"BETTER PROJECTION"

I—FILM CARE

The first of a series of lectures prepared by the Theatre Division Committee of the British Kinematograph Society, for presentation, through the branches of the Cinematograph Exhibitors' Association, to projectionists throughout Great Britain.

NOTES TO LECTURER

Before presenting this lecture, please read it carefully, be sure that every point is clear, and that you are prepared to answer any questions on it.

You should have a blackboard, on which the following and other points may usefully be written or illustrated by sketches :

Vee-cutting a film.
Waxed film.
7 rules of joining.
Composition of film cement.
Method of blooping.

At the end of the lecture, invite questions, and give an opportunity for discussion.

The Theatre Division Committee will be pleased to receive your views and those of your audiences, on this lecture.

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FILM CARE

FIRST let me explain why the British Kinematograph Society is sponsoring these lectures on projection topics. The B.K.S. is purely a technical body, and its membership consists of technicians in every branch of the film industry. But its ultimate aim really is to raise the standard of entertainment which we offer our patrons.

In the raising of this standard, the projectionist plays a vital part ; he has been described as the bottle-neck through which all the output of London's and Hollywood's studios reaches the public. All the entertainment value and showmanship put into a film will be wasted unless the projectionist is himself a showman, as well as a technician. He has the difficult task of keeping up this standard of showmanship from day to day and from month to month.

This first lecture deals with the care of films, because the condition of your films is the first essential to putting over a good show.

Every week, or two or three times a week, the film transport dumps at your kinema a few transit cases containing the week's programmes. There are three ways of regarding these films : to the worker in the studio, a few reels of film represent his work and sweat over a period of months ; to the projectionist they're simply a few reels of celluloid, possibly a bit the worse for wear, packed probably in battered old tins crammed into a galvanised case that bears the traces of much handling and mishandling. But to the picture-goer, they represent a few hours of escape from the monotony of everyday worries and routine—his only relaxation from arduous duties in factory or Forces.

Now, it's the picturegoer who pays your salary and mine ; in return, he has the right to expect a faultlessly shown programme—a programme shown so perfectly that he can lose himself in the pictures and forget their mechanical origin. In other words, he has the right to demand *showmanship*.

Showmanship, as far as the projectionist is concerned, depends first upon one thing : the condition of the films. If a film is scratched or has strained perforations, if the joins give way, if every changeover is preceded by noughts and crosses on the screen, then the patron's attention is immediately recalled to the mechanical nature of the show, and the performance is entirely spoilt.

There's another point about this question of film condition. If a projectionist receives a copy in bad condition, then if he's conscientious he may have to spend hours putting it into a fit state to show. Therefore, all the time the films are in your possession, think of the next fellow—the fellow who's going to run the film after you : make sure the film leaves you in at least as good condition as you received it.

Let's consider what every projectionist can do to keep his films in good condition, and so put over a perfect show—and remember the old saying : " He who helps himself helps others ! "

Your first precaution comes when you take the films out of their transit cases. Are the tins bent and buckled ? If so, they may have caused damage to the films. Inspect the edges of the reels before you rewind them. If the floor of the transit case is covered with scraps of film and bits of paper, clean it out so that it will be ready to send the films away in.

It's most important that the rewind room should be kept scrupulously clean and absolutely tidy. This rule should be strictly enforced, and cleaning carried out constantly. The girls who examine film in the laboratories always wear white cotton gloves, so the least you can do is to see that your hands are clean before handling film. Be careful how you handle it ; long fingernails can cause quite a lot of scratching.

The good projectionist realises the importance of examining every foot of film before showing it. No matter how good the condition of the film may appear, always rewind it for a thorough examination.

Glance through the leader and see that it's complete. There should be first 8 to 10 ft. of blank film (simply to protect the reel), then a few frames with the title and reel number. Next comes a line across the film with a white diamond on it, and, twenty frames away, a frame marked START. When you thread up, your START frame goes in the aperture of the picture gate and the diamond in the sound head ; if there should be anything cut out between these points, your sound will be out of sync., and your loops will look wrong. In case you have to thread up without a leader, memorise the size of the loops.

