the moment takes something away. The face is losing in vitality. Although occasional pictures—particularly those with spectacle—will have considerable appeal, I am of the opinion that, if the time comes when all pictures will be in colour, it will be to the detriment of the industry. These remarks, of course, refer to the full length feature films and not to the short. It is possible that all cartoon films might soon be in colour."

ADRIAN BRUNEL, director, scenarist and author, holds colour is England's greatest opportunity

Any opinion I may have on colour cinematography can only be academic, for I see little prospect of our being able to afford this luxury in the British film producing of the future. By the time colour is the rule and not the exception, most of us who are now invited to discuss the question, will be out of the business.

After this prelude of pessimism, I will try and assume a courageous and patriotic pose and declare that colour is England's great opportunity. It might well be if we were to call in the aid of our best painters and scenic artists, for at least we have a finer selection to draw upon than they have in America.

The evidence and lack of understanding of the dramatic application of colour in most colour films to date is no argument against colour in cinematography. So far the superior dramatic treatment of light and shade in black and white photography has only shown us the faults of colour. There have been notable exceptions in colour films, such as "Cucaracha," some advertising shorts, often an exterior travel film or a Walt Disney, and occasional sequences (usually exterior) in films such as "Tarama.

In brief, my recommendations are to work in cooperation with painters and to divide colour films into two classes—quiet and colourful. The quiet colour films should be based on our present technique of black and white—monochrome in tendency with an occasional dramatic break-away to a spot of high colour—and the colourful films could be in the manner of a stage revue by Messel or a painting by a modern Spanish artist.

OSCAR DEUTSCH, Odeon circuit chief, talks on colour films of the future

The question of colour cinematography, which has occupied the attention of scientists and technicians the whole world over for so long, is one in which I am deeply interested.

From the entertainment point of view, results which have been obtained in the past have, in the main, been reasonably attractive, and in some instances outstandingly so, but the extensive research which has been going on, particularly during the last twelve months, has effected an improvement which gives heart to those like myself who have great confidence in this new medium for the enhancement of cinematograph entertainment.

Studio technique and camera-craft have combined to from an art, which, in these modern days, gives us dramatic, musical and pictorial entertainment of such excellence,
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Quotations also given for Camera work, per foot or per day.

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that it has become a means of expression of some of the finest artists and craftsmen in the world.

This art, which has grown up with us during the last twenty years to its present very high standard, already affords tremendous scope for expression, but I am convinced, from what I have seen of colour photography, that it will not be a very long time now before the scientists and technicians have achieved perfection in the reproduction of the harmonious colourings of that great artist "Dame Nature," thus affording the medium of colour expression to enhance the aesthetic enjoyment.

However, I do feel that full appreciation of colour photography will not come until the technique of stereoscopy, which is already making considerable headway, reaches a stage when it may be placed before the public.

The long hours of patient labour on the part of research workers, who will assuredly reach their goal, will be more than repaid by the increased patronage of those members of the general public whose sole appreciation is in the subtleties of colour expression.

**Humphrey Jennings, Production Unit Director, Dufay-Chromex, interviewed, declares for special colour stories**

Humphrey Jennings had a lot to say about colour when interviewed by a "Journal" writer. In his opinion Technicolor and Dufay-Chromex are away ahead of the field and will continue to lead until such time as Kodachrome or some similar system has devised a method of making prints.

With Technicolor, a special camera is needed, plus three negatives, three positives and a final print. The result is very expensive but very beautiful. Jennings instanced "A Star is Born" as a brilliant example of Technicolor perfection. The requirements of Dufay-Chromex, he claimed, are much simpler and less costly. The negative can be loaded into any camera, and any competent cameraman can shoot, without requiring any special training. The negative is developed in a way almost identical to black and white, and rushes sent in one day can be seen the next.

Technicolor, added Jennings, given first-class laboratory service, is a splendid vehicle for studio pictures. But Dufay is more adaptable. Using an ordinary Sinclair camera they had shot in colour from an aeroplane 5,000 feet up, and they were now shooting interiors, with ares running off a generator, in small rooms on location.

Jennings, who for some time worked with the G.P.O. Film Unit as a documentary director, claims that Dufay-Chromex is the ideal system for documentary work. The speed of their negative allows them to shoot exteriors in poor light. There is also a greater mobility due to their ability to use ordinary cameras.

Jennings believes that the use of colour will compel producers more and more to use natural locations and to break away from studio conventions. "Colour," he said, "has a horrible way of showing up the texture of faces and sets, so that the studio tricks of special make-up, plaster sets and painted artificial backgrounds are emphasised by all colour systems. I see no reason why realistic feature pictures should not to a great extent be shot on location with natural backgrounds. Hollywood is tending more and more to take semi-documentary themes as backgrounds for their stories." He instanced "Wells Fargo," "Bengal Lancer," "Florida Special."

"This tendency should be greatly encouraged by colour. Suppose a film with a London setting requires a scene in an office overlooking Trafalgar Square—there is no earthly reason why it should not be shot in an actual office in Trafalgar Square. The results in colour will be far more realistic than if the set is built in a studio, with a painted background."

"Colour," Jennings went on, "will divide very sharply stories which are frankly hokum from stories that are supposed to bear some relation to contemporary life. If it is to be hokum, let it be hokum—and colour will play its part. It intended to be realistic, colour can now produce a new realism that is at the service of the story department."

"Of course, the sound department will probably have their fits, but they have had so many fits that another won't hurt them. In any case, the camera department will now have its own back on sound for the indignities they suffered in the early days of talkies."

"In the future," he concluded, "I believe that colour film stories will have to be constructed far more in terms of the locations than has been the practice with black and white films. The story department should be sent, with the director, to the locations before the script is written. If colour can bring a greater realism, not only to the appearances, but to the fundamentals of films it will have performed a notable service."

**News before colour," says F. Watts, Pathé Production Chief, in an interview**

Mr. Watts' views were crystal clear. He had obviously thought over the subject a lot. He tells me that his company have experimented with the use of colour for newsreel work but not to any large extent.

"If it is true to say that in the case of the ordinary fiction film, the story is the main essential, the same is doubly true of news. Before we could use colour throughout all our newsreels we should have to completely re-organise our system. All cameras would have to be adapted and all cameramen would have to use the same stock. I don't mean in England alone, but all our cameramen throughout the world. To me, colour is like the cake after the bread and butter. It is something extra—something special. And you don't want too much of it. In the average housepeople do not go in for a whole variety of bright and outstanding colours. Why is it that many people have wall decorations in the form of etchings and woodcuts in plain black and white? Perhaps the answer is that they are not restful. And the only way in which colour could become of general use in newsreel work to the exclusion of black and white depends on three things:

1. It must be cheap.
2. It must be efficient.
3. It must be quick in processing.

"The three methods are important. We depend to a large extent on sunlight. At the moment, if the weather is dull, you certainly get a more effective result in black and white than you do in colour, which needs more sunlight. Admitted, certain subjects do look more attractive in colour—the Derby, the Coronation and so forth. But supposing an important item of news turns up—am I to reject it just because the weather is too dull for my colour camera? That is surely a breach of faith with the public. I am not going to sacrifice news value just for the sake of colour."
When the expected colour was refused to him, he smiled. "I will tell you in advance that whatever I say on colour films someone will boil it all down to one of the pigeon-holed variety of remarks—'The colour film was almost perfect'—or 'the colour film was only in its infancy' etc., etc. My own view, as a processor of the film, is that the three-colour method is as near to the perfect theoretical method of obtaining colour on the screen as is possible with a transparent medium. I agree that five, six or more colour processes might be useful in printing on paper, but then you must realise the difference between colour obtained by transmitted light and colour obtained by reflected light.

"Eye-strain? Largely imagination. If there is any such strain, it is perhaps due to the fact that the picture is projected in a darkened room. In the ordinary way we see nearly all our impressions of colour by fairly strong sunlight or fairly strong artificial light, and the eye adjusts itself to the amount of light present. The amount of light being reflected or transmitted from all around the front of the eye, the iris of the eye is consequently contracted. But in the theatre the large mass of the hall is in complete darkness and only a small proportion of the effective visible space gives any stimulus to the eye, with the result that the iris is very wide open. So if you take a scene in broad sunlight, and on the transparency obtain anything like the real colour value of that scene, it does not necessarily appear so after being projected.

"Concerning pictures that have already appeared in colour (I specify no particular colour system), I feel that the public must definitely be very conscious of the colours, not because the colours are particularly harsh or glaring, or sore upon the eye, but because the colour is treated as colour. They are coloured pictures, very often giving the effect that you get in certain types of studio portraits, which are made by a black and white print tinted or crayoned.

"A certain amount of eye strain might be due to the fairly rapid succession of different tone colours in the normal process of cutting or editing. In the case of the ordinary black and white picture, the eye is taken up with the action going on on the screen, and as all the tones are black and white the general impression on the eye is grey, and when we cut from one shot to another we simply cut from one grey to another, maybe perhaps of slightly different densities, but certainly not enough to disturb the eye. In the cutting of a colour picture, again the action takes up most of the interest, and a shot of any predominant colour would have to remain for a very long time on the screen before it would give rise to any actual disturbing after-image. True, the complementary colours can be used to take away the after image, but it is not entirely necessary. Very seldom does a shot remain long enough to give rise to these disturbances.

"It is only because we have become so used to the black and white film that we feel it is perhaps more natural than a film in colour. But in actual fact can anything be more unnatural than a film in black and white? When we see Greta Garbo's lips on the screen, they are black, but we have become used to a process of translation; so that even when we see them we know they are red. When we see Constance Bennett's hair, in actual effect it is grey on the screen, but we say almost automatically—'what beautiful ash-blond hair.' We translate them, because we have become used to them, into their appropriate actual colour. The difference in the colour film is that it obviates this necessity for translation.

"And the studio personnel? Well, I refuse to believe that any great advantage can be obtained from the use of so-called 'colour experts.' On the contrary, the colour expert as such would be more of a hindrance than a help; you remember the 'sound experts' not so long ago, and you remember that it was only when the sound expert was removed and the studio personnel began to make films in their own particular 'film' way that the film was released from the shackles of sound. Much the same is true of colour, although more responsibility will devolve upon the director and the art director. The director cannot be just anybody who has an expert knowledge of colour, he must have a 'feeling for colour.' It will mean a closer collaboration between the director, the art director and the cutter during the shooting, but beyond that I see nothing which would prevent the people who make black and white pictures making perfectly successful colour pictures.

The only final proof of the success of colour pictures will be when the public (who pays the piper) is not aware of colour pictures as such."

JOE ROCK, Managing Director, Joe Rock Productions, believes in colour.

Nothing I can say about colour can be of any value to improve any of the systems in existence to-day. However, I, personally, am a great believer in colour, and in the future of colour, having had experience directly and indirectly in financing, producing and exploiting various colour systems.

I was sent to the Far East in 1931, by the Multi-Colour Company, to encourage the production of colour pictures, and especially to establish laboratories throughout the Far Eastern countries. The liquidation of Multi-Colour, and the Sino-Japanese war in Shanghai put an end to any colour schemes in the Far East.

When our new studios were planned, great consideration was given to the production of colour pictures. We therefore went to great expense to install Mole Richardson High Intensity Arcs, which makes us one of the few studios in England 100% ready for colour pictures. We have had very fine results with Technicolor and Duag Colour.

It is my opinion that if colour was intelligently handled in future production, the black and white film would eventually pass right out of existence. The laboratories must be absolutely 100% perfect with their technical work, at all times, otherwise colour will lapse back as in the years following the great outburst of colour, soon after sound was introduced.
GEORGE PEARSON, doyen of directors, states that colour is the saving of shorts

The film in natural colour is as inevitable as to-morrow’s dawn. The history of the fight by the colour experts to perfect their varying systems, from the old days of Kinemacolour to the present days of Technicolour and Dufay-Colour is a magnificent record of inventive effort.

What the public loudly demands, the industry must supply; none can deny the demand is increasing in persistence. When it becomes insistent also, the film without colour will die as surely as the silent film.

Inventive genius will overcome the commonly expressed objection that the colours now are often too garish; our Northern eyes are accustomed to the kindly veil of atmosphere that softens tint to tone. That will come, maybe through further experiment with dyes or perhaps by some screen device.

With its coming I think there will be another God-given opportunity to the British industry similar to the lost opportunity when speech came to the screen.

I refer to the short-film, for there is amazing material, entirely neglected now, for short subjects of rare entertainment value, so novel and so purely British in character, fictional and otherwise, crying for colour to enhance their appeal, that Britain might well lead the world in the coloured-short market if she would but seize the moment.

I think that the short film will return again, via colour, to the screen and will become as inherent and entertaining a part of the programme as in the early days of the industry.

British film producer, SINCLAIR HILL, calls for discretion in colour

It seems to me abundantly clear that the popularity of colour still depends largely on the discretion with which it is used. The present tendency to exaggeration in settings and costume merely causes eye-strain and a vague consciousness of bad taste as the main audience reaction.

Colour, in most pictures, should surely be kept very severely in its place, and do little more than provide an attractive relief to the more or less subdued half-tones of our normal surroundings.

One of the most effective colour pictures I have seen (Dufay-Chromex—a British system incidentally) had little or no colour in it at times, since the subject—the china clay industry in Cornwall—lies in more or less black and white setting—with occasional trees, or coloured walls, ships’ sails, etc., as highlights standing out in striking contrast to the picturesque drabness of the rest of the scene.

In costume subjects, the use of pastel and delicate hues generally in materials and backgrounds, discreetly blended and softly harmonising, will bring to the screen a fresh sense of beauty that seems to have eluded those who have had the opportunity to experiment with colour so far.

In conclusion, the stereoscopic value of colour cinematography is already most clearly to be observed, and here again is a fresh opportunity for our lighting experts to study and develop this important improvement—that is, as soon as the prices for stock and processing can be brought down to a level within the means of the commercial producer.
Managing Director S. W. SMITH, of British Lion, tells our interviewer that colour is not box-office.

S.W. wasted no words. He got down to his statement of opinion without any preliminary sparring.

