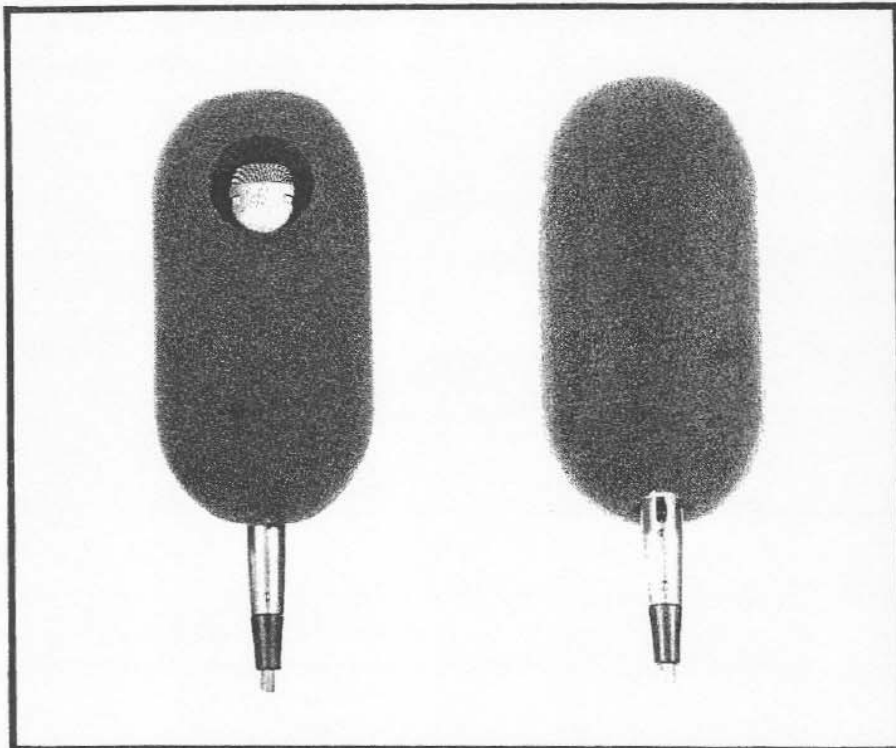




**Electro-Voice®**

a MARK IV company

## Model 411/411A Microphone Floor Mount

### DESCRIPTION AND APPLICATIONS

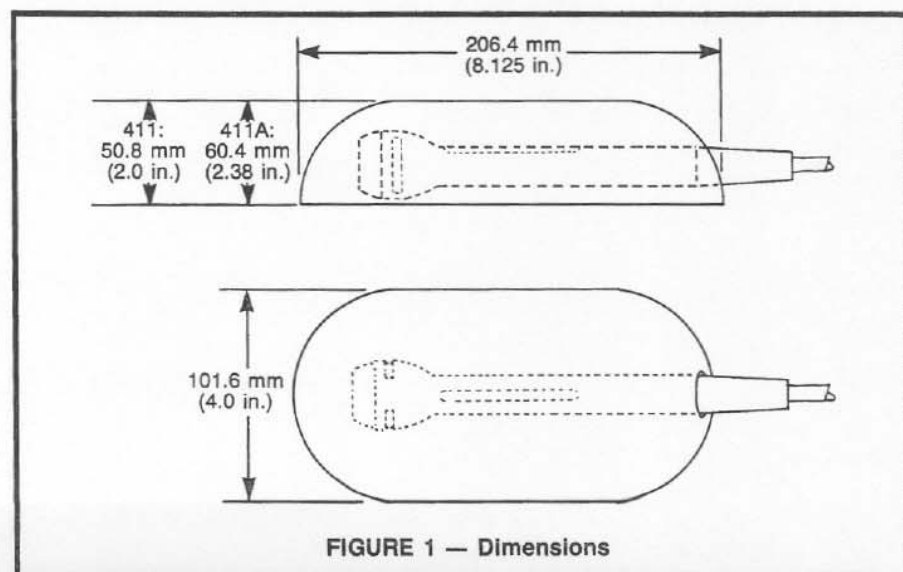
The Electro-Voice 411/411A\* "mike mouse" floor mount was designed as the result of extensive original research by Electro-Voice on the effects of acoustic phase cancellation in single microphones. For long distance pickup from either desk tops or stages, the 411/411A provides a means for the most natural sound pickup possible, while keeping the microphone almost completely out of view of audience and performers. The 411 accommodates the CO15P, CS15P, RE10, RE15, 660 and 660A microphones. The 411A fits the RE18.

For pickups from stage or desk top, the most conventional type of microphone stand mounts the microphone about six to eight inches above the reflecting surface of either the stage or the desk. In this configuration, the direct transmission of energy from the performer reaches the generating element of the microphone only fractions of a second before the almost equally strong first reflected waves from the flat surface (see Figure 2). This causes what is known as "acoustic phase cancellation of a single source" which is often heard as a very "hollow" sound. As the performer moves closer and/or farther away from the microphone, the relative strength and time differences of the direct wave and the reflected wave change, and a very noticeable effect can be heard.