Then come the footage numbers, from 11 down to 3, each again with its diamond 20 frames away, so that you can always check synchronism before starting to show a reel.

I hope you all understand the purpose of these footage numbers. Different projectors take different times to get up speed, and in the change-over the film must always be up to speed by the time the picture is reached. Find out the *change-over footage* of your projectors—that is, the number of feet of film they take to get up to speed—and after threading the START mark and the diamond correctly, run the film down until you come to this footage number on the leader, then you're ready for the change-over.

After the figure 3 there comes 3 ft. of black spacing ; the idea of this is that if you should happen to change over a bit too soon, you won't get a white screen. Again, if this part of the leader has been cut, the incoming projector may not be up to speed by the time the change-over dots arrive. So if there is a join anywhere in the leader, check up these footages.

This may have seemed rather a lot of talk about a simple thing like a leader ; but the leader is an important part of the film if you are going to be sure of correct, invisible, change-overs.

Rewinding is a routine job, carried out at frequent intervals every day, and it's a process in which film can easily be damaged through carelessness—the contempt bred of familiarity. First make sure that the rewinder heads are mounted on the bench correctly aligned, or the film will be fed on

to the take-up with the edges scraping against the cheeks of the spool.

Don't rewind at high speed. The rewind boy has one pleasure in life : he loves to break last week's record for the double reel ; it may be good for his muscles, but it's very bad for the film—don't do it ! You may well damage the film, and anyway you won't be able to give that close inspection necessary to discover damage in time to stop it before it becomes serious. Film should be rewound at a maximum speed of five minutes per thousand feet, and slowed down towards the end to prevent strain on the take-off reel, and to prevent the protective leader flapping against the rewind bench. An uneven rate of turning the handle also tends to cause film damage.

So rewind slowly and carefully, guiding the edges of the film between finger and thumb with an even and slight pressure which won't cup the film to any considerable extent, making sure that the film edges are not scraping against either or both spool cheeks. But of course, *never* handle the surface of the film, or you'll scratch and dirty it.

Inspection should be carried out carefully, and each join examined every time the particular reel is rewound. Examine the corners and see they are firmly stuck :—see that the perforations match up, and that the join is properly scraped.

If you find a tear, cut it out and make a join, wasting as little film as possible. A common way of overcoming a tear running into the perforations is to " vee-cut " the edge of the film—to cut neatly from the edge into the perforation. Ninety-nine times out of a hundred, a vee'd film will pass through the projector quite safely ; the hundredth time it will catch, possibly at the top of the gate, and the film will rip in half. So never vee a film unless you absolutely haven't time to make a join, and on no account vee more than one perforation.

When there are no joins to be examined, stop two or three times just the same to examine the film for any signs of damage. Don't leave slack film between the rewinder heads, and then take it up with a jerk. Don't hold the feed reel stationary while winding the driving end in order to tighten a loosely wound reel. Both these practices cause the film layers to slide on each other, or " cinch," and thereby cause scratching on both sides of the film, especially if it's oily and has picked up some dirt and dust. Always stop both reels together and carefully take up any slack film. Lastly, tuck in the leader ends between the film roll and the spool cheek to save flapping or trailing on the floor.

Another important point : make sure that the spool on which you are winding the film isn't buckled ; if it is, straighten it if possible—if you can't, scrap it. Buckled spools are a constant source of danger, and should not be used even in these hard times. A bent spool may turn over the perforations where the edge of the film has been gripped by the spool cheek.

When spooling-up, don't attempt to deal with a reel having a large centre by letting it flop about on the hub of a spooling plate or rewinder spindle, This places an uneven tension on the reel, and damages the end of the film. as well as causing intermittent scratching known as *jerk scratches*, A suitable

core should be used when dealing with a large centre. Any other method will scratch the layers of film, and spread any dirt and dust deposited thereon.

If the film is new or "green," it may need a lubricant to ensure easy passage through the projector gate, and avoid emulsion pick-up. Many rewind rooms have a waxer, a machine which feeds the film through rollers into channels where sticks of wax are pushed down under pressure on the perforation margins, leaving a lubricated edge. The waxer should be kept scrupulously clean (an important point, because the wax attracts dust) and all rollers kept free-running and with no flats. The pressure applied by the weight provided does not need any addition, for over-waxing can cause serious film damage.