"No, Sir. I'm not going to say whether or not I like colour films in preference to black and white. My main concern is not with externals of the picture, but with the 'guts' of it—the story—the 99½% of its entertainment value. The old ½% . . . . . . . . ? Did you ever hear of a film that had a bad story and was saved from being a flop because it was in colour? I'll bet you didn't! And if you stay here all night telling me that the public goes to see colour as such I still wouldn't believe you. They go to see and hear a story well told. True, a year or two ago good colour had a novelty value, but novelty value can't last. Sound was a revelation—colour is only part of that told ½%. Take 'A Star is Born'—the colour is there, but perhaps it was good because the public were not so conscious of it. It would still have been a good picture in black and white.

"Colour is like getting your chocolates wrapped in silver paper—do they taste any better?

"As for colour in British production—let us be reasonable about it. The British producer, making a film to sell in Britain, might spend £20,000 to £50,000 perhaps to get back just a working profit. He cannot spend much more, and at that he must concentrate on what the public wants as its main ingredient—the story, the entertainment, the 99½%. Colour films are dearer to produce. The extra cost, say £5,000 to £10,000, necessary to make the same quality film in colour, might spell just the difference between commercial success and commercial failure. We must work—and hard—for our market first. When we've got that, come back again and ask me what I think of colour films."

Paramount Director, J. C. GRAHAM, says:

If the story is poor, all the colour in the world won't help it. If the story has the right locale, then definitely colour is a decided improvement.

MAKE-UP FOR COLOUR

by H. E. HOLLEY, Hon. Sec., British Make-up Artists Association

The introduction of colour made the make-up man quickly realise that it would be more difficult to correct certain features, such as dewlap, large jawbones and baggage, than is the case in black-and-white photography, in which colour to a great extent is used to "lose" such superfluity. Drastic changes and a revolution of ideas were also vital for character work, and conferences (a word so beloved by film executives) would have to take place with the camera, make-up and art departments.

Having been associated with many experimental colour systems, some good, others indifferent, the majority fantastic, it is difficult to say that any one colour system is the best. Technicolour is the best-known, of course, for the reason that America is doing most of the colour productions, but other colour processes on the market have quite a good claim to recognition.

Although good materials are, of course, essential, the application is of the greatest importance. The era of the Dutch doll and the pink-cheeked maie is over. The present aim is naturalness combined with the splendid effects already obtained on black-and-white film.

I will endeavour to explain the procedure of a simple straight colour make-up for a woman.

A foundation of natural flesh colour (not too pink) is applied to all exposed parts, and care has to be taken to see that the texture of the skin is visible, provided, of course, the skin is good; otherwise a "travel" may have to be used. For shading the eyelids, a misty effect is desirable, and is obtained with the slightest touch of sky blue, grey, light green, or light brown. Hard lining of the eyes, unless definitely needed, is taboo. To enlarge the eyes, it is advisable to shade under the lower lashes with a very soft brown or grey paint; to extend them, a soft self-coloured pencil or paint is used. White or very light paint is applied along the ridge of the lower lid "to open the eye," thus adding to the sclerotic. The "check bloom" must be applied very sparingly, and care is necessary to see that it is well blended into the foundation colour, and that it is fated away right to the lower lashes. With eyebrows, too, care has to be taken not to overdo it. Whenever possible the natural outline is used, but this feature can determine whether the face be dropped, lifted or broadened. In lengthening eyebrows, the same colour must, of course, be used throughout, and tidiness always maintained. The lips, in conjunction with other features, must balance and give tone to the whole effect. Rosebud or exaggerated bow lips are not advisable.

The whole work is now covered with a fine flesh-coloured powder, sufficient to give a mat finish. Very little mascara or "spit black" is used, and practically none at all on the lower lashes. Superfine hair, and more delicately made false lashes in various shades have superseded the old heavy thick black types, and are most essential for colour photography.

Space does not permit the explanation of such details as eye colouration, high and low lighting, the "parading" of good points and the suppression of "weak" ones. I hope, however, that this article will give some idea of the new problems raised by colour, and the way in which make-up men are tackling them.

FIFTH ANNUAL GENERAL MEETING

A.C.T.'s Fifth Annual General Meeting will be held on Sunday, May 8th, 1938, at Anderson's Hotel, Fleet Street, E.C.4, commencing at 2.30 p.m. Every member is entitled to attend; in fact it is their duty to attend. Please note the date now in order to avoid any possibility of it being overlooked, particularly as the conference is to be visited and addressed by Mr. H. H. Elvin, President of the Trades Union Congress, an honour which the current President is seldom able to confer upon affiliated societies.
Commonsense for Colour Films.

Reprinted from "The International Photographer"

One of the most avidly discussed problems in the motion picture industry to-day is the future of coloured motion pictures and their effect upon the industry. Several times within the past few years it has seemed that the colour was about to sweep the industry, but at no time has it seemed more likely than at present.

There are at least two reasons why this is particularly true. One is that colour photography is finally reaching a degree of perfection commensurate with commercial operations, and the second is that colour is the white hope of the picture business in competing with and delaying the general advent of television. Black and white television is an actuality, and may seriously compete in the very near future with black and white pictures, while colour television is still not realised and will probably require many years to perfect.

Throughout all of the discussion of colour, an analogy between colour and sound is repeatedly drawn which is false in many of its precepts, and which can lead to many incorrect conclusions. For example, both the trade and news press have repeatedly carried publicity stories fostering the belief that the advent of colour will mark the doom of many reigning favourites in much the same manner as sound pictures displaced many of the silent stars. The fallacy of the analogy should be at once apparent.

Of course, some have said that colour is hypercritical of bad features; that shadows are accentuated; that make-up cannot conceal bad photographic features as effectively from the colour camera as from the old black and white film.

Bleached or dyed hair, they say, cannot be photographed, etc., ad infinitum. Most of these assertions are far-fetched and ridiculous.

Why should a colour process be tolerated which photographs kindly only blonde beauty, and will not pleasingly reproduce the brunette and titian? It is a physiological fact that the pigmentation of the auburn type differs markedly from the pigmentation of the blonde.

It is just as true that the pigmentation of the evergreen forest differs fundamentally from the pigmentation of the flowers of the Alpine meadow nestled in its shadow; yet the colour process which finally meets the industry's approval must photograph one as well as the other. Should not this same film and process reproduce the beauties of human subjects without preference for some particular coloration; granted, of course, that seldom do we encounter in humanity that complete flawlessness which delights us in simpler nature.

However, here again the make-up which has come so many times to our aid in black and white work again rises to the rescue in colour work, with the distinction that in the colour photography of to-morrow, correction of physiognomic defects will be even easier to achieve than in the older monotone picture.

The analogy between sound and colour has been likewise extended as the basis for widespread belief that the general advent of colour into the motion picture industry will result in another major upheaval of the technical organisations of the studios similar to that of ten years ago. However, a close study of the development toward commercial colour motion picture photography leads us to believe that development of colour motion pictures is proceeding along different lines and that the transition will be practically painless. The factors which contribute to this opinion are many.

In the early days of sound only a handful of men in Hollywood had the remotest idea of the principles of sound. Radio itself had scarcely emerged from the crystal-detector stage and men trained in the intricacies of vacuum tube technique were few indeed. Yet from this small group as a nucleus, the industry was in a few months, able to swing into practically one hundred per cent, sound production schedules.

Colour, on the other hand, is primarily photographic, and in addition to the thousands of experienced photographic black and white technicians the gradual development of colour pictures has resulted in a situation where there are dozens of capable cameramen who have had production experience in colour, some on several different processes, and probably several hundred laboratory technicians who have operated in colour laboratories and who will, therefore, more than fill the needs of the colour era. Compare that early sound situation, in which there were only two companies with megare equipment immediately available, with the present colour set-up in Hollywood.

Colour has been a particularly sore spot to many producers because of the concomitant evils of colour experts, cameramen and directors, whose mysterious abracadabras have been an apparently unavoidable complication of colour production, yet it is difficult to rationally see just why this should be necessarily true. Many detractors to the contrary, top-notch cameramen and directors of black-and-white pictures to-day are superlative artists, and probably more so than many of their contemporary colour specialists who do not understand the medium of motion pictures. Does it not seem strange that these recognised black-and-white artists apparently can think only in monotone, or is not the fact more likely that these eminently experienced experts can compose, light, and photograph a scene for action, set, and colour, just as efficiently as the specialised talent?' Finally, then, does it not devolve upon the colour laboratory to give the industry colour photography which will reproduce upon the screen the visual effect of the original, sans all tricks, sans all special "effect" lighting?
Summary of Colour Cinematography
By Dr. F. W. PETERSEN, Agfa's Colour Expert.

According to the Helmholtz theory of colour, the visible region of the spectrum may be divided into the three primary colours—red, green and blue. Suitable admixture of these three primaries yielding at will practically any desired colour hue or neutral grey tone. Thus, by using a photographic process based on these colours, a natural colour reproduction may be obtained.

A considerable number of different hues may be produced by using two primary colours, which must be complements of a correct neutral grey scale is to be obtained, but the use of two colours can never give a truly natural reproduction of colour. The restriction of the colour process to two primary colours, though, reduces the technical and economic difficulties in film work so considerably that in spite of the faulty reproduction of colours, such two-colour processes are frequently used for cinematography, while the full three-colour processes, which have been used for many years in "still" photographic work, and for 16 m.m. sub-standard films, are now only just ready to be applied to the 35 mm. film.

The following review of processes will be limited to the confines of cinematography, and all comments refer to three-colour processes. The problems of colour cinematography can be reduced to the following three fundamental questions:

1. How are the multivarious hues of nature to be recorded in terms of three primary colours? (Taking or recording process).
2. How are these three records to be assembled into a suitable coloured positive for projection? (Projection or reproduction process).
3. What about the possibility of duplicating the primary records?

The Recording Process in the Camera

The simultaneous production of three colour separation records may be arranged in a number of ways, namely:

1. The beam-splitter method, which, it must be admitted, has not yet developed to a point where it works perfectly in practice.
2. The multi-layer method by using emulsions which are selectively sensitised. Examples are the Agfa Bipack film (for two colours), and the 16 mm. three-colour processes of Agfacolour and Kodachrome. In the last two cases, the three emulsions are coated over one another and cannot be separated mechanically, as they form a single film.
3. The Technicolour method which combines the beam-splitter and bi-pack principles.
4. The lenticular film process, first invented by Berthon-Keller-Dorian, and developed commercially by Agfa (Agfacolour), Kodak (Kodacolor), and Siemens (Opticolour).
5. The Agfa lenticulated bipack process, combining the principles of lenticulation and bipack.

A number of other possible combinations need not concern us here.

1.—Beam-Splitter Processes

The light passing through the lens of the camera is split up by a special optical system of prisms or mirrors into three sections, a filter being placed in the path of each beam which transmits one of the primary colours. This filtered beam of light is then recorded in the usual way on a panchromatic film, i.e., one sensitive to all colours. A record of the red primary is obtained behind the red filter, and blue and green records behind the filters transmitting these colours. The optical and mechanical problems involved in the construction of a successful beam-splitter camera for three-colour records particularly so far as time or special parallax is concerned have not yet been satisfactorily solved so far as the cinema is concerned. Two-colour beam-splitters devices for two-colour processes are much more satisfactory (cf. the Busch beam-splitter), and a device of this type is used in the Technicolour camera.

2.—Multi-layer and Bipack Method

The separation of the colours in these processes is produced by using selectively sensitised emulsions, which may be separated by filter layers. The various emulsions and filter layers may either be coated one over the other on the film base, thus forming a solid whole which one may term a "monopack," or else they may be coated on separate film bases, and placed together with the emulsion sides in contact (bipack or tripack).

An example of the "monopack" process may be seen in the new Agfacolour film, which has three emulsions forming one mechanical whole. A red-sensitive emulsion is coated on the celluloid base, over it a green-sensitive emulsion. Over this is coated a yellow filter layer, and on top of all a blue-sensitive emulsion.

Agfacolour film is only being marketed for the present as an amateur material in 16 mm. gauge. The exposed film is treated by a special reducing process and becomes a positive, and the three emulsions sensitive to red, green and blue are dyed in a coupling developer to the complementary shades of blue-green, magenta, and yellow respectively. The same film is thus used in the camera and in the projection—but, in principle, it will also be possible to use separate films for taking and projecting, by developing one Agfacolour multi-layer film exposed in the camera into a complementary coloured negative, printing on a second Agfacolour film on which by colour development the colours yellow, magenta and blue-green are produced.

In cinematographic practice considerable use has been
made of the bipack process. Although the bipack permits of yielding only two colour separation negatives, the colour rendering obtained by mixture of two basic colours is for many purposes quite sufficiently good.

The colour separation negatives are produced, in the Agfa Bipack, by using a front film sensitive to blue-green, over which is placed a thin filter layer of a red colour. The back film is panchromatic. Light reaching the combination from the lens, records the blue-green separation negative on the front film, while the back film records the red component. The filter on the front negative stops all other rays than red from affecting the back film.

Experiments made with the object of using the bipack principle for three-colour work by employing a front or back film with emulsion on each side, are unsatisfactory on account of the lack of sharpness of the image.

3.—The Technicolor Process

The Technicolor Corporation of America have developed for their three-colour process a special type of film camera using the beam-splitter principle, and in which the light from the lens is divided by two prisms face to face with a gilded semi-transparent mirror between them. A special picture aperture is provided in the camera for each of the two beams: behind one of them, in front of which is placed a green filter, a single panchromatic film moves; behind the other, which has a magenta filter in front of it, a bipack film similar to the Agfa type runs. Here the front film is again sensitive to blue, while the back film is panchromatic, a red filter layer on the front film again keeping the blue rays from the back film. Three simultaneously exposed primary records, entirely free from parallax, are produced.

4.—Screen Processes

By placing a screen of tiny colour elements (regular or irregular colour mosaic screens) in front of the photographic emulsion, or by using a lenticulated or line screen in conjunction with a three-colour filter in front of the lens, three separation records are produced simultaneously side by side on a single emulsion, since each complete element of the screen produces three primary records from the light falling on it.

