BETTER PROJECTION

A Department Conducted for the Projectionist and the Exhibitor

By F. H. RICHARDSON

Projection at the Pantages

MY trip this summer having taken me to the shores of the Pacific, I could not very well fail to look in on Hollywood. And I took advantage of the opportunity thus offered to examine the projection facilities of the film capital's latest theatre, the Pantages. Let us visit this magnificent house together.

Here we are in the projection room, which, incidentally, has over its door a good big sign reading exactly that—"Projection Room." I have, as you all know, seen a great many projection rooms. I have seen some which, I think, are perhaps just about as good, but certainly I have seen none better than the one I am now in.

To begin with the length of the room is between 50 and 60 feet. The ceiling is about 11 feet high, and the depth, front to back is, perhaps 14 or 15 feet. The walls are painted a light gray and so is the ceiling. That's the only criticism I have of the entire plant. It would be more effective projectionally if the front wall were of a darker color. The effect of a darker color would be to make the screen more visible. This would be particularly true in this room, because the ports are all covered with high grade optical glass. (However, I am advised that the present color will be changed.) The floor is covered with an inlaid linoleum, dark red in color and of a sort of tile effect in design. The appearance of the room is indeed very pleasing.

At the right end of the room—right-hand as we face the screen—is the projection room control board, which is fully enclosed and is dull black in color. This board stands out about eight feet from the end of the room. Back of it is another room, closed by a door, from which we have access to the rear of this control board. The rear of the board also is entirely enclosed by metallic doors.

In this small rear room is another switchboard. On the face of this board are five banks of switches. The top bank has ten switches, five of which control flood No. 1, and five control flood No. 2. Each switch is connected with a rheostat at the back, which possesses ten amperes of current. Hence, with all ten switches, 100 amperes of current would be available to each flood. The second bank of switches is ten in number and these control, similarly, spot No. 1 and spot No. 2. The third bank of switches, ten in number, operates similarly on Brenographs No. 1 and No. 2. The third bank of switches is much heavier. There are ten switches, five for projector No. 1, and five for projector No. 2. The five switches at the left hand in the lower bank control the current to projector No. 3, and the five on the right control a high intensity flood lamp. By closing the additional switches the current may be mounted up to a maximum of 50 amperes for each and every piece of apparatus in the room.

But that isn't all of it. There is a lot more, because before you start to cut in current with these switches on, for example, floods No. 1 or No. 2, spots No. 1 or No. 2, or Brenographs No. 1 and No. 2, there is already a 50-ampere current flow cut-in. Therefore, instead of cutting in 50 amperes with the switches, you start with 50 and cut in up to a maximum of 100 for each piece of apparatus. With the three projectors and the high intensity flood, you start, however, with 100 amperes, instead of 50, and thus, when all switches are closed, you have a total of 150 amperes. However, that's not quite all either, because when wide film comes and a 250-ampere maximum is required, it is possible to arrange the ballast resistance of this board so that it will supply the required current.

The rather remarkable thing about it is the fact that with this resistance running, the heat produced is so slight that the room, being well ventilated, is quite cool and comfortable.

GOING back to the rear of the main control board again, which is located in this same room, each lamp is controlled with a 300-ampere alternating current contact, with an additional 100-ampere shunt contactor, which has the effect of shunting 50 additional amperes to each lamp after it has been warmed up.

The projectors consist of three Super-Simplexes equipped with the new Ashcraft "600" super-high intensity lamps, a description of which I give later. All the motion picture projector lamphouses are connected by means of a six-inch ventilating pipe, which feeds directly into a 12x12-inch exhaust duct, which runs along the ceiling and is painted black. In addition to the three projectors, there is a Brenograph to the left, and to the right are two Brenkert spot lamps. To the right of the motion picture projectors there is an Ashcraft high intensity flood using 120 amperes. To the right of this, facing the two windows, each about 30 inches square and covered with optical glass, are two Chicago Cinema PCE-CO spot lamps, equipped with five color effects each,

On the left wall of the room is a wash basin with hot and cold water and a drinking faucet. In the rear wall are the film storage cabinets built in flush with the face of the wall. There are twenty 2,000-foot wide film reel compartments, surrounded by 16 metallic drawers of goodly size.

I forgot to mention that on the control board at the right of the room is an ammeter, which registers the total amperage being consumed in the projection room. Just at this moment it is exactly 300 amperes with three spots going. To the right of the ammeter is a voltmeter, now registering 115 volts. There is also a stage ammeter to the right of these.

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At the left of all the projection equipment named is the non-sync apparatus. At the rear of the room is a large metallic case clock which even goes to the extent of having a large second hand. Oh, yes, immediately under the rewind table is a film storage cabinet for the 35-mm. film now used, having many compartments and three or four metallic drawers. On top of this is the enclosed rewinder, an excellent piece of equipment. It runs a little faster than it should but this is not enough to bring forth any serious criticism.