Film that has been waxed by the renters doesn't of course need waxing again. You can generally tell whether a green print has been waxed : examine the centre line of the perforations : if you can see a narrow shiny line, that is the wax. Some projectionists who have no waxer lubricate new film by criss-crossing the reel with a cloth having a small quantity of vaseline. This practice cannot be recommended, and should only be used in cases of real emergency. In any case, *never* use oil instead of vaseline, as it quickly works itself on to the picture and sound track.

If you make a report on the programme—a thing every projectionist should do—now is the time to do it, not after the film has been run. Report the general condition of the film in detail ; "Scratched and oily" is not good enough. Give details of whether the perforations are strained or torn. whether the joins are sound, and if the film is scratched or "roped," describe the position and type of scratch.

Cleaning film is rather a risky job, and it's not really the responsibility of the projectionist. A small area can be cleaned fairly easily if extreme care is taken, but it's difficult to clean any considerable amount of film without leaving streaks, "bloom," and minute scratches. If you find it absolutely necessary to clean some film, never use methylated spirit or petrol, always Carbon Tetrachloride, or C.T.C. (sold commercially as Thawpit). A series of soft clean cloth pads is required, as each must be replaced after a few feet of film have been gently cleaned.

Most of you I expect make a practice of doubling-up the reels of the features. When you cut off the heads and tails, be sure not to get them mixed up ; put them carefully by in their proper tins, so that you can replace them on the right reels at the end of the week.

Never overload a spool. This practice can cause considerable damage to the film through layers slipping over the edge, and getting damaged in various ways. When spooling-up, it sometimes happens that the last few turns of the film tighten up, and under the strain of pressure from the driving end, damage is caused. If this occurs, always stop and slowly feed back, when the turns will automatically loosen themselves.

Next we come to joining. Every kinema should have a joining press ;

the use of a press ensures correct registration of perforations, and clean cutting and scraping. But there's one important point: most presses don't give enough pressure to get rid of air bubbles, so always, before the cement is dry, lift up the pressure block, rub out the air bubbles, and press the joins firmly together.

But most kinemas don't own a press. Hand joining is a very simple matter; yet one sees hosts of very crudely made joins. There are seven simple rules for hand joining:

1. *Cut in rack*—obvious, but sometimes neglected.
2. *Scrape thoroughly* but not so deeply as to weaken the base; cement won't stick emulsion.
3. *Scrape accurately* to a straight-edge—a badly scraped join may show a flash on the screen.
4. *Register the perforations accurately*—if you don't the film may run off a sprocket.
5. *Use enough cement, but not too much*—too much cement will make the film cockle and sooner or later the join will give way.
6. *Get the ends together immediately*—if you let the surface of the cement dry, the join will be weakened.
7. *Apply ample pressure* to ensure the two ends sticking and to remove air bubbles, which will weaken the join.

If you watch a girl in a laboratory or a renter's examination room making a join by hand, you'll find she doesn't hold the films up in the air to register them; she registers them first on the bench, then carefully lifts up one side of the upper film and puts cement on both films; then, holding this side of the film down, she lifts the other side and applies cement to that. This method is worth practising.

If you haven't a joining press, you should at least have a piece of glass, or a white tile, on your rewinding bench, and a sharp scraper and a straight-edge; and don't forget clean blotting-paper for removing excess cement.

Your cement bottle should have a well-fitting cork, with the brush sticking through it; always keep the bottle firmly corked, otherwise the cement will evaporate, and you will never get a firm join. It's also wise to see that the base of the bottle is so held that it cannot be knocked over—accidents will happen.

Every projectionist should know what film cement is made of; the recipe for film cement in normal times is:

Three parts Acetone.
Four parts Amyl Acetate.

During war-time, a substitute for Amyl Acetate is Butyl Acetate, but film cement can only be purchased in made-up form.