In amateur photographic practice, screen-colour, line-screen and lenticulated-screen processes are used on flat films or miniature films (e.g., Agracolor-Ultra, Lumiere Autochrome, Agfacolor and Kodacolor lenticulated film, and Dufaycolor regular colour mosaic), the original film exposed in the camera being reversed direct to a positive instead of a negative. For the taking of cinematographic pictures the lenticulated film alone is of interest, though the exposure lighting required is very high—approximately ten times that needed for ordinary black-and-white work. This is partly due to the fact that owing to the high requirements in regard to fine-graininess and resolving power of photographic emulsions necessary in lenticular processes, it is not possible for utilising high sensitised emulsions as they are common with black-and-white cinematography. In recent months a short feature production has been made by the Opticolor lenticular film process. It was recorded on lenticular reversible stock and printed on the same material.

The principle of this process may be briefly described in the following terms. At the optical centre of the lens is placed a colour filter, which has three strips of the primary colours side by side and can be placed either vertically or horizontally. A panchromatic film is used in the camera, the celluloid side turned to face the lens. This side of the film is impressed with a very large num-
ber of tiny lenticulations, which may either be along the film or across it, the result being a series of very small cylindrical lenses. These lenses throw a microscopically small image of the three-colour filter on the emulsion behind them, and thus form a three-colour separation record of each point of the image on the film. A monochrome image is formed on development and consists of a series of separation records. Fig. 3 shows the path of the rays during exposure. By reversing the path of the rays in projection, the film developed by the reversed process direct into a positive results, behind a three-colour filter, in an additive colour picture.

5.—The Agfa Lenticulated Bipack Film
(Note.—The Agfa lenticulated bipack (German Pat. 583747) is not yet on the market, since the process is still in the experimental stage)

The front film of the Agfa lenticulated bipack is only sensitive to blue and green, and has a lenticulated cellu-
loid base. The back film is sensitised for red. Either front or back film may have a red filter layer to prevent the blue and green rays from influencing the red-sensitive back film. The red record is thus produced on the back film, while the front film shows a blue and green record produced by a banded filter in front of the lens. The outer bands being yellow and the inner ones blue-violet. The yellow bands produce the red image on the back film and the green image on the front film, while the blue-violet bands produce the blue record on the front film only. The two records on the front film may be separated with- out difficulty in printing by known methods, and separate blue and green negative records are thus produced. The simplest method of printing is that of subtractive colouring positive by the silver- dye-bathing process.

The Reproduction Process in the Projector Additive Processes

All colour reproduction processes can be divided into two main classes, the additive and the subtractive processes. Independently of the manner in which the separation colour records have been made, every projection process produces the impression of a coloured image on the screen by one of these two basic methods. In the additive method the so-called “optical synthesis” by a filter or

Fig. 2. Arrangement of the optical system and films in the Technicolor Camera

Fig. 3. Principles of the Lenticular Process
Subtractive Colour Processes

All subtractive colour processes produce their effects, not by coloured or optical accessories such as screens or filters placed in front of the emulsion, but by a dyeing of the emulsion itself. A simple example will show the general method used in subtractive colour production.

Prints are made of three negatives which have been exposed behind red, green and blue primary filters. If these prints are projected by a triple lantern on a screen so that the images coincide, and the filters used for exposure placed in front of them, an additive colour picture results. If, however, the black silver image of each positive is converted by a dye-toning or a mordanting process to a colour complementary to that of the filter used in taking the negative (red, green and blue filters corresponding to blue-green, magenta and yellow prints), and if the three prints are laid over each other in register and the composite images projected by white light, then a coloured image is produced by the subtractive method. (Charts III and IV.)

The coloured screen image is produced by the dyes in the prints subtracting from the white light of the projection lamp all colours which the original object did not possess. A red surface, for example, would be colourless in the print made from the red filter negative, but in the prints from the blue and green filter negatives it would be strongly darkened on development, and would thus be magenta and yellow in the dyed prints. Yellow and magenta together absorb blue and green from the white light, only red light passing through them: the red of the original is thus produced on the screen. Where all three dyes are superimposed in the three prints, no light passes and the screen image will be black (cf. Chart IV).

In practice, this arrangement of three films with different images placed over each other would never be used for subtractive colour reproduction. The actual methods in use may be roughly classified as follows:

1. So long as two primary colours only are used (usually exposing on bipack film), the separation negatives are printed on either side of a positive film with a sensitive emulsion on each side (Agfa Dipo film, for example), with the positive images in proper register. The changing of the silver positive images to dye images may be done by ordinary chemical toning methods (iron and uranium baths) or actually by the dye-toning, i.e., mordanting processes using silver iodide or copper salts and subsequent dyeing with basic dyestuffs. (Chemical and dye-toning processes.)

2. The separation negatives are printed; the prints developed as gelatine reliefs. The relief films or matrices being rolled up with three Primatone dyes and printed on a silver-free emulsion by a dye-transfer or inhibition process. (Technicolor process.)

3. Positives are made from the separation negatives and these are printed on to a special material, Agfa Tripo film, which has one emulsion on one side and two emulsions on the other, these three emulsion layers being sensitised to three different spectral regions. The single emulsion on the one side is dyed blue, while the upper emulsion on the other side of the films is dyed yellow and the under magenta. Each separation print is printed on to the emulsion whose colour is complementary to the filter colour used to produce it. The printing light is adjusted in each case by a filter to the spectral sensitivity of the particular printing layer in question at the time.

After developing and fixing this film, the silver images
are bleached out and the dye in the emulsions destroyed at the points where silver has developed, the quantity of dye affected being proportional to the quantity of silver reduced at that particular spot. (Selective dye bleach process).

4. Instead of using a film with three selectively sensitised and dyed emulsions, as described in Group 3 above, three similar but unaided emulsions may be used for the same purpose, and the dyes formed during development. This is the new Agfacolor development process, and it is based on the fact that certain developing agents produce oxidation products during development that will couple with other chemical substances and produce insoluble dyes.

A film coated in this manner can be made sufficiently sensitive not only to be used as a printing material, but also for actual exposure in the camera. In the 16 mm Agfacolor film, for example, the positive image is produced by a reversed process, the coloured image being formed in the second development operation by coupling certain oxidation products with the dye components present in the three emulsion layers. (Colour developer process).

Subtractive colour films have proved very popular in practice. The toning processes used in conjunction with a double-coated positive film (such as Dipo) or ordinary positive film were at one time (1928-31) so common in America that the report of the progress committee issued by the J.S.M.P.E. in 1931 stated that in 1930 no less than 15 per cent. of the films produced in America were colour films. On these two-colour processes, many are no longer used (the older Technicolor, Multicolor, Photocolor, Sensinetcolor, Siirius, Polychromide, Cinecolor, etc.). Cinecolor Magnacolor and Tri-hicolor use Dipo film, Harriscolor, Fleischr-Decolor and Dunningcolor use normal positive film. Brewstercolor and Cinecolor are three-colour subtractive processes (beam-splitter cameras) which use a double-coated positive for two images and produce a third by an illumination process.

The new three-colour process of Technicolor has found increasing favour in America—and recently in England—particularly for short travel and cartoon films, although between 1934 and 1936 a number of full-length colour feature films were produced by the process.

In the recent years (since 1934), multi-layer films have come into practical use. A selective dye bleach process using triple-coated film, has been used by Gasparcolor (Berlin and London) for short cartoon films, and 16 mm amateur films are on the market which are based on the colour developer processes (e.g., Agfacolor).

Judging by outside appearance alone, the difference between additive and subtractive processes is that the emulsion of an additive process is generally black and white, while in a subtractive process the image itself is always coloured.

As a general rule, it may be noted that additive colour processes require considerably more light intensity in projection than subtractive processes. Nor can they usually be used in a normal projector equipped for monochrome projection without some alteration to the optical equipment. Their treatment in the laboratory is identical with that for black-and-white films, however, while the subtractive processes not only introduce difficulties in the manufacture of the raw stock, but require also accessory laboratory equipment to carry out the dye-forming operations.

**The Duplication of Colour Films**

The printing of colour films, i.e., the mass production of release prints imposes more or less difficult tasks on the laboratory according to the original record available. In colour film practice to-day, the following originals merit consideration:

1. Two or three-colour separation negatives on one film or on separate films, with monochrome negative images (Technicolor, Bipack processes, Gasparcolor, Francia, etc.).

2. Lenticular reversal films with monochrome positive images (Siemens-Opticolor, Agfa lenticulated bipack, etc.).

3. Multi-layer reversal emulsions giving coloured positive images (the new Agfacolor and Kodachrome).

In Class 1, printing, either in contact or optically, is done by the ordinary methods for black-and-white. The photographic treatment in the development and other baths is mechanically operated as usual. The additional processes, such as the toning of Dipo films or the Technicolor relief process, can also be done satisfactorily by machine.

The printing of such negatives on Tribo-Film (Silver Dye Bleach Process, Gasparcolor) by using intermediate positives, presents no technical difficulties.

The printing of the separation negatives on lenticular film (or other colour-screen material), or on material of the multi-layer Agfacolor type is possible in theory, but has not yet been accomplished.

Turning to Class 2, the lenticular films, a large number of workers have attempted for years to find a satisfactory solution to the difficulties of the printing process. Theoretically a number of possibilities suggest themselves, the Opticolor process— which was demonstrated recently in the cinema by prints made on a special Siemens printing machine—shows one extremely interesting attempt to solve the problem. The printing of lenticular film on multi-layer material is at present still in the experimental stage.

Prints from reversal originals on multi-layer material (Class 3) are theoretically possible by printing the positive original on the same type of emulsion, such as the new Agfacolor reversible film, or on lenticular reversible film. In practice, satisfactory prints have not yet been made.

(Continued at foot of next page)
Cinema Log

by KENNETH GORDON

Twenty Years Back

My friend, C. Lancing, who was acting in films in 1913, sends me a photograph taken behind the lines of the B.M. cinema crew. You will see they are featuring a British and Colonial film. Lancing, who is the sergeant behind the projector, is still acting in films—looking as young as ever. Incidentally, the managing director of B.C. was our old friend, J. B. McDowell, M.C., O.B.E.

British Money for French Films

The City Editor of the "Daily Herald" declares that while the independent British film industry has been brought to a standstill because of the long controversy on quotas, over £1,000,000 of British money has poured into French film finance.

It is estimated approximately 75% of the French film industry is now financed by London.

He states that similar finance will be available for approved British film producers when the position is clarified by the Films Bill.

"The Cine-Technician" understands that certain finance has also been found for Italian films and Anglo-Italian films already have been produced.

SUMMARY OF COLOUR CINEMATOGRAPHY

(Continued from previous page)

either from a reversible positive or by printing from a negative in complementary colours.

Quite apart from the purely technical problems which must be solved by a successful colour process, a whole series of economic considerations must also be kept in mind. To estimate the practical cost of a process, for example, the exposure cost, the cost of the raw stock, the cost of processing, the cost of printing, the life of release prints, and even the projector light cost in the cinema, must be taken into account.

It is thus difficult to prophesy which particular process will prove most popular ultimately. Technicolor, lenticular film and multi-layer-film will probably all compete with one another in the end. The technical, economic and artistic problems and the advantages and drawbacks of each particular process can only be found by their practical application to film production. But it is undeniable that colour films are on the move, and are reaching the point when cinema theatres can no longer dispense from them.
Ivor Montagu sees Red.

HEAVEN save colour films from colour film experts! Colour film experts make me see red. So long as colour films are in their hands, the whole affair will be a muddle and colour make no progress. Don't you know them? We've all suffered from 'em. They call at the studio with their sample. "Look at that perfect green," they say. Or that "marvellous yellow." Let's see a scene of blacks and whites for a change. That'd be a test of any colour system.

The experts pack each of their sample shots full of as many colours as they can find at once. If they go outdoors, it's hermeneutic borders. If it's indoors, it's a girl wrapped round in the sort of shawl that made the ambitious chameleon burst, with half-a-dozen different coloured cushions and curtains and carpets pinned up behind her head like the cornice of some merchant in an eastern bazaar.

It's not only the samples. It's the whole film. All their funny-colour monstrosities are marred by passing under the expert's thumbs. "Come and see the blue skies, or the green pinewoods, or the yellow deserts, or the gay scarlet uniforms, or the Max Factor complexities." What the public wants to see is the story, and all these colours, beautiful as they may be, get in the way.

I'm not running down colour. Colour is the effective thing. The thing of the future. A colour shot in a black and white film gets a cheer. But that's when you choose the right place to pop the beauty spot in. Are you old enough to remember tinted stock? I remember when sunset landscape and sunset shots and such like were tinted red on a blue base or tinted blue on a red base—it didn't matter. Every time such a shot came on the screen at the right sentimental moment your trade show audience would clap. It was sure-fire.

This is not a plea to go back to those old days and mix together black and white with colour-process stock. But the principle is absolutely right. The colour tints, unreal as you liked, got the cheer because they came in at the right time—when the audience were meant to see back and sniff up beauty. The rest of the time they were allowed to go on with the story. It Technicolour (I don't mean Technicolor specially, but any and all of these systems that let colour experts run their colour films) wants people to appreciate beautiful pinewoods or uniforms, it can only do so by keeping them right out of the picture wherever they are not wanted.

What is a close-up for? So you can see a face big? Fiddlersticks! To concentrate attention to it. Which is done easiest by eliminating the rest. (Principle of Zen Buddhism, but pass that for the moment). Exactly the same with colour. It is not a blind bit of good having a heroine emote in front of a beautiful background. Your storyteller, at the moment, wants either the heroine's glycerine or the background. Both together mix and middle the audience, which gets no clear impression and hence is bored.

Colour film makers have to make up their minds about the order of their narrative. Separate the elements, and express each to the n'th degree in its sequence. Think, a novelist. He writes a venture or two about the heroine's tragedy and heightens it with a bit of nature description, the storm, or the desolate moor, or what not. The colour film expert makes his paragraph out of words from both sets of ventures mixed up together.

Here we come back to what I said about the best colour system being the one that can render black and white best. And this is true. Before you can tell a story in colour, you must learn how to tone down and subdue colour so you don't notice it where it is not wanted.

