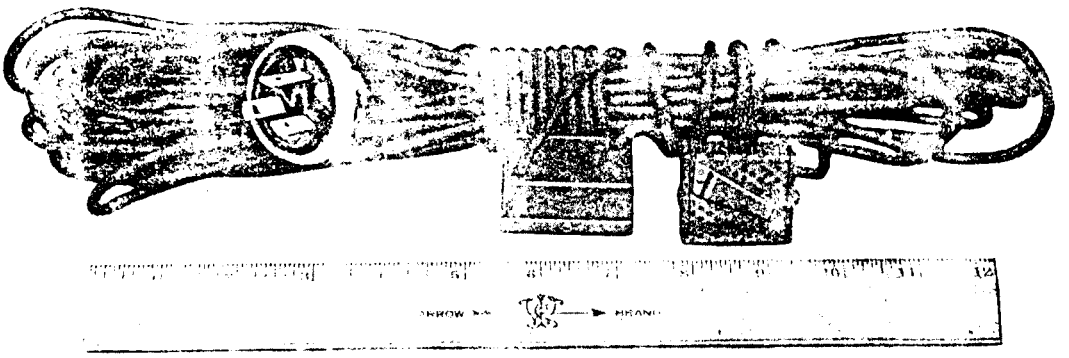
RCA LAPEL VELOCITY MICROPHONE
Type (PB)115 MI-4001



Frequency Range.....80 to 4,500 cycles ±2 db.with a 7.5 db.rise at 5,000 cycles	Dimensions:
Overall Response Range.....80 to 7,000 cycles	Microphone Unit.....1-7/16" x 1-3/16" x 15/16"
Matching Transformer	Transformer.....1¾" x 1-1/6" x 7/8"
Output Impedance.....250 ohms	Weight:
Cord Length.....25 feet including plug	Microphone Unit.....3¼ ozs.
Code.....VLAWI	Transformer.....3¼ ozs.
	Shipping Weight..Approx. 1½ lbs. (entire unit)

The RCA Lapel Velocity Microphone is a small, highly efficient unit designed to be clipped to the lapel of a speaker. Through the medium of a 25-foot cord efficient pickup can be obtained of voice over the wide radius provided by this cord. This is particularly desirable at banquets, political gatherings and other places where it is undesirable to restrict the movement of the speaker. In many cases, such restrictions would be given scant attention and the use of the public address equipment would be ineffective.

Because of its velocity type, this microphone has no objectionable background noise or carbon hiss. This is particularly important in this type of microphone because of the constant motion to which it is subjected.

A small impedance matching transformer is connected by means of a 3-foot cord to the microphone. This transformer is normally placed in the pocket of the speaker and the connecting cord from it is, of course, connected to the input of the amplifier.

Commercial Sound Section

RCA MANUFACTURING COMPANY · INC

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THE IDEA of a small, light microphone which would move about with the artist is not new, and in recent years several attempts have been made to produce microphones for this purpose. However, for such use there are several critical design requirements. The first requirement is sensitivity and frequency characteristics substantially independent of the movement of the speaker's head - second, a frequency characteristic properly compensated for the effect of the diffraction of sound waves about the head - third, sufficient sensitivity - and fourth, small size and weight.

PREVIOUS DESIGNS of lapel microphones have only partially met these requirements. Usually of the carbon type, they offered a good ratio of sensitivity to size and weight - but little more. The frequency characteristic of those types of microphone was nearly fixed and could not be easily altered to effect the necessary compensation. Moreover, it varied widely with the angle between sound source and microphone normal, with the result that the quality of the voice reproduction was changed when the speaker turned his head. Finally the directional characteristic was broad so that an undesirable amount of surrounding noises, such as those of the audience, was picked up. Because of such handicaps, the early designs were disappointing and they came to be generally regarded more as a novelty than as a practical device.

THE PERFECTION of the Velocity(pressure-gradient) type of microphone for studio use opened up a new field, and engineers immediately foresaw the advantages of a similar type of microphone for lapel use. The frequency characteristic was just as desired, i.e., independent of angle. The microphone could be readily placed so that the head movement would approximately follow an equi-sensitivity curve. The inherently flat frequency characteristic could be easily compensated. And finally, the very favorable directional characteristic would do much to suppress undesirable noises. With this in mind, development of a lapel microphone having these advantages was begun. The result is the Model MI-4001 Lapel Velocity Microphone - one which is not a toy, not a novelty, but a finished and practical instrument, superior to anything previously available, and ideal for professional performance.

AS MENTIONED before, it is necessary to compensate for the diffraction of the sound waves about the head - also for the "velocity effect" - that is, the increase of particle velocity close to the source. This has been accomplished by properly proportioning the other constants of the circuit to give the desired response, as arrived at by calculation and by measurement(with an artificial mouth)under actual conditions. As a result the overall response of the Model MI-4001 Microphone in use is substantially flat($\pm$2.5 db over the range of 80 to 7000 cycles with a 7.5 db rise at 5000 cycles)and is practically independent of head movement.