Discussion of G. L. Stair's Paper

Mr. Richardson: The paper is valuable in its way. It tells us what we are doing, but we already pretty well know that. I am disappointed in that more of the errors and their remedies have not been dealt with. There is in my opinion more abuse in theatre lighting from the projection view point, than perhaps any other one thing in the entire industry, and these abuses which are working intolerable injury to the photoplay on the screen have not been mentioned at all in Mr. Stair's paper. It is not necessary to go to the small theatres to discover error in auditorium lighting. You will find it in the biggest and best theatres in the United States. In fact you will find it in its very worst possible form in some of the best theatres. Side lights in objectionable form have been very largely educated out of existence in the large theatres, but they still exist in hundreds, if not thousands, of small theatres. Such lights are a plain, unadulterated outrage on common sense.

In the large theatres they still have orchestra music lighting which is also a crime against common sense. We have men building photoplay palaces which cost anywhere from a quarter of a million to a million dollars and have orchestras of anywhere from twenty to forty, or even fifty musicians, right up against the screen, with, to all intents and purposes, open music stands and with high power incandescent lights glaring down upon white sheet music which reflects the light to the screen, or to light surroundings which re-reflect light back to the screen, with the result that the contrast of the picture is greatly injured or utterly ruined. In my work among projectionists one of the greatest defects I have to encounter is the fact that projectionists in big theatres are discouraged by this very thing. No longer ago than a month I went up to the projection room of one of the big Broadway theatres in New York City to speak to the projectionist with regard to a fault in his work. He listened to my criticism and then said: "Look here, Richardson, why in the name of God should I try to put high class work on that thing down there," and he pointed to the screen, on the bottom half of which shadows were not shadows but merely a great smudge due to the light reflected from sheet music.

I talked to the theatre manager and he says: "Well, I will turn the music stands around," but he doesn't seem to understand that when he turns them around the light will still strike the sheet music and be reflected back to the light screen surroundings and will then be re-reflected back to the screen, so that he has merely ameliorated the condition a little.

I do believe this society is badly in need of a paper pointing out the faults in theatre lighting from the projection point of view. I grant you that the general lighting of theatre auditoriums has been enormously improved during the past few years and is really coming down to something like common sense, but the orchestra pit lighting still is, particularly in large theaters, terrible. Many of the small theatres still have side lights in objectionable form and we have the over-bright exit lights often located close to the screen.

The paper is valuable but it hasn't pointed out the very worst crimes we commit in theatre lighting and their remedies, and when I say "crimes" I mean exactly that, for not only are these things a crime against the photoplay, but against the eye-sight of the audiences as well.

Mr. L. C. Porter: Along the point Mr. Richardson has brought out, about the lighting of music, I had occasion some time ago to study that a little bit. It is a very difficult problem, to find any means of lighting music so that it will not either reflect onto the screen or be an eye-sore for the audience.

We carried on some experiments at Woolsey Hall, at Yale University, in one case where we used projectors, really spot-lights, from above, about 70 feet above where the orchestra was playing, and projected a small light down unto each piece of music, and had the music turned at such an angle that the audience could not see it. That was fairly effective, certainly a large improvement over having individual lights on each sheet of music.

There was still, however, some diffusion of light, and we tried to get away from that by having photostat copies of the music made, so that the notes were in white and the sheet in brown. That reduced it somewhat.

I think, however, that deserves close study, and if someone can find a means of accomplishing the result by using translucent music or something of that sort, there will be a commercial field which will be well worth the endeavor and expense put into it.

Mr. Egeler: The two previous speakers have called attention to points of probable faults in theatre lighting which exist.

I think that the fact that these apparent faults in lighting exist calls attention to the necessity for much greater cooperation between those who design the projection system and those who design the lighting, and those who design the theatre.

The lighting system in the theater has two principal functions; the first is to furnish that utilitarian lighting which is necessary to enable the audience to see their way about the theatre, during the projection of films, before and after the performance; and the second during intermission, to furnish pleasing effects. It is my personal impression that the stress which has been laid upon theater lighting has been more to get lighting systems which will give beautiful lighting effects and the actual lighting purposes of the system, from the utilitarian standpoint has been overlooked.

I have in mind a certain theatre in which there was apparently no co-ordinated effort by the projection engineers and the architects to produce lighting effects on the screen and in the auditorium which would operate satisfactorily as a unit. In this theater the architects provided for a relatively high intensity of lighting during the projection of the motion pictures. They arranged the lighting circuits so that during the projection of the pictures the illumination in the auditorium was about one footcandle, approximately one-eighth of the illumination received when all of the lights were burning. I can qualify this illumination value by saying that ordinarily an

intensity of one-tenth of a footcandle is sufficient for reading programs. So much light from the lighting fixtures reached the screen during the projection of the pictures that the contrasts were greatly reduced. To remedy this condition either of two things could be done; one is to increase the amount of light projected from the motion picture machine; the other is to reduce the auditorium illumination. To utilize the first scheme would mean useless additional cost for energy in view of the fact that much less general illumination would be entirely satisfactory.

After endeavoring to operate the original lighting systems satisfactorily for a day or so, the management changed the lighting circuits so that there was one watt on the low intensity circuit where there had been ten before. The resulting illumination of in the order of one-tenth of a footcandle was sufficient during the projection of pictures with much more satisfactory results on the screen.

In the matter of theater design possibly we need some entirely different arrangements as to the placing of the orchestra. Perhaps we have followed the long existing practice of the so-called legitimate theater too much, and in the motion picture theater should follow some radically different lines, with regard to the location of the orchestra with respect to the screen. This is but one idea of a possibility it may be desirable to investigate. I believe we are yet young in the game and we have not fully developed motion picture theater lighting and auditorium design.

An important consideration which should not be overlooked is the maintenance of the lighting equipment. I do not believe that it is generally appreciated that lack of maintenance is very costly. A considerable amount of money may be spent on the installation of a lighting system to produce first-class lighting effects, yet after a year's operation this same system may be giving but 50 or 60 per cent of the initial illumination, because the lighting fixtures have not been regularly cleaned. Dust accumulations on the lamps and reflectors, and whereas originally good lighting effects are obtained through the combination of light of different colors, with the presence of dirt on the units not only is the intensity of the light decreased, but some of the special color effects may be affected in various degrees.

The remedy is provision for regular cleaning service. The frequency of cleaning is dependent upon the amount of dust prevailing in the particular community in which the theater is located; in many cases a monthly cleaning of the fixtures is satisfactory. But in any case a regular schedule should be established in order that the illumination which the lighting units were designed to give, will be maintained.