And this is only nature, after all. Talk with a man in his office. Then tell me. What colour was his desk? His carpet? His eyes? His suit? His tie?

The keenest you were on getting that job, the less likely you are to have noticed. And it you put that scene on the screen in a colour film the converse is just as true. The more you want the audience to be attending to the anxiety and drama of the scene, the less you should distract them with the colour.

Hitchcock's idea of the colour film scene of every atom of the set in black and white and the character men in evening dress, just until the crucial moment when the dash of gory red blood appears on the shirt front—that's heightening the drama to a height ordinary black and white can't reach.

Only one full length colour film ever packed 'em in (in its own field in competition with domestic black and white, of course) the way the people who invented colour dream of. That was a Soviet film, "Nightingale—My Nightingale."

The colour is frightful, fuzzy and untruthful beyond compare with a dozen other systems. Why was it so successful. Just two reasons are enough.

The heroine wore Gretchen-blond hair, and when the hero tries to give the promised signal from the tower window, a shot through his breast stained his handkerchief with his heart's blood.

I assure you, believe it or not, the simple hokum of that flaxen hair lifts up the seduction scene to the nth degree above black and white, as does that waving red-stained kerchief. The audience eat it.

To cobbler's there's nothing like leather. So long as colour experts are allowed to interfere with colour films, so long they'll keep trying to parade their own colour sense and the fidelity, truthfulness and versatility of their system in every blessed shot, and succeed solely in boring the audience to worse than tears, as everybody knows. And a bit out of every 1,000 colour features so far have done successfully.

The task of the colour film expert is not merely to invent how to render colour (which it has done), but to invent how to hide colour (which wild horses won't persuade the lunatic even to allow us to do), and when he puts that means in our grasp we, the creative technicians, the scenarists, the directors and cameramen, will decide when and where which should be done, and this will so heighten our stories with colour that the audience will be knocked for a six every time, his shareholders recover breath, and himself get a pat on the back for his cleverness.
RENNEHAN TALKS TECHNICOLOR

All that is needed to strip the so-called mystery from colour camerawork is to consider it from the same practical viewpoint as one would use in discussing black-and-white. Not so long ago every detail of our routine black-and-white camerawork was as remote from the bygone days of mystery. Today experience has made us accustomed to commonplace. And that same experience applied to colour will make it commonplace, too. There are many little ways in which we can make any kind of camerawork easier or more effective by simply sidestepping the difficulties of impossible things.

Colour can be approached in the same way. If the cameraman will keep alert, he can discover many little practical tricks, which not only make his colour scenes better, but also enable him to accomplish them more easily.

Modern Technicolour is photographed under arc lighting. This in itself should be no difficulty to the competent cameraman. Nine years ago the industry took without tittering a sudden change from arc to incandescent lighting. In turning to colour, the reverse of this transition should be easy.

The chief reason for Technicolour's use of arc lighting is in the fact that any colour process must take into consideration not only the intensity, divergence and diffusion of its lighting, but also the colour of the light used. If the light varies appreciably from the colourless white standards of natural daylight, that variation will be reproduced on the screen. The arc lamp is inherently closer to that standard than any other type that can be used for pictures.

The high intensity "H.I. Arc" spot-lighting units, since high-intensity arcs produce an inherently more bluish ray, require a very light straw-coloured filter to match this daylight standard.

The matter of lighting level has been argued too often both in and out of print. Each cameraman balances his lighting differently, and determines his own favourite lighting level. Just as in black-and-white it is impossible to say that one man is right and the other wrong, because they use different light levels to secure comparable effects, so it is impossible to say how much or how little light must be used from any one source on a colour shot. Successive advances in both emulsions and laboratory technique have brought Technicolour lighting requirements progressively closer and closer to parity with comparable monochrome.

In this phase, too, we are aided by the fact that, unit for unit, the "H.I. Arc" spot-lighting units used for colour are considerably more efficient than most of the lamps used for black-and-white. They throw smooth, more controllable beams. Unit for unit, the modern Technicolour set uses no more light-sources than would be necessary for black-and-white; in some cases, thanks to the more efficient light-distribution of our lamps, we can use fewer sources.

The fallacy that colour must be lit flatly has been pretty well exploded. Some of the flatness in the early three-colour pictures was due to the early limitations of higher light level and to the fact that in those days the present modern lamps were not available.

In actual fact, Technicolour scenes can be lit with much the same range of flatness or brilliance that would be desirable for the same scene in monochrome. In so far as my personal preferences go, I would prefer to light Technicolour scenes with a bit more contrast than I would use in black-and-white.

A great deal of the contrast as well as the intensity of lighting required for colour scenes can be governed by the cameraman's choice of set-up. This is noticeable in black-and-white, but it is still more evident in colour. Often moving the camera a scant few feet one way or the other can make a tremendous difference in the lighting required, saving both time and current in notable amounts.

In black-and-white the cameraman, after a brief outline of the nature of the shot, can often very safely leave the details of camera set-up to his operative crew while he concentrates on lighting. In colour, this is not the case. This is not said with any sense of slighting the abilities of the operatives, but simply because the combination of colour with line, mass and lighting requires more precise planning than do the three latter factors alone.

My personal method is to plan the set-up very precisely by inspection through a detached finder, thereafter indicating to my crew the exact position of the camera to get the desired composition—the camera's position, its height from the floor, the exact angle, and so on. By means of a colour film, the background as a rule plays a much more important part than it does in black-and-white.

An area of some strong colour here, another there rendered too vividly there, can upset an otherwise very effective composition. This fact is something the cameraman coming newly into colour from black-and-white must learn to consider in detail. Ordinarily, such a splash of colour might, in black-and-white, be rendered as an inconspicuous neutral grey. In colour, it would be rendered as colour possibly as objectionable colour.

This planning requires careful co-operation from the director. If he will really co-operate with the cameraman and understand his problems, he can often move his action, and with it the camera angle just that little bit to one side, or closer to the wall, farther out, etc., and thus do much to greatly simplify this problem of colour composition enormously.

I have found it very helpful to plan my background (or set) compositions first, quite independent of the principals, and then to fit the players into the compositional pattern, rather than to strive to co-ordinate two otherwise conflicting units at once.

Closely related to this is the matter of set dressing. In monochrome, an over-dressed set is not often noticeable. In colour it will be. Actually, the simpler a colour is dressed, the more effective will be the picture on the screen. Genuine co-operation between camera, set dresser and art director both before and during shooting is doubly necessary. Colour adds so much to a scene that physical simplification is vital. Elimination of surplus detail actually builds to a stronger and more pictorial scene.

Practically all of these details, it will be seen, have a parallel in black-and-white camerawork. Every black-and-white cameraman is accustomed to watching them almost subconsciously in his daily work. The only difference is that in colour they must be watched more closely and at least at first more consciously.

(Continued at foot of page 88)
FORTY YEARS ON

by E. E. BLAKE, Managing Director of Kodak Ltd. and President of the Cinema Veterans

FORTY-ONE years ago I first started 'handle turning' a cinema projector. It seems, and is, a long time to look back over the years, yet so great was the thrill I experienced when the picture flickered on the screen that I can to-day recall everything in connection with it. Although only eighteen years old at the time, I was already well trained as a lantern operator: my father was a professional photographer and photo dealer of long standing, my mother a highly successful exhibitor at the R.P.S. and other exhibitions, so it was only natural that my elder brother, the late W. N. Blake (founder of the Cinema Veterans) and myself became early interested in the new invention of cinematography.

Our early exhibitions were given in Town Halls, Village Schoolrooms, Clubs, etc. In those days there were absolutely no regulations prescribing the conditions under which exhibitions could be given. Our paraphernalia was carted from place to place on a horse and trap. As we always endeavoured to get back to our home in Bedford each night, we were often faced with a ten to fifteen mile drive home after the show. Roads were not of the kind found to-day, and usually rough and covered with loose flints all through the winter months. Sometimes we were snowed up and had to dig the trap out of a drift five or six feet deep. I well remember in the winter of 1899-1900 arriving back in Bedford at 8 a.m., having been from 11 o'clock the previous night travelling ten miles through a snowstorm and just in time to load up our cine camera and take a fifty foot 'Topical' of the Beds. Regiment leaving for the South African War.

As technicians, readers of 'The Cine-Technician' will be interested in the details of apparatus we used in those days. The projector took a roll of film up to about 75 ft. in length; this was supported above the mechanism in a kind of cradle, a steel pin was slipped through the centre of the roll, which was without any reel or flanges; there were no continuous sprockets, the film being pulled down in a series of rapid jerks by the intermittent sprocket, which was the sole means of propelling the film through the mechanism. The intermittent motion was given to the film by a maltese cross actuated by a cam set in a locking ring, the intermittent sprocket being fitted on a shaft connected to the cross. The same principle is used today, but the cross and ring, etc., are enclosed in an oil bath. The shutter was behind the lens and 'T' shutters, after passing through the gate, the film dropped like a long ribbon into an iron box situated below the apparatus. All the films shown during an exhibition tumbled into the same iron box and were rewound the next morning. The projector was fitted with a device for showing lantern slides, which formed the rest of the programme. The illuminant was obtained from a 'Gwyer' mixed oxy-hydro jet supplied with necessary gases from two steel cylinders, pressure being regulated by a Barrack regulator affixed to the neck of each cylinder. The screen was of linen and stretched on a bamboo frame made up of short lengths fitted into brass tubes at the joints and angle pieces at the corners. Constant practice in putting up the outfit made a fit-up for the show a very quick proceeding, and from the time we had the gear on the floor of a hall until the whole was fitted up and light centred was usually a matter of about fifteen to twenty minutes. Our camera was of French manufacture, taking a length of 50 feet of film, which had to be loaded and unloaded in a dark room or changing bag.

The average length of a film as supplied for exhibition was from 50 to 55 feet in length and of a width of 1½ ins.; the perforations were very similar to those standard to-day, four each side of a frame. A good deal of difficulty occurred if the joining of one film to another was attempted in order to save waste when threading up the projector, due to some makers having the perforation holes level with the frame line, whilst others had them lower down. About ten years passed before this simple matter became standardised: Continental makers stuck to their standard and the British and U.S.A. to theirs, things in this direction haven't changed much after all.

Here are some of the first films shown by my brother and myself round about the gay 'nineties: 'Man Burning Weeds,' 'A Snowball Fight,' 'Soldiers Crossing a Bridge,' 'Waves Breaking on the Sea Shore,' 'Queen Victoria's Diamond Jubilee Procession 1897,' 'Highland Dance at Balmoral,' 'Train Entering a Station,' 'Hat Manipulation or Chapucography,' this showed M. Trucy, a French music hall performer, who was one of the first subjects of the brothers Lumière, and I think brought the first Lumière projector over from Paris.
Now for some of the early makers of apparatus—Lumiere, Edison, Paul, Moy, Darling. Prestwich and John Wrench. Films were made by Lumiere, Edison, Paul, Jas. Williamson, Hepworth, G. A. Smith and others.

As this issue of "The Cine-Technician" is to be mainly devoted to colour cinematography, perhaps a few words on the subject of colour in the early days will not be out of place. The first coloured pictures were made by hand tinting each frame; of course there was fringing, but the effects were considered pleasing and films so treated were popular. I believe we paid about one shilling a foot for a subject showing the famous Loie Fuller performing a skirt dance. As our projector could be reversed at will, in order to make the film run longer on the screen we used to turn rapidly forward and backwards on a piece of about ten feet and so prolonged the 56 ft. to a much greater screen time. Owing to the nature of the subject it looked equally good either way, and no one ever noticed the trick. Following on hand-tinted films came the Pathé-colour method of applying colours by means of ink rollers through cut out stencils, this was much less costly and very popular for many years. The first really commercial photographic colour system in this country was "Kinemacolour," sponsored by my old friend Chas. Urban, and under whose direction outstanding success resulted. Some of these films were very pleasing, if not actually true to natural colours, and Urban certainly gave a great uplift to the cinema in his day.

Once a year we old-timers of the industry meet together for an annual reunion, when men who have made their pile join with their less fortunate fellows at the festive board and swap yarns of the days gone by. Ahs, several have passed over, including Jack Avery, Sidney Bacon, Ted Catlin, Thos. Haddon (one of the early raw stock manufacturers), J. Henderson, W. G. Jones, Jas. Williamson, Sir Walter Gibbons, W. Engelke. Will Day, Geo. Cricks, Bill Vinten and my brother, W. N. Blake. Happily many are left, including Matt Raymond, the first man to project pictures publicly in London with Lumiere's original machine, Robert Paul, Sir William Jury, Colonel Bromhead, Dick Dooner, David Devant, Claude Freise Green, Cecil Hepworth, E. G. Turner, Jack Smith, Chas. Urban, Bill Jeapes, Jimmy Squier, and a host of others.

The old days were great days; there is a wonderful spirit of comradeship among the old timers. Long may they live to enjoy the pleasure of seeing modern cinematography. Thanks to the generosity of the leading cinema theatre circuits, all have now the privilege of a season ticket admitting to the leading cinemas of Great Britain, for which they, our committee, and myself, as President, heartily thank them.

Forthcoming Events

WEDNESDAY, MARCH 17th
Lecture by Mr. Dennis Wratten, of Kodak, on "Duplication of Motion Picture Films" at Crown Theatre, 86 Wardour Street, W.1., commencing 9.0 p.m.

FRIDAY, MARCH 25th
Fourth A.C.T. Ball and Carbaret (Grand National Night), Astoria Dance Salon, Clarion Cross Road, W.C.2., 8 p.m. to 2 a.m. Tickets 3 6 each, from 145 Wardour Street, W.1., or A.C.T. Newsread, Studio and Laboratory Secretaries.

RENEHAN TALKS COLOUR
(Continued from page 206)

Once these details and the somewhat narrower latitude of any colour process are understood, any able black-and-white cameraman can photograph colour as easily and as confidently as he does black-and-white. This is proved by the increasing number of major studio Technicolour productions being photographed by the studios' own black-and-white cinematographers with but a bare minimum of coaching—advice, rather than help—from Technicolour cameramen. This trend is bound to continue; and as it does—as more and more outstanding black-and-white cameramen familiarise themselves with colour camerawork—it will be realised that Technicolour photography is not a mysterious secret but a simple matter of applying the same basic rules that we have learned to observe in monochrome, to the end that we may get better pictures in colour.