The Western Electric sound equipment is built into the rear wall, the rear side facing a small narrow room enclosed by a door, by which access may be had to its various connections. Instead of batteries, this plant uses motor generators, of which two are provided. The men express their opinion that these motor generator sets are better than the battery. They say that the results are equally as good, provided the sets have careful and intelligent attention. One of these generators takes care of film and disc while the other is taking care of public address and broadcasting, about which latter I will tell you later.

The room is lighted by a very excellent lighting system. The fixtures are entirely opaque, so that all lighting is received by reflection.

The ventilation is what might be called perfect. But should the room ever become in any degree uncomfortably warm, the men can get all the air they want merely by opening the door of the room housing the main blower, which handles the entire theatre. By doing this they can bring a gale of air through the room that would cool off almost anything.

THEN there is the public address system, which is handled by the projectionists of the theatre. The reasons for this broadcasting system is, first, for an emergency set in case anything goes wrong with the initial sound system; and second, for public address in the theatre and for broadcasting over local broadcasting stations.

In order to accomplish this purpose, one 42-A amplifier panel is built into the wall of the projection room adjoining, and to the right of the regular sound panel, 1-S-43. Below the bridging amplifier is another 42-A amplifier, used for the purpose of connecting or "patching" the regular projection room sound panel to the public address system. When this public address system is used in connection with broadcasting, it must be done by means of an order wire, or telephone wire, to a licensed broadcasting station. Therefore, one 42-A amplifier is equipped with a broadcasting attenuator in order to measure and maintain the proper D-B's, which means, in effect, transmitting current.

In a small room adjoining the main projection room, public address or sound equipment is located consisting of two 207-A horn panels, one 203-B panel, one panel of six film control indicators, one measure film control indicator, 60 two-hole plug-in receptacles (telephone type), one panel of 16 microphone single-plug-in (female type) with six single-hole plug-in filter receptacles, two 41-A amplifiers, one 42-A amplifier and two 43-A amplifiers.

This system is called the most flexible that has ever been designed by the Bell Laboratory engineers. It is to be used for all purposes within the theatre, such as public address, emergency for regular sound system, etc. It is so arranged, with patching outlets, that any part of the regular sound system may be eliminated while repairs are being made, and without any wait or delay the public address system can be used in its stead. To show the flexibility, an entire rehearsal in the theatre can be carried on without anyone leaving their posts of duty.

AND now to give you chaps a jolt! All of this equipment is under the charge of the projection room staff of the Pantages Hollywood theatre. These men are C. C. Harden, chief projectionist; Ray Melling, Lloyd Peterson, Ralph MacDonald and Melvin Toensing.

These men have full charge of, and must handle, this equipment. When equipment of this sort is established in one deluxe theatre, we have every right to believe that in the near future it will be adopted by every deluxe theatre. As a matter of fact, it has already been adopted by other ones. So you see what you chaps are facing. I have told you many times on this trip, and hundreds, if not thousands of times through the medium of type, that you had better get busy and study your profession and gain every possible bit of information. You are going to have to handle equipment of this kind. Mr. Harden is just now showing me the wiring diagram of this public address system. One glance at it and a man goes cock-eyed. It has more wires than a public telephone exchange has. Projection of the future, gentlemen, is coming into its own and it begins to look as if the claim that a projectionist must be an engineer is going to become a fact. He will either have to be an engineer or gracefully retire from the projection room.

Now as to the Ashcraft "600" super-high intensity lamp:

I HAD the pleasure of visiting the Ashcraft Automatic Arc Company's plant in company with Business Agent T. H. Eckerson and Friend Daughter. I had not previously had the opportunity of examining the new Ashcraft "600" super-high intensity lamp, which is primarily designed for use with wide film. I was a wee bit astonished at the size of the apparatus.

The lamp house is 28 inches long, 23 inches wide and 24 inches high, and it has a six-inch vent pipe. It is so constructed that anything from a four-and-one-half-inch to an eight-inch diameter parabolic condenser can be used. The dowser is, of course, in line with common practice, inside the lamp house between the lamp and collector lens. The apparatus is built to use 120 to 200 amperes. At the present time the maximum carbon diameter is 16-mm., but a new and larger diameter carbon is being developed.

The carbon contact is made of Monel metal, which is a nickel alloy with very high heat-resisting properties. The current contact is three inches long, which should, is seems to me, prevent quick damage to the contacts, even when using the maximum current, 250 amperes.

The lamp itself is of massive construction. The wire contacts are one and five-eighths inches long, and it seems to me of excellent design. I might in fact say that, in line with everything that Ashcraft has made up to date, the apparatus is distinctly high grade.