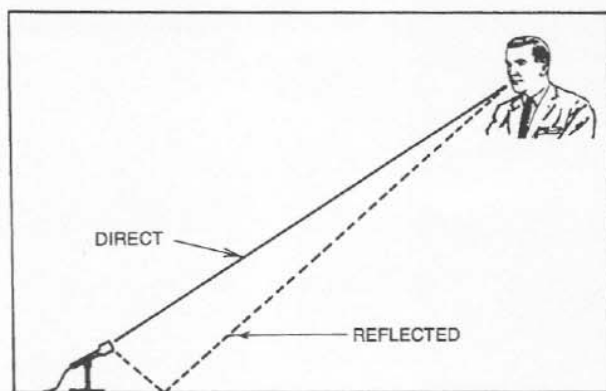
As the microphone is lowered closer to the floor, the changes in frequency response due to acoustic phase cancellation become more and more severe because the

influence of the reflected wave is increasing. However, when the microphone is allowed to rest only fractions of an inch from the floor, both floor-reflected and direct waves reach the microphone virtually simultaneously, not allowing any acoustic phase cancellation. The resultant sound is almost exactly like that of the microphone under ideal conditions (see Figure 3). The increased actual sound pressure at the microphone due to the reflected wave is as much as 3 to 4 dB. This, coupled with the smoother response, often means increased gain-before-feedback (over conventional microphone mounting) on the order of 6 dB.

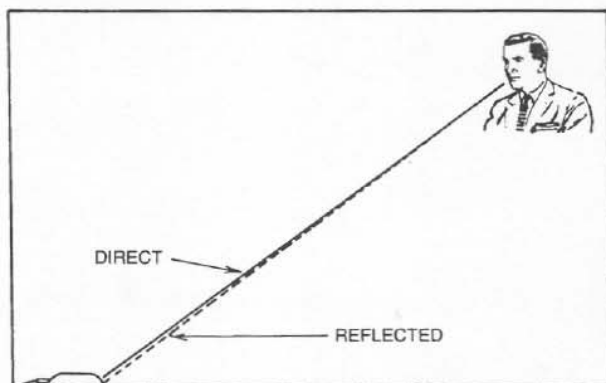
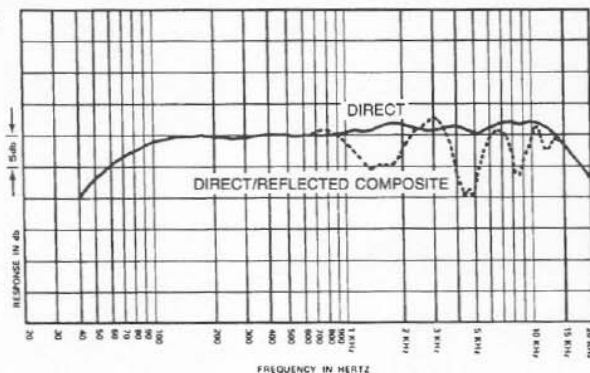
The 411/411A is made of Acoustifoam™. It not only serves as a proper floor mount for the microphone, but also serves to protect it from dust and dirt particles and to shock-mount the microphone from mechanically transmitted vibrations through the floor. (Most "foot noise" and other objectionable noises which might be associated with floor-mounting technique come not from mechanical transmission, but from free air acoustic transmission.) With the shock-mounting of the Acoustifoam in the 411/411A, unwanted "mechanical" noises are controlled much the same as with conventional mounting on small shock-isolated stands.



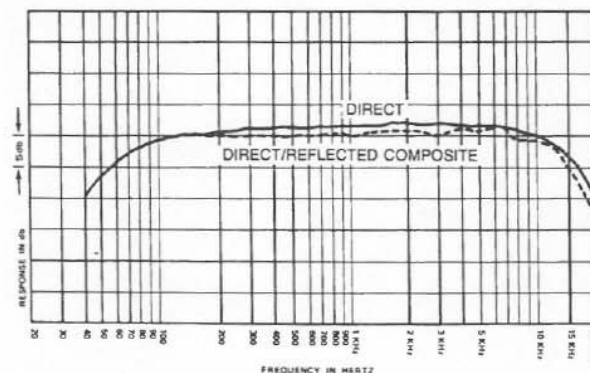
\*U.S. Patent No. 3,862,377



**FIGURE 2**  
Dotted Line Shows Effect  
of Interference from  
Reflected Floor Wave



**FIGURE 3**  
Microphone's Proximity  
to Flat Surface  
Relieves Distortion



The 411/411A also serves to "camouflage" the microphone from both the audience and performer. What before was an unsightly microphone on a six- or eight-inch stand is now only a small lump of charcoal gray foam which, on a desk, is easily concealed and on stage is often not seen at all.

#### MOUNTING INSTRUCTIONS

The microphone may be mounted in the 411/411A by simply sliding it into the recess provided on the underside of the mount. The 411 accommodates the CO15P, CS15P, RE10, RE15, 660 and 660A microphones. The 411A fits the RE18. The "backbone" or cancellation ports of the RE10, RE15, 660 or RE18 should face upwards as in Figure 1. The connector and cable are then plugged into the microphone through the hole at the rear of the 411/411A. The 411/411A is then placed on its flat side on the surface of the stage or desk in much the same positioning as normal stage microphones would be used. (To avoid multiple pickup acoustic-phase cancellation, let each microphone do its job to the fullest and try to keep the number of microphones on a given stage or flat surface area to a minimum.) Double-sided adhesive tape may be used to the rear of the microphone head and on the flat surface of the 411/411A to attach it more firmly to the flat surface, if desired.

Remember, the increased effectiveness in gain-before-feedback and in pickup quality depends upon the reflected wave from the floor immediately in front of the 411/411A. For this reason, pickup will be best if the surface extending in front of the microphone is flat, hard and free of obstructions.

Specifications subject to change without notice.



**ELECTRO-VOICE, INC., 600 Cecil Street, Buchanan, Michigan 49107**

MANUFACTURING PLANTS AT ■ BUCHANAN, MI ■ NEWPORT, TN ■ SEVIERVILLE, TN ■ OKLAHOMA CITY, OK ■ GANANOQUE, ONT.  
©Electro-Voice, Inc. 1990 ■ Litho in U.S.A. Part Number 530746-706

a MARK IV company