RAY RENNEHAN, Local 659, I.A.T.S.E
Sedition and the Films Bill

By GEORGE H. ELVIN, A.C.I.S.

It was only a few years ago that a well-known trade unionist was prosecuted under a Statute of Edward III, passed in the year 1360. No amount of protest — and there was plenty — could prevent the prosecution or rescind the sentence of two months imprisonment. Another Act of Parliament was also quoted at the time: the Seditions Meetings Act of 1817, film Technicians were the other day victims of this 121 years' old piece of legislation. The Film Industry Employees' Council arranged to lobby members of the Standing Committee considering the Films Bill, and over 200 unemployed film workers accordingly visited the Houses of Parliament. Afterwards a meeting for which the police had previously given their consent, had been arranged at the foot of the Irving Statue in Charing Cross Road. At the last moment, however, Scotland Yard forbade it under this act of 1817 which inter alia forbids meetings within a mile of the House while Parliament is in session.

"Tatler" of The Daily Film Reader was present. This is what he wrote:

"I must say I was amused at the scene round the Irving Statue. You'd really think a most dan-
gorous assembly had been planned - for on one corner were three inspectors of police; on three sides of the meeting were constables in couples - and a sergeant stood amidst the crowd, looking prepared for anything! At the same time, a better crowd of intelligent and decent men and women you could not imagine anywhere. If you have as I have a sense of the ridiculous, you must have laughed at this pompous display of authority, which kept a glinting eye on the platform to see that nobody mounted it! It was difficult to keep in mind that this meeting was simply a body of BRITISH technicians, ready to hold a public meeting about a BRITISH bill, in the BRITISH House of Commons."

Thank you, Tatler!

I have since found out a few things about the Seditious Meetings Act. It was passed just after the close of the Napoleonic Wars, when there was great social unrest - there were bread riots, unemployment, general dissatisfaction, persons clamouring for the vote (one of the many rights which we take for granted to-day, forgetting the hard fights which realised them). In short, an attack on the House of Commons was feared. Hence the passing of an Act to forbid demonstrations and meetings within a mile of the House while Parliament was in session. It was emphasised at the time that the measure was purely a TEMPORARY one. Yet it has never been repealed, and like other so-called temporary measures is found very handy by the authorities from time to time to suppress activities under entirely different circumstances from those conceived at the time of the passing of the

**THE FILM INDUSTRY TO-DAY**

Points from the speech of Mr. Elvin to the meeting of unemployed film workers referred to in his article alongside.

- 8,000 out of 10,000 technicians and workers engaged in film production are to-day unemployed.
- A special Labour Exchange has had to be opened at Boreham Wood (Elstree) to cope with the vast increase in unemployment.
- If the Films Bill goes through in its present form all you can look forward to is an average of six weeks work per year.
- The French film industry to-day is in a healthier position than ever before because due attention has been paid to the needs of its workers.
- Art is international. Therefore, on this score alone, let us have a few more Britishers in key positions.
- During the past ten years 610 film companies have been promoted. A large number have made only one film. Some have not completed a single production. Thousands of pounds are owing in technicians' salaries by many of such companies with nominal capital and no assets from which such debts could be recovered.

What we want is:

1. Sufficiency of production;
2. Minimum quality of production;
3. British labour in key technical positions;
4. Fair wages and working conditions for all employees.
Act. If the organisers had persisted in holding the meeting we assume film technicians could be accused of sedition. We've been called all sorts of names from time to time but sedition! Perhaps Guy Fawkes, after all, was the only person to enter Parliament with good intentions.

Of course we held our meeting. We went to the nearby Gatti's Restaurant, where a large audience listened to speeches from Tom O'Brien and myself, with Ralph Bond in the chair. Full reports have appeared in the trade and lay press. The following resolution summarising the purport of the meeting was unanimously carried:

"This meeting of unemployed film workers and technicians draws attention to the grave position in the film industry, 80% of the workers engaged on production being unemployed, and urges Parliament to amend the Films Bill to ensure continuity of employment, fair wages and working conditions to all engaged in the industry."

As I write, the Committee Stage of the Bill is completed. Only the Report Stage and the House of Lords remain to make possible alterations. Theirs is a grave responsibility. At this stage the Bill is grossly inadequate. True, certain improvements have been made. Most of them are in accord with the campaign led by the A.C.T. and N.A.T.E. under the auspices of the Film Industry Employees' Council, in conjunction with other employers' organisations in the industry. Press campaigns, lobbying of members, deputations, officials addressing meetings of members of both Houses, mass meetings and demonstrations, innumerable conferences and committee meetings, have all played their part. All these activities are being carried on from day to day until the very last stage of the Bill's journey through Parliament. The cooperation of all the ten thousand film workers (and they have responded nobly to every call so far) between now and then may bring just that extra pressure necessary to increase the quota rates (the present 22% increase in Exhibitors' Quota, while welcome, is still grossly inadequate) and make other amendments of vital importance if the next decade is to see progress in the production of British films and an improvement in the lot of those who make them.

In our next issue we will report at length on the provisions of the Act, which will by then be law. It is up to you, reader and film technician, to play your part in ensuring that our next number is one of optimism for the future of the industry in which today you are probably unemployed, but in which for the next ten years you hope to work. May we by your wholehearted cooperation turn that hope into a certainty.

* * * *

OURSELVES

We have to announce a change in publication date. From this number we shall appear on the first day of March, May, July, September, November and January. This explains why there is no issue covering February 1938. December 1937-January 1938 was our last issue. March-April is the current one.
SIR WALTER CITRINE, K.B.E.

General Secretary of the Trades Union Congress, writes on:

PAID HOLIDAYS FOR ALL

It will be recalled that A.T.S. gave evidence before the Government's Committee on Holidays With Pay and dealt with the specific problems of the film industry. It associated itself generally with the evidence and recommendations of the Trades Union Congress which our distinguished contributor outlines below.

Evidence has been submitted to the Government's Committee on Holidays With Pay on two separate occasions by the representatives of the Trades Union Congress. On June 8th, 1937, it was my duty as General Secretary of the Congress to appear before the Committee with Messrs. H. Berry, W. Holmes, and W. Lawther as representatives of the T.U.C. General Council, accompanied by Mr. G. Wootton, Secretary of the T.U.C. Research Department. A comprehensive Memorandum, embodying the main grounds of the workers' claim for annual holidays without loss of wages, was presented to the Committee, and upon this my colleagues and I were interrogated by members of the Committee who wished to elucidate points raised in our statement.

Our main Memorandum, with a verbatim report of my oral statement and answers to questions, appeared in pamphlet form under the title "Holidays with Pay:"

Briefly, we emphasised to the Committee the Trade Union view that for large masses of workers, with their families, opportunities of leisure in the form of annual holidays have hitherto been restricted by lack of means. Some classes of workers, mainly the non-manual or salaried groups, have enjoyed holidays without loss of earnings by long-established custom. Holidays with pay for other classes of workpeople have been obtained mainly through collective agreements negotiated by Trade Unions or by individual arrangement and custom.

We pointed out that this country lags behind many others. We cited evidence that a system of paid holidays as a legal right has developed in 38 countries, such as France (where the statutes provide for 15 days' holiday, including at least 12 working days with pay); Norway (where provision is made for a minimum of 9 days' annual holiday); the U.S.S.R. (where the legal minimum holiday is 12 days).

Legislation in 22 countries ensures paid holidays for all classes of workers, or gives statutory effect to industrial agreements in which the paid holiday is incorporated. In five other countries it covers manual workers only.

A feature common to most countries is the increasing extent to which Governments are finding it desirable to extend the principle of paid holidays by legislation to cover both manual workers as well as salaried employees.

We urged that this is a necessary consequence of mechanised industry and the speeding-up that has taken place in connection with it in many productive processes. Nervous strain has become a common malady among wage-earners. Sickness, proneness to accident, absenteeism and other factors which interrupt regular working are part of the costs which industry now bears that can be set off against the cost of introducing a general and comprehensive system of annual holidays with pay.

I stated the view that in this country the cost of an annual fortnight's holiday with pay will vary in relation to total costs of production from one industry to another, according to the proportion of wages to total production costs; but that in any case it is not likely to be high. Certainly not as high as 4 per cent. of the total wage bill, as had been suggested. Even if its cost was 1 per cent., however, we offered calculations to show that industry could well afford it.

Finally we submitted to the Committee the T.U.C. proposals in the following summary form:

(a) All employed persons shall be guaranteed by law, after 12 months' service of not less than 1,800 working hours, or such hours as may be agreed by the organisations of employers and workers in the industry concerned, an annual holiday with pay of at least 12 working days, exclusive of bank and other public holidays.

(b) All persons who have been employed for a period of service of less than 12 months shall be entitled to an annual holiday with pay of not less than one day for each completed month of service of not less than 156 working hours, or such hours as may be agreed by the organisations of employers and workers in the industry concerned.

Note.—The hours stated in paragraphs (a) and (b) are only intended to serve as illustrations, and should not be incorporated into the general law. We consider this is a matter which could most effectually be dealt with by collective agreement with other recognised negotiating machinery.

(c) The qualifying period of service necessary to secure such holiday may be spent in the service of one or several employers.

(d) As a general rule, it should be provided that the holiday should be taken in one unbroken period. In exceptional circumstances, however, the holiday may be divided into two periods, provided that one period shall be of not less than six consecutive working days.

(e) The holiday payment shall be such as may be decided by collective agreement or other established negotiating machinery in the industry concerned, but all persons shall receive as a minimum the customary hourly or weekly time rate provided for their grade as defined by any collective agreement, Trade Board Order, or decision of a Joint Industrial Council or other approved negotiating machinery governing his employment.

(f) In cases where employed persons are paid partly in cash and partly in kind, their payment for the holiday shall include a cash equivalent of any such remuneration or other emoluments.

(g) The contract of service shall not be broken by trade dispute, nor shall the period of continuity of service required in order to secure entitlement to a holiday with pay be broken by interruptions occasioned by sickness, accident, family events, military service, the exercise of civil rights, etc.

(Continued on previous page)
AN OPEN LETTER TO THE PRESIDENT OF THE BOARD OF TRADE

Dear Mr. Stanley,

I think it was Miss C. A. Lejeune, at the opening of the new Shepherds Bush studios, such a few years ago, who remarked that some of the greatest drama of the films was right on our own doorstep—neglected by our own inactivity to see the potentialities of stories that lay under our noses—the work that is done by the technicians themselves.

Now, when that group of workers who were there when those studios opened are disbanded, and when you yourself are engrossed in putting a new type on a wheel whose hub is broken, perhaps it is at the time to draw your attention to a book that has recently been published. It is called "200,000 Feet on Foula" and is written by Michael Powell. It is a record of the making of a film which he directed—"THE EDGE OF THE WORLD."

There before you lie the answers to nearly all of the questions that have been receiving your attention during the last few months. It tells you of the making of a British picture by a British unit, their struggles, their failures, their successes. It gives you an insight into the great driving power that conceived an idea eight years ago and saw the realisation of a dream amidst the raging of Atlantic gales.

Michael Powell wanted to make a film of the evacuation of St. Kilda and the depopulation of the Highlands, but owing to circumstances over which he had no control he made it in Foula, and as things turned out perhaps it is all the better for that. The book is a beautifully written and masterly description of the trials and triumphs of a film unit; such trials and triumphs as, unrecorded, beset so many film units which have not the advantage of his unique situation to bring them into the spotlight of popular knowledge. It tells of the efforts they made to get the film financed to start with—the long process of preparation—the landing on the island—the settlement down to five months of hard work and the ungrudging co-operation of a grand team of technicians. You will laugh at many of their experiences—you will enjoy the sometimes ruthless analysis of characters and the frank description of the ways of "production chiefs."

You will be thrilled by the narration of danger and bravery—you will sympathise with the efforts to hide the suffering, the real suffering which befell some of them, both mentally and physically—and you will appreciate the force of the camp's tag line, taken from the remark of Walter Huston in "The Criminal Code"; "That's the way things break sometimes—and you've got to take them the way they fall."

To us in the film industry it is a vivid revelation of our own unexpressed feelings, and I applaud Powell on his sincerity when he speaks of the worth of his British unit: "I have a weakness—only I think it is a strong point . . . I believe in giving young men a chance . . . and after seven years of good production there is some splendid new material, men like Arthur Crabtree, Roy Kellino, Bernard Knowles, Cyril Bristow, Ronnie Neame, all of whom I have seen come up from assistants." (Thanks, Mr. Powell).

We don't shunt our admiration of our fellow technicians—perhaps we are at fault in that—but we feel and know that Powell is right when he says "No one man ever made a film. He can inspire it. He can stamp his personality on it. But in the long run it is good team work that makes a good film" . . . And if I may add a glimpse of the obvious, it is good team work that makes a good film industry. You, Mr. Stanley, are one of that team. Right at the moment you are leading it. Where? To you our industry is but one item in your daily round—to us it is our very existence. When you read these pages you will recall that famous October gale when the unit were marooned on Foula—the splash press headlines—the broadcasts—the world anxiety—and you will learn the inner story of the lives of the unit from it. There the details come to life—the good humour—the hardships—the tried temperaments—the open display of orders—and through every line of every page the "left-motif"—the determination of a British director to make a GOOD BRITISH PICTURE.

Those boys are all friends of ours—Ernie Palmer, Skeets Kelly, John Seahourne, George Black, and all the rest. And we have hundreds more like them who can do good work too—when they get it! Read that passage about Skeets . . . and Skeets, never shall I forget him. Half the time he had no tripod—his tall body screwed up in the boat whilst I directed over his shoulder. He held as steady as the "Kame" and performed miracles. Thirty shots in four hours—in boats—in a dashing sea—on slippery rocks—with four actors and dramatic scenes. It was worth eighteen weeks together to see it could be done!'

The workers of the industry thank Mr. Powell for these words. There is not a man I know who wouldn't work his "guts" out for that . . . even though it didn't appear in print.

