Sound with Images

MARTIN DICKSTEIN

Rear Projection

● In the past, the most common method of projecting images on a screen was front projection. It is the simplest process for a novice or non-technical person to set up. Any flat surface, white preferably, can be used as the screen. All that is required of the projectionist is to set up the projector at the proper distance from the surface (depending, in part, on the lens that is furnished with the projector) and start the show. The show can be either motion-picture film or slides and, as long as the room is dark, the picture fairly sharp, the image bright, and there are not many viewers (all of whom must position themselves properly to see the picture) the presentation will probably go over quite well. (In general, this refers, of course, to home or small club showings.) The procedure becomes quite a problem, however, when the audience is fairly large, but in a small room.

Another technique for presenting both films and slides to medium-sized audiences has been developed more recently. This offers distinct advantages over the more common method. This is the *rear-projection* concept; it has been used successfully in training programs in hospitals, corporations, schools, executive board rooms, industrial shows, fairs, etc.

One of the most important advantages of rear-screen projection is that it is effective in a normally illuminated room. This eliminates the usual disadvantages of a dark-room presentation:

1. Loss of time and flow of continuity due to the necessity of having to pull shades or drapes and turning off lights.
2. Loss of visual contact between lecturer and audience with the resultant inability to maintain a question-answer type of contact when desired.
3. Loss of the audience's attention and the natural problem of drowsiness induced by extended periods of darkness.

In addition to this, the ability to present a projection demonstration in an illuminated room offers the demonstrator the specific advantage of being able to:

1. Maintain visual contact with the viewers and to interject comments when required by the reaction of the audience.
2. Refer to the screen and to indicate on the image the particular portion desired.
3. Stop the projector at any time during the presentation (by remote controls) to illustrate a point by the use of another visual device or by demonstration before continuing with the presentation.

At the same time, the audience enjoys being able to take notes during the showing – a particular advantage

during sales meetings, classes, training programs, technical lectures, etc.

Inherent in the rear-projection process are the extras of:

1. Being able to eliminate the distractions caused by having the projection equipment in the room with the audience (the reduction of projector noise and the extraneous light of the projector lamp).
2. Increased seating capacity due to the elimination of the necessary projection aisle down the middle of the room.
3. Elimination of shadows and interference with projection due to movement of the members of the audience rising, entering and leaving.
4. Avoiding *keystoning*, the distortion of the image caused by not having the screen perpendicular to the axis of projection.

Of necessity, a rear-projection installation requires that the screen be fixed in position. (This is assuming that the system will not be a temporary one made with a portable screen behind which the projector is placed for the one rear-screen presentation. Such a one-time presentation is usually not successful unless the projection geometry, optics, and screen material are given proper consideration.) Since the rear-screen system will have been designed and installed for the explicit purpose of showing slides or films from behind the screen, the projection axis, lenses, distances and image size and brilliance will have been carefully thought out (hopefully) and the equipment will be positioned properly with all necessary remote features included. This will provide the advantage of having:

1. A system which has been properly set up for satisfactory operation at the command of the lecturer at the desired times.
2. A lecturer who is not involved with threading the film or setting up the slides in view of the audience.
3. Equipment, accessories and presentation material which are not within easy reach of the audience, thus preventing damage or pilferage.

There are also behind-the-scenes advantages to a rear-projection setup.

1. In the preparation of the films or slides, there is no need to introduce eye-opener effects to keep the attention of the audience. The material can consist of close-ups or more detailed information than on front-projection material provided the equipment, screen and room seating layout have been thought out carefully.
2. Standard lamps and lenses can be used in most instances rather than having to provide special optics or bulbs.
3. Shorter behind-screen projection distances can be maintained with proper use of a mirror system.
4. More than one projection system can be provided in the same central area to service several rooms simultaneously.
5. Operation in a normally illuminated room offers the viewer the advantage of less eye strain and fatigue as the eye functions best in this environment.

There are times when illumination of the image must be increased, the lenses must be special, or the projection room must be outside the confines of the viewing room. Each of these situations must be carefully considered before a decision is made to have rear projection. Nevertheless, the advantages of rear projection are real and, with the aid of the audio-visual specialist, the customer and the designer of the presentation room can be guided into including a rear-projection facility in the project.