If you should run non-flam. film—for instance, Dufaycolor, or any 16mm. film—you will find this cement won't "bite." A special film cement is required, which should be used sparingly, as too much will eat into the base and result in a soft join. But remember, this rusts your tools very quickly, so wipe everything after use.

Some people like their cement a bit thicker, and dissolve a few chips of film base in it. This certainly makes a better join, but the cement dries more quickly, so you must work more slickly in joining.

A thing often neglected these days is *blooping*. When a join goes through the sound head, you can often hear a slight plop in the speakers. To avoid this, paint very carefully over the join, just on the sound track, a neat wedge, using the special black ink. But it must be done neatly—a wedge with ragged edges is worse than useless.

Having made your join, wind through to the end of the reel, and have a look at the change-over dots. Every new print should have four neat little black dots, with white rings round them (which may be hardly visible on a light scene), in the top right-hand corner of the frame, for the motor cue, and, 11 ft. on, four more for the "over" cue. Check up to make sure they are clear. But whatever you do, *don't* disfigure the film by scratching out big circles or crosses, or other designs, as some so-called projectionists are fond of doing. Of course, if you're particularly anxious that everybody in the audience should see and admire the change-over, the office punch is a useful weapon ; but the whole point is that your audience isn't interested in change-overs, and should be entirely unconscious of them. That's the reason why the present cue dots were started—they're quite unnoticed by the audience, but quite clearly seen by the projectionist.

If change-over cue dots are missing, these can easily be neatly replaced by small imitations, made with the ink used for blooping. Alternatively, a cue sheet can be prepared using either action or sound cues.

Eighteen frames from the "over" dots should come 3 ft. of black spacing, and then the title of the film and the reel number. When you remove this tail or run-out for doubling up, do be certain it doesn't get lost, or mixed up with bits of other films. The next projectionist who gets that copy might prefer to run single reels, or more probably, may wish to double up different pairs of reels to suit his programme, and then he'll want the leaders and run-outs that you've cut off.

When the programme is all checked and spooled up, you're ready for showing. After you've run each double reel, don't just rewind it hurriedly, and put it back in the storage cabinet ; always examine it again every time you show it, just in case any damage should have occurred to it on your projector. This is the only way to be reasonably certain of every show going over perfectly.

Finally, when change day arrives, think again of the next man who's going to run your films. As you spool them off, give them a good examination. Join the heads and tails back neatly, making quite sure you haven't got the reels mixed up. If the heads and tails should get on to the wrong reels, the next fellow's going to have a sticky time trying to discover which reel is which. We know that all these things should in theory be checked up by the renters between bookings ; but renters are pretty short-staffed these days, and prints don't get examined as often as they should.

Don't spool off on to a split spool unless it's absolutely necessary. The standard size of film core is two inches in diameter, so if you must use split spools, be sure the core is this size, and not three-quarters of an inch or so, as most of them are. If a film is wound on to too small a core, the first foot or so always gets damaged and buckled.

Make sure your spooling-off plate is clean, and not distorted in shape, or with a roughened surface. See that the film is fed evenly on to the plate, without the film scraping on the plate edge, and without leaving any proud edges of film. If after plating-off there should be a few turns sticking out, don't on any account knock them into place, for this will cause scratches across the film which may not show much on the picture, but will certainly be heard in the sound.

Never put a reel of film with proud edges into a tin and force on the lid. This practice will turn over the film edges, and will split the perforation walls.

Make sure that every reel goes into the right tin, and that the tins are in reasonably good condition, so that the film won't get damaged in transit. A few minutes' work with a pair of pliers can do a lot to improve the condition of a tin. Make sure too that the tins fit into the transit case without having room to rattle about ; if there are seven tins to go into an eight-tin case, pack the tins in with paper pads, otherwise the films may break loose and probably get badly damaged.

Now all these things we've discussed are in themselves quite small points. But if every projectionist bore them constantly in mind, the projectionist's job would be made much easier, and, what's more important, your audiences would see a better show.

Lastly, remember that even though the projectionist is stuck away in his box, unseen by the customers, he's got to be a showman—he's got to put over a perfect show all day and every day.