And afterwards, when you have read the book, go and see the film. You will love it even more. And when you have seen the film . . . well, need I point a moral?

We can make films in Britain as well as anyone can. We have the British technicians capable of the job. We have the studios. With all due deference to C. A. Lejeune, we don't really ignore opportunities that lie at our door. Many of the boys who helped to make "EDGE OF THE WORLD" are now, like most of our industry, unemployed. Will you give them a chance to get back to work? To build up the British film industry we all so much desire to see? Remember, YOU ARE LEADING THE TEAM. Yours sincerely,

THE ASSOCIATION OF CINE-TECHNICIANS

Compensation Obtained

The Legal Department of the Association of Cine-Technicians has recently handled cases for two of its members, and reports that each case has been settled satisfactorily. In the first case settlement of £30 compensation had been obtained in respect of injuries received by a camera operator during the course of his work. In the second case a settlement of £25 was reached with the company in respect of breach of contract with a cameraman.
WESTON SELECTIVE ANALYSER
MODEL E665.

FILMS & EQUIPMENTS LTD.
145, WARDOUR ST. :: LONDON, W.1.
BARKER'S MOTION-PICTURE PHOTOGRAPHY LABORATORY IN 1913.

Top to Bottom and Left to Right: Printing Room; Examining, Cleaning and Joining Room; Mr. Dennis inspecting a frame; Title Making; Developing Room; Cartoon Making.
RETROSPECT by P. DENNIS

WHEN turning over a lot of photographs a few days ago I came across some that brought back old memories of over 20 years ago, and which I am sending on to you, as they will possibly be of interest to many of you. They were taken on Grand National day 1915 (when "My Sloper" won). W. G. Barker, "The Father of Topicals," was doing the race, and those are some of the rooms where I should think, the quickest "National" ever was turned out. Owing to war-time restrictions travelling and transport facilities were very bad (no aeroplanes in those days), so W.G.B. and his merry (?) men did not arrive in Soho Square until twenty minutes to nine; the complete race was shown at the Empire at five minutes past eleven. This time can be verified by several who took part in the job, L. Eveleigh, S. Blythe, O. Bovill and others, who are still in the business.

All developing and fixing baths were at 55° F. and if you want a real job just dissolve 4 cwt. of Hypo in two tanks of 65 gallons each, in a hurry, so that you finish with them both at 75°. Our test piece was fixed in under 30 secs., and the last frame of negative was in the developer with the first frame of positive; negative and positive were developed in the same baths, wound on 150 ft. frames. The drum room, as the drying room was called, was 90°. One photo shows the developing room. I believe the artist at the developing tank, Mr. Bailey, is still at the same game, so he should know something about it by now. The printing room photograph shows four printing machines, with hand light changing and curved gates; also a title printer. Titles were made on quarter plates and optically printed. When we were in a hurry, the negative was looped from printer to printer to save re-winding; allowance had to be made in the size of the loops for the slightly varying speeds of the machines and the printers had a good many anxious moments when they saw a machine gaining and the loop getting dangerously small.

Titles were set up on a large square sheet of glass covered with black velvet; various types and sizes of letters made of white celluloid were used, and a set square, as seen in the photo, was part of the equipment. A small Westminster enclosed arc was used for exposing on process quarter plates.

You will notice that the various rooms were all built up with match lining! Fancy trying to do it nowadays. But although they were all such poky little holes, some good work was produced in them. "Sixty Years a Queen," "June Shore," "Five Nights," and Lewis Waller's first and only movie appearance, "Brigadier Gerard." (He died very shortly after the picture was finished.

By the way, "Brigadier Gerard" was another of our hustles. It was produced in a very few weeks and at five o'clock on the day following the last takes thousands of feet of negative were lying on a long bench in small rolls, none of which had been printed. Two or three sheets were there leaving; a few, when in walks W.G.B., saying, "I don't want to brighten you boys!" (the boys were L. Eveleigh and myself.) "But Mr. Waller wants to see his picture run tonight after he has finished at the theatre," so at 5.15 p.m. we started, and he saw his picture, about 6,000 feet, just after 11 p.m.

One of the pictures shows the primitive examining, cleaning and joining room, with a glimpse of a drying drum. Just gaze on the naked lights and match boarding and primitive examining bench and then think of your oak benches, opal glass, chromium fittings and gorgeous winders and seats.

Another picture of considerable interest is that of the artist, L. Gandolphi, who was the first to make cine-cartoons in this country. Note the crude construction of his apparatus by comparison with modern ideas. Most of his work was done with cut-out drawn figures, with pin joined limbs. A May camera was used and with the photographic collaboration of L. Eveleigh he turned out two 200 ft. cartoons per week. An automatic deviator had then been thought of, every picture was turned by hand. The camera man was stuck up in an awkward corner near the ceiling and it was a fight for him between concentrating and falling asleep. with the monotonous one, two, one, one, two, two, for hours.

I am sorry I have not a photo of one of our departments which was aptly named "Stink Hole Bay." This was, as you may guess, where we did the sulphide and other toning, and extended, like an old coal-cellar, under the pavement in Soho Square. The toning was done in three huge earthenware rocking dishes which weighed about 1 cwt. each; we found this out when getting them upstairs on removal (we also found about three dozen empty beer bottles under them; lotion to wash the sulphide out of threats, I expect).

The work was not so monotonous for the staff as it is nowadays, as everyone had to be able to turn his or her hand to everything—framing, printing, developing, drumming, staining, toning and joining, as circumstances required, so when you had been at W.G.B.'s for a few years you knew your job right through.

Looking at these photos brings back such a lot of old memories that I could keep on for hours, and I hope that 25 years hence some of you will be looking back to many happy memories as I do.

---

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REVIEW YOUR LONDON. W. 1. PREVIEW FILMS AT THE THEATRE
DOCUMENTARY AT THE CROSS-ROADS

by SIDNEY COLE

I see from John Grierson’s article in the last number of “The Cine-Technician” that documentary, having arrived at a cross-roads, proposes to take the wrong turning. He says that documentary has built up a distribution and an audience of its own; that this audience is more serious-minded than that of the theatres; and it is at such an audience that those who work in the documentary aim.

So far so good. But he goes on to say that because this audience has been built up and can be depended on, that attempts at box office compromise, if not to be deplored, are at their best unimportant, that documentary does its job by reaching its own non-theatrical audience and “educating the citizenry,” or such of it as seems willing to be educated.

This seems to me to be running away from the problem, or from half of it at least; and that half probably the more important. The sponsored film, which is what the documentary film fundamentally is, is excellent in many ways; it has given its directors scope they could not at the moment have in the commercial studios, and has enabled them, within limits, to picturize certain aspects of social problems in an intelligent, adult, and generally acclaimed manner. None would deny, for example, the importance of such films as “Housing Problems,” “The Nutrition Film,” or “Today We Live.”

But the fact that these are sponsored films makes it difficult to get them into the ordinary commercial theatre and the audiences that do see them, although they may be vast, are sponsored audiences. That is to say, non-paying audiences. Now, the attitude of a man who sees a film after paying hard cash for admission to it and that of a man who has paid nothing are fundamentally different. The first is determinedly seeking entertainment, and so demands more, and is more critical. The second is inclined to feel that, whatever he gets, provided it is not boring to the point of somnolence, is a net gain. This is certainly true to the extent that the audience that pays at the cinema box office overlaps with that which from time to time sees the sponsored film.

Consequently it would be a tougher job to put the subject of one of those sponsored films across to the same audience when it was paying for it. The film would need more polish than Grierson feels he would be prepared to give it.

I am not deprecating the value of the documentary. I wish merely to make the point that it is not enough; it tackles, as I have said, only half the problem. The danger in Grierson’s policy is of an intensification of the present unhappy situation in the British film industry (if the industry still exists by the time this is published)—on the one hand, seriously-intentioned films dealing with subjects of social interest, and on the other hand, moving further and farther away, the commercial films dealing with events and people which never were on sea or land, but which, far from being fantastic, are mostly merely nondescript and dull.

This is the second half of the problem, to imbue the studios and distributors with the English idea that fiction films can be made, and made profitably, from the same sort of subject material as that which pure documentary has exploited so well. Moves in this direction have been made, with films such as “TURN OF THE TIDE,” and “EDGE OF THE WORLD.” But it is true to say that although inspiration for these films may in part have derived from the work of the documentaries, the influence was but indirect, and is not likely to be continuous and strong without closer contact than exists at present.

Highbrows used to sneer at Hollywood and its productions, but it is becoming increasingly difficult to do so. Films like “I AM A FUGITIVE FROM A CHAIN GANG”, “FURY”, “BLACK LEGION”, “THEY WON’T FORGET”, “ZOLA”, “PASTEUR”, many of the Cagney films, and many lesser efforts have, despite whatever box-office concessions, a core of integrity and an appreciation of the genuinely dramatic material of real social events and persons. But I have been surprised on occasions to hear some of those working in documentary condemn some such film for its concessions, instead of welcoming and stressing the importance of its approach.

What can be done as a start is for documentary to make studio people see that the material, for example, of “NIGHT MAIL,” is a perfect setting for a melodrama, hokum in story, if you like, but with genuineness in characterization. To gradually lead the studios away from stories either adapted from, and in the tradition of, the west-end farce, or polite comedy. To lend weight and influence to those technicians in the studio who are eager for a drive towards reality. Finally to consider themselves, some of them, plunging the hard row of the studio script censure and the Aryan task of cleaning out the stock characters, the stale situations, the trite dialogue, and the role of the thumb reactions. Help the technician to open the doors of the studio to some real sunlight and no longer live exclusively in the deceitful glare of the sun-war.

* * *

T.U.C. SUMMER SCHOOL

The tenth Trades Union Congress Summer School will be held at Ruskin College, Oxford, from July 9th to 23rd, organised in the form of two self-contained weeks. The T.U.C. General Council are bearing the overhead expenses, and offer places at the School at a cost of 32 6 per head per week, which is the actual cost of board and accommodation.

The subjects to be covered include: Industrial Relations and Negotiations, Workmen’s Compensation, Factory Legislation, Trade Union Administration and Organisation, Work and Policy of the Trades Union Congress, and State Intervention in the control of wages and working conditions.

Students need not hesitate to devote their annual holiday to attending the School. The interest and stimulation of the work, coupled with excursions, sports and other social activities, combine to make the week an outstanding one. Members may obtain full details from the A.C.T. head office.
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EMULSIONS and GRAINS

By ALBERT DYAS

In the manufacture of cinematograph film, the mixture of silver halide gelatine and water, constitutes what is known as emulsion. When fully prepared and finished, it is coated over a flexible transparent base of celluloid and is used either as a negative or a positive, as the case may be.

Both negative and positive emulsions are somewhat similar in their chemical construction, but actually there is a vast amount of difference in the structure of the silver halide. Negative emulsion is made up of larger, irregular grains, faster in speed than the positive. In the slower positive, the grains are smaller and more uniform in size, this having a larger effect on the contrast. To record the correct density of colored objects, the negative emulsion requires correct colour sensitivity. This necessitates the processing of the exposed negative in complete darkness, whereas the positive can be processed in a fair amount of green or red safety light.

Naturally the methods of preparation of various film stocks are very diverse. Each manufacturer has his own particular and complicated formulas, hence the description here is in a simplified form and only the basic operations are described.

The silver halide of a negative emulsion, explained simply, is formed by a mixture of gelatine and potassium bromide in a warm solution, with the addition of silver nitrate. The bromide and gelatine are held together in a solution at an even temperature in a container, of which the inside is coated with silver. The silver nitrate is dissolved in water and heated. When this solution is added to the bromide and gelatine, double decomposition occurs and throws out a milk-like fluid containing the insoluble light sensitive silver bromide, the reaction being:

Silver Nitrate + Potassium Bromide = Silver Bromide + Potassium Nitrate.

The extraction of the soluble salts, namely potassium nitrate, is made after cooling down to a jelly. The emulsion is either cut up into shreds or compressed through holes and thoroughly washed. After washing, it is re-heated, ripened and coated on the celluloid base. An ordinary silver bromide emulsion similar to this would be of little use as a negative, as the sensitivity of pure silver bromide to light is very small. For colour correctness it is only sensitive to the blue rays of the spectrum and is almost insensitive to yellow, green and red.

The preparation of high-speed panchromatic negative emulsions demands a large amount of accuracy in quality and manipulation of its components.

The purity and quality of the gelatine is important, as sensitivity depends upon the particular kind used. Gelatine, which is made from the skins of calves, has natural properties of its own, namely mustard oil, which contains sulphur. With the addition of other organic compounds, the gelatine possesses thiocarbamidies which are active sensitizers to the silver bromide grains.

A fine grain emulsion, with an absence of granularity, is essential. Owing to the enormous enlargement of the positive print to the screen, any clumping of grains would obviously show to a certain extent when the negative is printed, and the absence of detail would be noticeable. The smaller the grains, the lesser the graininess, the more rendering of detail will be possible. The alleviation, as far as possible, of clumping is partly due to the concentration of the solutions and the precise way in which the silver halide is formed. This has a large influence on the grain size characteristics of the emulsion.

By treating the emulsion with sensitizing dyes known as "sensenamines" it is rendered panchromatic. The absorption of these dyes by the silver halide grains has the attributing factor of making the emulsion sensitive as near as possible to all colours of the visible spectrum.

What happens when the emulsion is exposed to light is still a controversial point. It is not known with certainty whether the action of light is of a chemical, electrical or physical nature.

On the surface of the silver halide grains are tiny areas which are the sensitive centres or nuclei which somehow or other are affected by light, and produces invisible specks of metallic silver from which development starts. The other parts which are unaffected merely supply the silver to the nuclei to make possible the building up of the visible image.

After the light action, there is not any apparent visible effect on the emulsion, the light having produced an invisible or latent image. The latent image becomes visible with the aid of a developing solution, which reduces the silver halide compounds to metallic silver. The structure of the developed image depends very much on the developer. Negative developers, being fine grain, break up the grains so much that it bears practically no relation to the original emulsion grains; therefore our resulting negative should be free from granularity.

