



LOU BURROUGHS



PAUL FRANKLIN

MICROPHONE FACTS

for the operating engineer

from *Electro-Voice*[®]

ELECTRO-VOICE, INCORPORATED
BUCHANAN, MICHIGAN 49107
616/695-6831

April, 1965

ANNOUNCING

MODEL 667A - OFFSPRING OF MODEL 668

Production of the Model 668 began in June of 1964. From then until recently, we have been buried in back orders. The impact of its sudden success has been a bit overwhelming. As of today, all major motion picture studios, with the exception of two, have a number in use. At the moment, Glen Glenn Sound Company tops the list with fifty units. As Joe Kelly (V. P. of Operations at Glen Glenn) recently told me, all production sound is recorded using 668's except for an occasional pickup made using a 666 or 649B.

Above all, the part that made us most happy was Joe's report on service. No failures — and all remain uniform in frequency and polar response.

Recent reports from two major motion picture studios and several TV stations (nameless by request) were to the effect that regardless of the number purchased there are never enough 668's to go around and the demand is increasing. I find the three major things causing this growing demand are: light weight, high-level output and maintenance-free operation.

After about five months of 668 production, with several hundred in use, I began to find a number of users not requiring some of the equalization included in the 668. After making an investigation of the situation, we concluded an abbreviated 668 should be added to the line.

The Model 667A is that microphone. It is identical to the 668 except for the absence of three segments of the equalization, namely the 80 cps hi-pass filter, 8 KC lo-pass filter and the high-frequency rolloff or C position. See specification sheet included.

To eliminate any confusion, since the 668 and 667A look alike, the band on the rear of the unit, carrying the response curves, will be finished in red while on the 668 it is finished in black.

The elimination of these segments of equalization creates a new model and a new price. The model 667A will carry a user-net price of \$207.00.

ONE MORE APPLICATION FOR THE MODEL 642

If you are unhappy with the sound of your audience reaction pickup, you might try the setup John Neal, audio technician for the ABC Hollywood Palace Show, is using to solve his problem.

The Hollywood Palace Show originates in the refurbished El Capitan Theater in Hollywood, California, now known as the Hollywood Palace. When the show had its debut, there were twenty-two ribbon cardioid microphones used for the pickup of audience reaction. They were distributed equally to cover the main floor and balcony and suspended about five feet over the heads of the audience. John said the resulting sound lacked both presence and perspective and was not representative of the sound heard in the theater.

To rectify the problem, John used four 642 microphones, two covering the main floor and two covering the balcony. They were suspended about eight feet high and fifteen feet in front of the nearest audience. The resulting sound had excellent presence and perspective and all production personnel are now satisfied with the reproduction.

The failure of the twenty-two microphone installation was due to the fact that there were twenty-two microphones in use. The more microphones used, the more perspective suffers. In the case of the twenty-two units, no one in the audience of several hundred was further than seven feet from a microphone, placing everyone in a single plane averaging about six feet from a pickup source, thus reducing the normal theater perspective from around sixty feet to that of six feet.

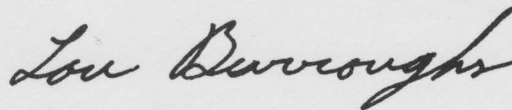
Presence was also lost. By attempting to pick up the entire audience, the sound became so diffused that it tended to sound like a roar rather than distinct hand-clapping and laughter. The delay in arrival time of the same sound at several microphones will also add to the diffusion. Add to this the points of cancellation at various frequencies that occur due to acoustic phase shift and it is remarkable that a multiple microphone setup sounds as good as it does.

In the present successful setup, John selected the model 642 for its narrow pickup angle and associated long reach. Several variations in placement were tried with final arrangement being chosen for the most satisfactory balance of presence and perspective. Since the 642 may be

used at from two to three times the distance of a cardioid pattern unit and maintain similar presence, the fifteen feet at which the 642's are placed gave John the presence he required and through their long reach, to the depth of the audience, good perspective was obtained. After hearing an A-B comparison of the old and new setup, I asked John to make a comparison test of one 642 and the four in use. This comparison was made on a later rehearsal and John reported that no difference was detected and that one could do the job required.

In conclusion, I want to emphasize the fact that where the reproduction of natural response is desired, one wide range smooth response microphone, with the proper polar pattern to control the ambient conditions present in a specific instance, is preferred. Two may be used providing they are in very close proximity and facing in the same general direction. Should these two be separated a matter of two feet or more apart, acoustic phase shift will be a problem causing serious dips in frequency response at various frequencies depending on placement of microphone and distance and angle of sound source in relation to microphones. The difference in arrival time of the same sound at two or more microphones will cause diffusion and frequency distortion. The use of more than one microphone, if spaced apart, will reduce perspective and this reduction will increase with each additional microphone.

Be sparing in the use of your microphones, prove to yourself that one will not accomplish the desired effect before adding another, you may be surprised at the number you are able to eliminate and improve your pickup at the same time.



L. R. Burroughs
Vice President
Broadcast & Recording Equipment