

APPLICATION NOTES

Electro-Voice®

Interest in line radiator loudspeakers is running high and familiarity with their operation will, of course, help you to use them more effectively.

Since the introduction of the models LR4 and LR4S, we have received many inquiries regarding the application of these units and particularly their comparison with columnar speakers now available.

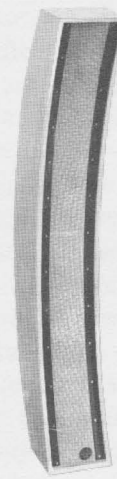
The most frequent question asked is why Electro-Voice does not use larger loudspeakers to achieve better low-frequency response. The answer is that, on an estimated 95% of the applications where a loudspeaker of this type will be used, voice reinforcement or projection with greatest possible uniformity of coverage and maximum intelligibility is the aim. On most applications, particularly those involving theaters, large meeting halls and similar rooms, low frequencies are not only not needed, but undesirable. If utmost realism is obtained, the lower frequencies will be attenuated or actually cut off to reduce low-frequency reverberation and feedback. On most applications, no equalization of the line radiators will be required, simply because the very low frequencies are not reproduced. It has been found that, on some applications where low-frequency reverberation is very high, it is desirable to provide even greater limitation of low frequencies by cutting them off below 200 or even 300 cps.

In addition, the low-frequency response advertised for most sound columns today is never achieved. The frequency response given is that for the loudspeaker used in a sound column, which provides a relatively small baffle. What low frequencies are reproduced are projected in a nondirectional pattern offering no control over reverberation and feedback. This makes extended low-frequency response much more undesirable.

*Trademark



LR4S



LR4

In short, Electro-Voice does not supply larger speakers with extended low-frequency response because on most applications it is not needed and undesirable. Even on orchestral pickup, usually only the vocalist used the sound system for reinforcement.

To terminate the argument, you need only compare the cost of Electro-Voice Line Radiators* with those systems using larger loudspeakers and advertising extended low-frequency response to see the great advantage in eliminating unneeded low-frequency response. The result, of course, is not only improved performance but vastly greater value for the ultimate customer in not making him pay for something he can't use.

Only one condition requires the reproduction of more extended low-frequency response than that provided by Electro-Voice Line Radiators. This is the situation in which reproduction of recorded music is involved. While the line radiators themselves will provide pleasant, balanced, musical repro-

duction, the customer may demand heavy bass. At present this can be provided by an auxiliary 12-inch or 15-inch speaker in a conventional baffle, giving far better bass response than that provided by any columnar speaker available today. To provide a complete assembly, however, Electro-Voice will announce in the near future a larger line radiator which will provide extended low-frequency response, but which will still retain the advantages of present Line Radiator configurations and the control which they are designed to provide.

Another comment often encountered is that a system utilizing Line Radiators lacks "punch". This comment has arisen principally on installations where Line Radiators were used to replace older type loudspeaker systems. This comment is sometimes voiced in spite of the fact that completely satisfactory coverage of the audience is being obtained! Here, too, the answer is quite logical. The common practice in the past has been to set up the loudspeaker system so that it spreads the sound as much as can be achieved by that particular type system and then merely apply sound level so that the people in the back of the room can hear. This means that the people down front are used to hearing very heavy sound levels being projected. The Line Radiators, in comparison, spread sound very uniformly over the entire audience, particularly when they are placed high over a stage or rostrum. This technique alone provides uniformity and eliminates the need to "blast" the front rows in order to achieve

coverage in the rear. This explanation is usually sufficient to answer any complaints. The performance provided by Line Radiators is different, so it is bound to stimulate comments; but it is superior, so the end result will be realism and satisfaction.

At times, where entertainers were involved, difficulty has arisen because they quite often get used to hearing their voices being projected by the sound system. Since they are usually located under the line radiators in the null area and because the loudspeakers do not have to "blast" to cover the room, they miss hearing themselves or the reverberation caused by the system. This gives them the impression that the system is not working and that they are not being heard by the crowd. Sometimes this illusion has been removed merely by an explanation of the system, but it was sometimes necessary to provide an auxiliary speaker such as a Musicaster[®] operating offstage at low level so the performer could be assured at all times that the system was working. When the use of Line Radiators becomes more prevalent, this complaint will, no doubt, disappear.