When the exposed negative is immersed in the developer and the latter has penetrated into the gelatine around the grains, the reduction begins first at the sensitive centres and spreads slowly over the light affected areas. Where the greater intensity of light has registered, there are more deposits of black metallic silver grains, the unexposed parts of the silver halide remaining practically unaffected by the developing action.

When the development is completed, the negative is fixed in a hypo. solution. The silver grains which were not reduced by the developer are dissolved away, leaving only the metallic silver grains, which is our negative image.

When the negative has been washed and dried, and is finally ready, it remains to be printed.

If we examine the negative, wherever light has fallen there remains a black layer of silver grains; the lesser the intensity of light, the smaller will be the deposits. Therefore every conceivable shade of light that has affected the exposed emulsion will be reproduced on the finished negative in the form of small and large deposits of silver grains.

When the negative is finished, the emulsion of the negative is placed into contact with the emulsion side of the positive stock. The amount of light from the printing lamp penetrating into the bromide emulsion of the positive is determined by the deposits of silver grains in the negative, the greatest amount of light getting through where the deposits are least, the least where the negative is darkest. Thus the light and shade of the scene that was photographed will be the same on the positive as originally registered by the negative emulsion.
Colour for Newsreels: Many attempts have been made to introduce colour into the news and magazine reels but the lag in processing, cost, and the bad wearing qualities of the cheaper processes have caused them to be abandoned.

Now that the newsreels have an organisation to deal with matters such as costs of rights to film, and production times, couldn't they adopt a colour process collectively—that is to say, a process using black and white positives which rely on the colour being given to the film through filters operated in the projector?

A number of the reels, as you know, are connected with the major theatre circuits, and it would not cost much for these theatres to be fitted with one colour-projector, which could take a reel of 2,000 ft.

Kinemaolour and Gaumont Chronocrone used black and white positives years ago and obtained very good results. Today, with the improved lenses, negative stock emulsions and precision cinema engineering, the drawbacks of the earlier colour processes are easily overcome.

From the economic position, the cost would be easily met by the theatres and the newsreel companies, many of whom are using plant bought in 1905 patched up into modern use. This apparatus must stand on their books as of no value, after allowing for the usual annual depreciation.

The processing of such a colour system could, I think, use the ordinary printing machines with slight modification. Developing would be done on the automatic machinery now in operation, but of course cameras and projectors would have to be of a new type. The great advantage of such a process would be that black-and-white positives would stand up well in projectors, and there would be no increase in the time taken in processing. On the other hand, negative costs would be slightly higher. Hand cameras may have to be abandoned. Should a double framing be used in the colour film it is quite possible to enlarge the sound track by optical printing so that the film could be run at double speed. If necessary, owing to weather conditions not being suitable for colour films, it should be possible to join black-and-white and colour positives in the same reel, and by notches punched in the side of the film to operate an electro-mechanical device to throw the colour filters out of action, and automatically operate the black-and-white section at the correct speed. Anyhow, this is an idea which, if considered, would be of benefit to the makers of documentary, newsreel and magazine films.

A.C.T. Member Becomes Movietone Executive

Congratulations to Jack Ramsden, A.C.T. member, who has been promoted Production Manager to British Movietone News. Jack has been Movietone cameraman in the North of England for some years, and at the same time covering the principal news events in Ireland. His promotion is a fitting recompense for his "go getting," in the provinces, where up to now his only reward has been the footage from his camera used in the reel, much of which has been obtained without the glamour of London assignments.

His appointment leaves Jack Cotter free to use his camera to cover unusual stories in his own inimitable way.

National News

The postponement of National News has been a great shock to those who think competition is good for all forms of entertainment. For those who joined the staff, it has been a disaster. The plant had been maintained for a further attempt at publication, but as we go to press the camera gear is being offered for sale. So an enterprise which promised so much dies. Our sympathy goes to those who have suffered financial loss.

Without Comment

Looking through a key newsreel technician's diary for 1937 I found that, working in addition to the usual 48 hours per week, he had put in during 12 months, 968 hours overtime, of which he had been allowed 567 hours off duty, so that he had put in 401 hours without pay or any other recompense. Thus this technician has worked 8 weeks 23 hours without pay.
NEW B. & H. FILMOSOUNDS

With the announcement of great improvements throughout the entire line of Filmosounds, Bell & Howell is now producing four standard models of these 16 mm., sound-on-film projectors, one Model 120, two Model 138's, and one Model 130. All embody new features lending greater flexibility, plus the same basic engineering principles that have made past models so successful.

The new 750-watt Filmosound 120-G has an electric rewind, a still-picture clutch, and a reverse gear. The clutch and reverse are invaluable too to those who wish to edit their sound film with the help of the Filmosound. Two speeds, sound and silent, appeal to the market for a universal machine, and the improved amplifier provides 16 watts of undistorted output. This take-up mechanism is cleverly designed to require no changing of belts to run reels of various sizes. This new model is also available with a special amplifier to operate on 25 to 60-cycle alternating current.

The new Model 138-F has had added to it a reverse gear and a still-picture clutch, as well as many minor improvements. The standard eight-inch speaker is regular equipment.

The Filmosound 138-J is the Bell & Howell answer to the demand for an enclosed 138. It is a two-case job, with its projector fully enclosed in a "blimp" case. The second case contains a twelve-inch speaker. The projector provides both clutch and reverse, and may be used for silent as well as sound films. Available in on identical cases. Many models of both the one-case and two-case 138's, operating on 25-cycle current and on 30-volt current.

The very newest of the improved Filmosounds is the 130-D, the powerful 1,000-watt auditorium model. A completely redesigned amplifier is the outstanding new feature of the 130—an amplifier smoothly styled in the modern mode with the popular sloping control panel, and capable of an unusually high output.

With twin speakers the output is as high as 50 watts, but when only one speaker is used, a switch on the amplifier limits a maximum output to 30 watts, so that the single speaker cannot be overloaded. A new microphone input circuit permits the use of a crystal mike in the microphone jack without external matching transformers, and without interfering with the sound from the projected film.

The Filmosound 130-D is available in four combinations, one or two projectors with amplifier, and one or two projectors. When two projectors are used, there is no interruption in long programmes, for as one machine is switched off at the end of a reel, the other is automatically started. Twin speakers mean not only improved sound distribution in large auditoriums, but they also provide an efficient system capable of handling the unusually high output of the new amplifier.

Reading Room and Library

All the trade papers and film publications from American, Indian, and most European film producing countries, may be read by members at the A.C.T. offices, 145 Wardour Street, W.1. Current books on film cinematography may also be borrowed from the same address.

A NEW UNIVERSAL FILM CEMENT

After months of careful research, Bell & Howell has announced a new film cement which is equally effective on both safety and standard film. All 16 mm. and 8 mm. film is of the safety, i.e., acetate base type. Most standard film is on nitrate base, though some is on acetate base). The safety and standard film cements formerly supplied by Bell & Howell are both superseded by the single new cement. It is claimed that the new cement forms splices that are stronger than the film itself.

The new cement is much less subject to deterioration than other types because it will not absorb moisture from the air. It could even stand a 10% addition of water without losing its bonding power, so it would seem that the problem of making permanent, enduring splices is well in hand at last.

Also, the new Bell & Howell product does not dissolve the dye in Kodachrome film, and therefore it can be used with the certainty that there will be no discoloration of Kodachrome film adjacent to the splice. There is no increase in price for the new universal cement.

CATHOLICS—PLEASE NOTE

Petrus Film Productions are anxious to get in touch with Catholic Film Groups or Catholic members of Film Groups with a view to exchanging films and news. Please write Miss Joan Newton, 8, Montpelier Road, W.5.

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THE JOY OF BEING AN EDITOR

Getting out this journal is no picnic.
If we print jokes people say we are silly;
If we don't, they say we are too serious.
If we clip things from other magazine,
We are too lazy to write them ourselves;
If we don't, we are stuck on our own stuff.
If we stick close to the job all day,
We ought to be out hunting up news.
If we do get out and try to hustle,
We ought to be on the job in the office.
If we don't print contributions,
We don't appreciate true genius;
And it we do print them the journal is filled
with junk.
If we make a change in the other fellow's
write-up, we are too critical;
If we don't, we are asleep.
Now, like as not, someone will say
We swiped this from some other journal.
We DID!

OUR INVALIDS

The General Council is glad to report that Mr. George
Elvin, whose serious illness was reported in our last issue,
is now fully recovered and back at the A.C.T. office, or
wherever else business calls him. He has asked us to
say how much he appreciated all the kind wishes, not
to count innumerable pounds of grapes, sent him during
his two months absence.
On the other hand we are sorry to report that Mr.
Reg. Bartlett has, upon doctor's orders, had to resign his
post as organiser. Fourteen months ago he started his
organisational activities, devoting all his energy and time
to the job, and good all-round progress—particularly in
the laboratory section—has been made. His pleasing per-
nality and keen sincerity broke down the opposition of
many non-unionists, who are now among our most loyal
members. Reg. will be deeply missed. It is sincerely
hoped that a lighter occupation will soon see him fully
restored to good health. A.C.T. will not lightly forget his
good work, and the General Council asks members to ap-
preciate the lot of the chief officials of the Association
and realise their sacrifice of health to the Cause. No man
can give more, and we do ask members to help personally
as much as possible, in order to lift as much of the burden
as possible from the shoulders of those still in harness.

FILM-MAKING SINGLE HANDED

A lecture on "Film-Making Single-handed" was
given at the Reimann Studios, on February 14th, by Mr.
Alex Strasser.

After describing the present state of the industry, the
difficulties besetting those without influence who tried
to enter it, and the lack of any system of training or
advancement, he showed how, in the past, such individual
enthusiasts as were able to engage in production made
the simpler short films—cartoon, travel films and other
non-fictional subjects. He enlivened his account with
examples—especially of the dilatoriness of film companies
—from his own experience of making and trying to sell
a cartoon film.

The coming of sound had made single-handed produc-
tion very difficult, but the documentary groups had
carried on the tradition of single-handed individualistic
work. Mr. Strasser paid high tribute especially to the
work of John Grierson in founding the E.M.B. (now
G.P.O.) Film Unit and in training many newcomers to
the industry.

After the lecture, four documentaries were shown
"6.30 Collection", "Line to the Tschierva Hut" and
"Night Mail", all made by the G.P.O., and "Housing
Problems", made by Arthur Elton for the British Com-
mercial Gas Association.

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Recent Publications

THE FILM GAME
By LOW WARREN. Werner Laurie, 10/6

Low Warren is one of the real old-timers of the British film industry, an active participant for over a quarter of a century. He started "The Cinema" with Sam Harris, and later edited "Kiné Weekly" for many years. He has written an entertaining volume of personal reminiscences, and many of the great names of the industry in its early years are mentioned in his pages, often with some anecdote which helps us to appreciate their human qualities.

He has many an amusing story to relate. For example, of the producer nearly driven frantic by a would-be "star" who hadn't the faintest idea of what was required of her. "My dear, do please try and put a little life into your acting," he said to the girl. "Think now, haven't you ever tried to stop a man from kissing you?" "No," was the blank reply.

I liked the story of Sidney Olcott, who was casting for "From Manger to Cross." He went to an agent and stated his requirements. "Where do you want to take these people to?" asked the agent. "To Jerusalem." "Where's that?" "Why, in Palestine," explained Olcott patiently. "And who's going to pay for 'em?" "I am." The agent set to work, and to get the required biblical types advertised for men "with whiskers." The next morning Wardour Street was full of them.

Some of Low Warren's recollections provide striking contrasts with present-day practices. In one of his films the whole of Barnet Fair was hired for half a day for £50! He relates in detail the story of the famous "Nelson" film, which was destroyed in a fire just when it had been completed. Nothing daunted, they re-shot the whole film, and at the Trade Show sold it for £16,000, the highest sum ever paid for a British-made picture!

This is an entertaining book. Not profound or very thought provoking, but easy and pleasant to read.

RALPH BOND

PROMISED LAND
By CEDRIC BELFRAGE. Gollancz, 8/6 net

Horace Henderson Wilcox, crusader against the rum demon, and cobbler by profession, discovered Hollywood in 1887. Promised Land here picks up the story and races along till the present day telling, in a novel with a great deal of fact, the history of the city and giving due place, of course, to the industry with which it is closely associated. As an historical document the book will interest film technicians. But it is much more than that. It tells of the exploitation of Hollywood, in which paper fortunes rose and fell—"a goddamned insane asylum with a million inmates all believing they could eat pieces of old paper." Film workers must read this book. It will make them think. It may make them better trade unionists, as the author does a couple of his characters. Readers may disagree with the lesson Mr. Belfrage sets himself to preach, but they will surely thank him for writing a film book that is different—one of social significance that does not epitomise the industry as a make-believe world focusing its sole attention on the Harold Darewells and Norma Lovelips of the screen.

G. H. ELVIN

SOUND RECORDING FOR FILMS
By W. F. ELLIOTT. Pitman, 10/6 net

Though sound has been established in the film industry as a commercial possibility for some ten years and has reached the remarkable stage of fidelity it now holds, there is still very little literature available on the subject, and when a new book such as Mr. Elliott's comes on the market, every sound engineer looks eagerly for it. This book deals mainly with what may be called "the aesthetic technique" of sound recording for the first time. A few years ago there were various schools of thought, there still are to-day, but the differences are only small. Mr. Elliott gives us his line of thought, and though we might not agree with him in every detail, we shall find his exposition of "Sound Perspective" very clear and very instructive.

Mr. Elliott states in his preface that this book is not an explanation of technical detail, but a study of what I have called "Aesthetic Technique." I have examined the book from two points of view—from my own as an engineer of ten years as a film recordist, and from the view of an assistant engineer, who has been in the "racket" for only one year. In this latter respect I asked Mr. A. Simpson to help me. His view was that the first four chapters on the growth of Sound Recording, Sound Photography, the Script and Studio Routine, were helpful to him, but that several points were left incomplete. For example, in the treatment of background noise the method of elimination was not sufficiently described; again, the question of the correct reverberation period of the studio, the method of reducing the re-action from hard flats and so on, left him rather in the air. The chapters on Sound Perspective would be more useful to him when his experience extended to mixing.

