

OUTDOOR THEATER

WASHINGTON, D. C.

Electro-Voice®



A typical outdoor audience reportedly ran about 1500, on the average. Note light and speaker tower.

Occasionally we find in the trade press a sound application which merits reprinting as a P. A. FACT SHEET article. Just such an application was that which appeared in *SOUND MERCHANDISING* in their September 1962 issue. We liked it well enough, in fact, that we obtained the permission of Jerome J. Brookman, publisher of *SOUND MERCHANDISING*, and Frederic Zeller, of Harman Kardon, Inc., who provided the material, to reprint the application in this issue of

P. A. FACTS. We take this opportunity to thank them for having extended us the courtesy of permitting us to reprint.

PROBLEM

Ever since the theater began, actors and audiences have been plagued by less than perfect sound reproduction.

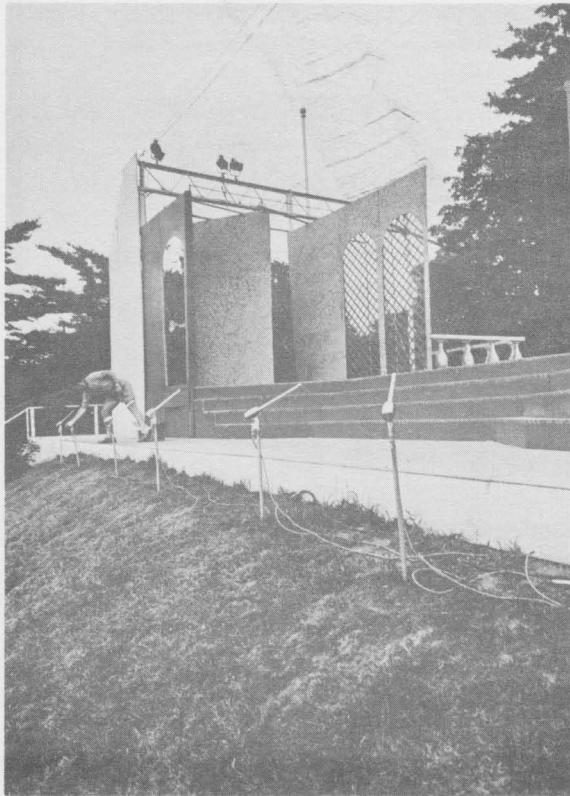
Two thousand years ago in a Roman theater in Sardinia, actors amplified their voices and directed them to the audience through a system of earthenware "acoustic vases" used as megaphones. It was the world's first "public address system," but, according to writers of the time, adequate for the requirements of ancient actors, audiences, and theaters.

Today the requirements are more rigorous. Outdoor theater is becoming more popular, and audiences are growing. But theater al fresco is frequently accompanied by the distracting sounds of the modern age—planes and buses, trucks and cars, and perhaps a fire engine or two. (And actors' voices are not getting any stronger.) A complex professional sound system is needed to make sure that the sound, as well as the nuance and color, of an actor's voice is conveyed to every member of the audience from the front row to the back. Not an easy task for an open-air theater with virtually endless dimensions.

SOLUTION

A successful solution to the problem of outdoor sound systems was found by this city's Summer Shakespeare Festival and Harman-Kardon, Inc., Plainview, N. Y., a leading manufacturer of high fidelity and commercial sound components. Now in its second year, the Festival tackled the problem of providing a sound system for Washington's ever-growing audience for free Shakespeare productions, which are staged on the vast expanse of the Washington Monument grounds at the Sylvan Theater.

President of the Festival, which lists among its sponsors such notables as Sir Laurence Olivier, Robert Frost, and Olivia de Havilland, is Dr. Norman L. Brown, a physicist with the Electricity Division of the U. S. Bureau of Standards.



Electro-Voice "long reach" Model 644 microphones were ranged in front of stage.

Dr. Brown recognized that a highly professional system was needed to provide sound with fidelity worthy of a 'live' performance for every member of an average audience of 1,500. Yet the system had to be compact enough to fit into a limited backstage area and simple enough to be operated by non-professionals.

"After consultation with factory representatives," Brown stated, "we purchased a system from a local Harman Kardon distributor that provides optimum sound for the Sylvan Theater."

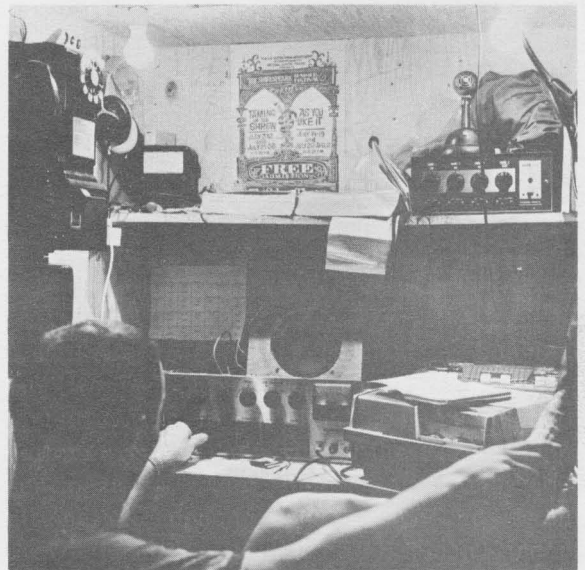
At the heart of the system is a new Harman Kardon Galaxy Series Model PR-1 mixer-preamplifier. From a single backstage location, the unit controls the level of six microphones placed uniformly across a 35 foot stage area where footlights would ordinarily be. This arrangement enables an actor delivering a speech from any off-center point on the stage to be heard above the roar of automobile traffic from nearby Constitution Avenue or plane traffic from National Airport.