From my own point of view, I would say that the chapter on the development of tracks is unnecessary. Correct development is very essential, but Mr. Elliott does not describe in detail which methods the engineer should employ to get the correct exposure on the track for the required gamma—his part of the business—while describing in too much detail the chemical processes.

I do not agree entirely with his idea of "Volume Compression" in recording music, in which he states that the gain control should be set on the loudest passage—and left. A certain amount of "knob twisting" is necessary, and is surely quicker than arguments with the Musical Director, whilst the actual volume is not always the same from take to take. The complete range from pianissimo to fortissimo can still be maintained with judicious use of the gain control. But this is probably just a matter of opinion.

Filter circuits are very necessary in re-recording and in direct recording also, provided the complete perspective is held in view, and Mr. Elliott could have enlarged on these, because filter circuits do help in "Aesthetic Technique."

During the last few years, there has been an enormous growth in the practice of synchronising the picture to a sound track already recorded, and whilst this allows the recordist to obtain a first-class track, there is a very great danger of long shot and close-up sound being the

(Continued on page 327)
Technical Abstracts

Some Lighting Problems in Colour Cinematography

—WHY NOT LET US KNOW WHAT IT IS?
T. T. Baker.

In additive processes the primaries are generally blue-violet, green, and orange spectral bands, which are not narrow and which overlap to some extent. The exposure latitude of a colour-screen process is less than that of black-and-white negative stock. Under-exposures often tend towards excessive blue, and over-exposures toward some other predominant colour, due in some measure to differences in the foot and shoulder of the characteristic curves of the emulsion when exposed to the three primary bands.

Over-exposure results in dilution of the colours due to invasion of each primary into its neighbour’s territory. There is thus a colour-saturation latitude in the screen or matrix, distinct from the true emulsion latitude. The object here is to discuss a method of calculating the approximate range of studio light-intensity that will preserve the best colour balance of which any particular additive process may be capable.

For Dufaycolor film, a wedge spectrogram of suitable steepness is made representing average exposure, such as from a density of 0 to 2.5. Upon development and reversal, the peaks throughout the wedge spectrum are shown as completely saturated (i.e., 100 per cent of the reseau or matrix saturation). But as any spectral zone is followed downward from the peak, the colour becomes diluted and may become even white as the image approaches the base line, and, therefore, maximum exposure.

This is caused by the fact that, upon over-exposure, scattering carries the light behind (say) a green element into the region of neighbouring blue and red elements, so that the resulting colour is reseau-green plus some blue and red, or reseau-green plus white. The effect is accentuated in reseau composed of less saturated colour elements. By measuring from the peak to the position on any ordinate where distinct dilution becomes apparent, the permissible range of light intensity on the set can be computed from the difference of the log opacities of the two points on the ordinate.

(Journal of the Society of Motion Picture Engineers)

Development and Resolving Power of Photographic Negatives


Using both microscopic examination of the negative and enlargement in a special optical system as means of measurement, resolution was found to increase with exposure, reach a maximum value, and then decrease. One orthochromatic and three panchromatic emulsions were compared in the following developers: (1) a typical dion formula; (2) dion-hydroquinone; (3) the “14-2” buffered borax; (4) an M-Q formula containing thiosulphate; (5) an dion-glycin-PD; and (6) an dion-PD-phosphate. Tables show the differences in resolving power obtained with variations in exposure and development, contrast, emulsion speeds, and resolving power. The buffered borax developer was found to give both maximum emulsion speed and highest resolving power, but yielded to low contrast for the aerial work under consideration.

(R.W.H.

(Bulletin issued by Kodak Research Laboratories)

Production of Fine-Grain Images by Development Followed by Intensification


Ordinary intensification enlarges the grains, and hence is not suitable for fine-grain work. Intensification by dyeing, which consists in the fixing to the grain of a dark dye, does not possess this drawback. “Chromorezeugateur Luminac”, which is composed of a mixture of red, blue and yellow in proportions that yield an almost neutral tint, is suggested for the purpose. The silver image must first be transformed superficially into silver thiocyanate-cuprous thiocyanate by treatment with a copper sulphate-ammonium thiocyanate solution. The intensification may be applied to images of very fine grain, but too low in density and contrast to be suitable for enlarging. An amino-naphthal sulphonic acid (1,2,4)—trisodium phosphate developer is recommended for the initial development. The results obtained by intensification are comparable in graininess to those obtained with the best available fine-grain developers, and possess the advantage of having better detail in the low exposure parts and better gradation.—T.H.J.

(Bulletin issued by Kodak Research Laboratories)

Standard Nomenclature for Release Print Sound Tracks

As a further step in the programme of co-ordination between studio and theatre, the Research Council of the Academy of Motion Picture Arts and Sciences recently undertook to standardise the nomenclature for release print sound tracks, particularly as developments in sound recording equipment and technique have recently led to the appearance in the theatre field of a number of various new and different types of sound track. The Standard Nomenclature for Release Print Sound Tracks follows, with examples of each type included.

(Research Council Academy of Motion Picture Arts and Sciences)

A New Reel-End Alarm


Kodak Bulletin
TECHNICAL ABSTRACTS—contd. from p. 224

Phonorhythmie. New Dubbing

Karl Robert Blum, of Blum & Co., GmbH, Friedrichstrasse 22, Berlin SW 6, has developed a process called "phonorhythmie" by which it is possible to produce sound films in any number of languages using only one sound strip.

In this new process, sound and picture are shot separately. The text for all languages is recorded before the shooting of the pictures begins and the pictures are then synchronised (by a special procedure) with the sound film. The sound is recorded in two parts, one strip for the music and noises and one for the language. These strips are then mixed and copied on the picture strip.

The inventor claims that by this method it will be easy to replace a good singer who is a poor actor by a good actor, recording only the singer's voice.

It is also claimed that, by this method, costs may be reduced by 25 to 30 per cent., through saving in materials, time and employment over the usual dubbing methods.

So far only short films produced by this method have been shown privately in Germany. A long feature film, however, is in preparation which is intended to be produced in 11 languages.

The process is fully covered by German and foreign patents.

Separate Tracks for Six Orchestra Units

In recording the orchestral music of "One Hundred Men and a Girl", for which Leopold Stokowski conducted, Universal carried the multiple channel method somewhat farther than heretofore in motion picture sound, employing a separate track for each of six instrumental divisions of the orchestra—violin, woodwind, brass, 'cello and bass, harp, and percussion.

The original recordings were made at the Academy of Music in Philadelphia, using R.C.A. ultra-violet, push-pull equipment. In mixing the six tracks, Stokowski himself "conducted" at the control panel. "The reproductions are superior to the original recordings from which they are taken", he is reported to have said.

--- Motion Picture Herald

N. B.—Nearly four years ago B.I.P. used a three channel recording for the music of "Invitation to the Waltz," using brass, 'cello, bass, and percussion on the first, strings, woodwind and harp on the second, and solo voice on the third, all sufficiently blanked off from each other for the voice to be practically inaudible on the orchestral tracks. The sound department even went one further than this, for the voice track was discovered to have a slight defect and was post-synced separately without having to recall the orchestra.

Transposition of Speech Sounds

F. Bánényi, J. Acoustical Soc. Amer., 8: 217-19, April, 1937. Transposition of speech sounds was studied by rotating gramophone records at various speeds. The author studied the intelligibility of spoken words when the vocal chambers were filled with hydrogen instead of with air. The presence of a hydrogen atmosphere raised the pitch 1 to 2 octaves, but did not, of course, alter the duration of the sounds. A reduction in intelligibility of about 25 per cent. was noticed.

--- Kodak Bulletin

Push-Pull Recording

With five studios already using push-pull recording, and with all others signifying an immediate practical interest in it, general adoption of this method by Hollywood producers as a means of attaining finer sound quality in the standard single sound track is indicated at an early date.

Such use of push-pull—merely to produce the two balanced tracks for dubbing a single track on the secondary master from which the release prints are produced—is today regarded as the only one likely to be made of the method, since few theatre sound systems are capable of handling two tracks, and the cost of effectively adapting the remainder scarcely would be warranted. It is pointed out, by the amount of improvement the change in theatre apparatus would achieve.

Adaptation of recording equipment to push-pull, however, is relatively simple, and its use has so far reduced the noise constant to a value representing a total gain of three decibels, or enough to be readily appreciated by the average person, in the effective volume range. In the continual quest for the reduction of noise level, so that the limit of usable sound may extend closer to the limit of audibility in reality, every decibel gained is regarded by studio technicians as worthwhile if attainable at a reasonable cost.

--- Motion Picture Herald

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Let us now sobloquise . . . . Hats off! there goes one poor British Film Industry . . . . It is a sad loss, but they say it is better that she went that way . . . . Oh! Mr. Stan . . . . what have you done?

I am the only adviser: on films to the Lord Chief Justice

Douglas Shearer speaks: "Because light travels faster than sound, the sound track must be 20 frames ahead of the picture to be in sync" . . . Cinema Art, Nov. 37. (English Editors and Cutters please copy). And so now you see, it all goes to prove how wonderful science is. Now crowd round kiddies, and I'll tell you just how the Big Bad Wolf of Blenheim nearly raped the Hollywood . . . .

(In the interests of public health the Editorial Committee have asked me to refrain from telling the rest of my powerful story).

Pog Lifts

This comes to you by way of being lifted from Reynolds News (21/10/37). . . . "Film Studio as Spy Headquarters," says poster. Somebody discovered a plot. A brief glance at it, however, showed that it was an old one, so they gave it back to the author and withdrew.

And this is one from "Timothy Sky" in News-Chronicle (29/11/37): "There was a temporary hold-up the other day, we hear, at Denham, where the Robert Taylor film of typical Oxford life is being shot. What caused the hitch was that the various experts engaged in producing this British film couldn't decide whether a cricket ball is blown up or not, before the game.

Overheard from a book (Ethel Mannin, I think). Film Executive: I think we'll make a film of the "Well of Loneliness."

Adviser: You can't do that, the Censor wouldn't pass it.

Film Exec.: Why not?

Adviser: Well, it's about Lesbians.

Film Exec.: Alright then, we'll make 'em Austrians.

Mr. O.S. whose big baby are you?

Pog Surveys the World

U.S.A . . . . . Have just discovered that films, trade agreements and diplomatic channels mix . . . . all for the sake of Oil. And I don't mean Camera Oil.

Germany . . . . Insisting that they have Colonies, so they can send films to them, for without them they can't send them, and them can't receive them, so them's that.

Italy . . . . . Nero has taken to harping . . . . Must have heard all about the flowery fields.

India . . . . . Importing English Technicians . . . . at least in theory.

Scilly Isles . . . . Just Nerts.

Pog Presents the Government with a New Quota Scheme

It is extremely unfortunate that I haven't been asked to speak on the subject of the British Quota Act and its meaning to the Home and Icelandic Markets. I can only assume that the various other powers that are pulling the various other chains on the British Film Industry, are jealous of my superior knowledge and of my check capacity. (That has all the car-marks of a dirty dig.)

My scheme in short is this . . . . That we all go over to America and start a Quota there, as you know there is no opposition in this field, and the beauty of my scheme is this . . . . when English films come over, that have been made by American stars and technicians, we refuse to count them as American films on the grounds that the Clapper boy was English. This will make the Americans so mad that they will be forced to import English technicians to Hollywood so as to get even with us and to meet what they will consider unfair competition . . . . And so you see Hollywood will be ours for the sake of asking . . . .

Asking who? Asking Mr. Oliver Stanley of course . . . . oh! I see.

There is no slump . . . . (tell him, someone)

Pog Explains Reciprocity

There has been a great deal of misunderstanding about what reciprocity really means, so I intend to clear it up for good.
RECENT PUBLICATIONS

(Classified from page 225)

same quality. This is a matter of sound perspective, and Mr. Elliott has written some extremely valuable matter on this subject. His chapters on dubbing and post-synchronising are very well done.

With the exception of the few criticisms I have mentioned, "Sound Recording for Films" is a very helpful book. If it does nothing else, it shows that the recordist is not merely a technician, but an artist as well. He must use as much imagination and forethought, and be as much an artist, as the man who lights the sets. The film industry to-day would be in a healthier position if executives and directors treated the recordist as an artist and not so much as a "knob-twister," and to this end I would recommend Mr. Elliott's book to producers and directors, as much as to recordists.

G. H. NEWBERRY, A.C.G.I., B.Sc., D.I.C.

E.J. PHOTOGRAPHIC ALMANAC, 1938

2s. (paper) and 3s. (cloth). Henry Greenwood & Co. Ltd.

The three essentials of photography are camera, sensitised materials and the B. J. Almanac, and if anyone cares to change the order and put the Almanac first I shall be the last to quarrel about that.

The fancies might add that the photographer should be included among the essentials, and that would immediately give me the opportunity of replying that that depended entirely upon how much he had assimilated of the book under review.

In this 1938 issue, as in all previous ones, the publishers are entitled to a mark of recognition for the "Epitome of Progress" alone, which in itself contains sufficient information to fill any normal text book, in addition to which it keeps the reader posted with the "up to the minute" activities of all the creative and inventive technical brains of the profession.

To dwell upon all sections covered would take me beyond the space allotted, but considerable credit is due to the editor—Arthur J. Dulladay, a J.P.—for his selection and arrangement of the text, including 64 excellently reproduced gravure plates, formulae of practically every known process of photography, general information, and many useful tables, chemical, physical and optical.

It is just one of those books that the photographer cannot afford to be without, and if it isn't on your bookshelf I would suggest either you throw your bookshelf away or put the B.J. Almanac on it.

COLLINGBURN

"Service" is the title of Western Electric's new publicity publication. Every copy—at least our's was—is inscribed with the name of the recipient and typifies the hundred per cent efficiency claimed by the company. The importance of good sound is stressed and we are, of course, given details of the specific advantages and services rendered to the exhibitor by this company, who equip and service more than 2,000 theatres in Great Britain alone. This admirable publication should retain the enthusiasm of these exhibitors while at the same time helping to swell their number. The booklet confines itself to the full story of Western Electric and its importance to exhibitors. Perhaps a later publication may deal with recording equipment and the producer.

G. H. E.