The PR-1 feeds a Model BA-75 booster amplifier which supplies 75 watts of undistorted power to six loudspeakers placed uniformly along the aisles of the 125 ft. deep seating area. For situations requiring additional microphones, such as speeches from the wings, the Festival used a Harman Kardon Commander Series Model DPR-1 mixer-preamplifier, which increases the system's overall capacity to ten microphone channels.

The system included facilities for monitoring and recording, as well as inputs for recorded sound effects.

COMMENTS

Because many people were exposed to the theater, not to mention Shakespeare, for the first time at free productions such as those staged in Washington, Dr. Brown believes that the quality of the sound system can influence their entire concept of a dramatic production.

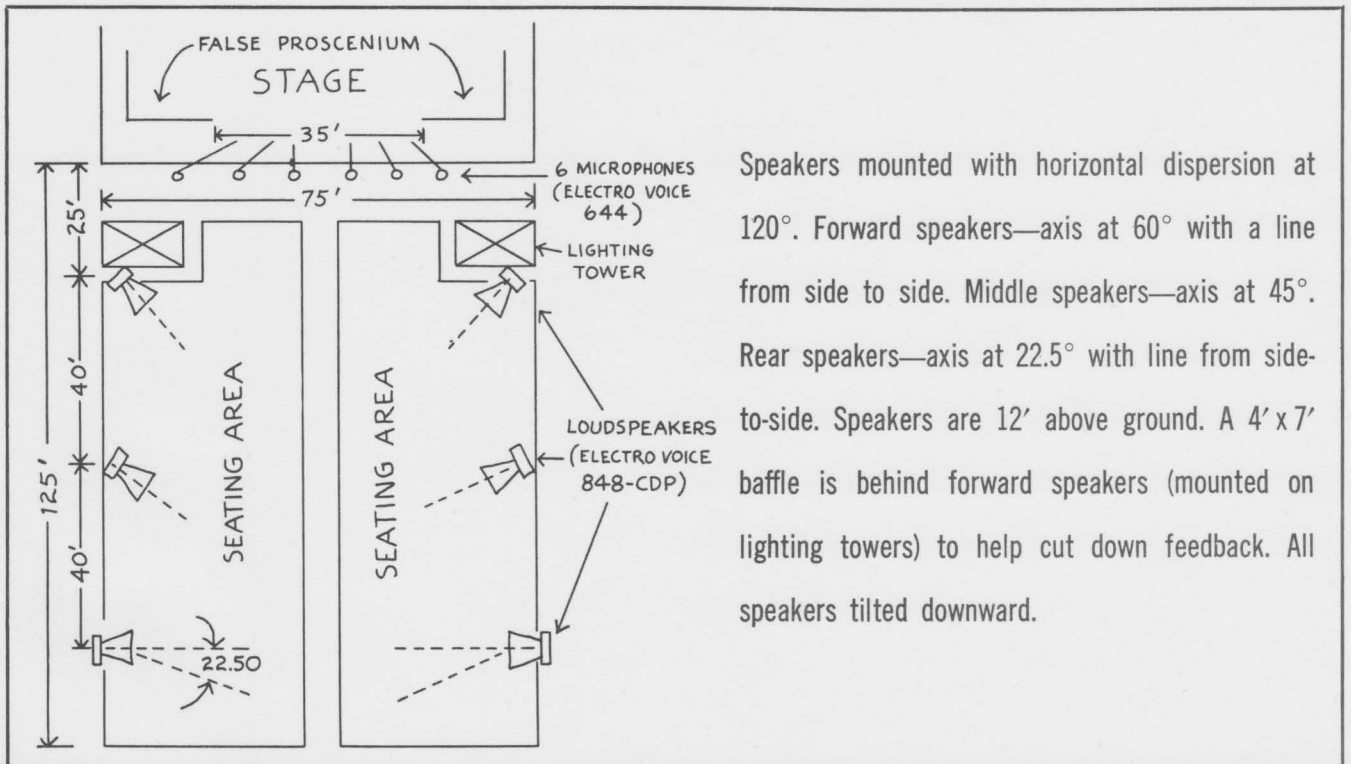


Riding gain and recording.

"If the sound is good," says Brown, "they think the theater's wonderful, and they'll come back for more. If it's not, they may never attend a dramatic performance again."

By the end of the Festival's summer run, Brown estimated that 50,000 Washingtonians and summer visitors saw the productions and heard the timeless lines of Shakespeare's "Taming of the Shrew" and "As You Like It" without cost— but also without effort.

Dr. Norman L. Brown watches a rehearsal sound run-through of "Taming of the Shrew."



Speakers mounted with horizontal dispersion at 120°. Forward speakers—axis at 60° with a line from side to side. Middle speakers—axis at 45°. Rear speakers—axis at 22.5° with line from side-to-side. Speakers are 12' above ground. A 4' x 7' baffle is behind forward speakers (mounted on lighting towers) to help cut down feedback. All speakers tilted downward.