OMNIDIRECTIONAL DYNAMIC MICROPHONES

General: Models 540 and 540S "Sonodyne II" are pressure dynamic microphones with an adjustable frequency response and an omni-directional pickup pattern.

The "Sonodyne II" is very versatile in application and is ideal for all types of voice and music reproduction. The microphone is highly recommended for tape, wire, and disc recording, fixed or mobile public address, paging systems, amateur communications and general communication service.

When used vertically (microphone pointing straight up), the performers may be placed around the microphone without any direction discrimination.

Models 540 and 540S have a swivel which permits tilting, so the microphone can be aimed at the source of sound. Model 540S has a built-in ON-OFF switch to control the microphone circuit—an integral part of the microphone; the switch is a slide-to-talk locking type switch.

Additional features are:
1. Adjustable high frequency response (See Figure E).
2. Adjustable low frequency response (See Figure E).
3. Dual impedance.
4. Built to withstand hard usage and great temperature variations.

The 15 foot (4.6 m) high quality shielded two conductor cable is supplied with microphone plug equivalent to the Amphenol 91-MC3M plug attached.

The Models 540 and 540S Microphones are dual impedance for connecting into microphone inputs rated at 25 to 200 ohms or into high impedance microphone inputs.

The low impedance connection is recommended where long cable lengths are required or under conditions of severe hum disturbance. The permissible cable length is practically unlimited, since neither response nor level is appreciably affected. For use with high impedance amplifiers, Shure Model A95A Line Matching Transformer is available for coupling the low impedance line to the amplifier input. The Shure Model A95A transformer permits coupling a 25-200 ohm line to the high impedance input.

Impedance Selection:
Models 540 and 540S are shipped connected as high impedance units. To change to low impedance:

MODEL 540S:
1. Remove the two No. 2-56 screws holding the switch to the connector and switch housing. (See Figure A).

   Remove the nameplate and cover and take the colored leads out of the connector assembly.

2. Disconnect the black lead from the white lead and insulate or tape the end of the white lead.
3. Connect (solder) the black lead to the red lead and insulate or tape the connection.
4. Replace leads inside of connector assembly and reassemble nameplate and cover.

Response Selection:
The Models 540 and 540S "Sonodyne II" feature an adjustable frequency response at the high and low frequencies. The microphones are supplied having the EXTENDED high frequencies and the EXTENDED low frequencies (See Figure E—solid line curve).

For some applications, such as paging systems, base stations, ham radio, etc., it may be desirable to have more emphasis of the middle high frequencies (Figure E—dotted line curve) and/or a "roll off" of the low frequency response (Figure E—dash line curve).

To modify the high frequency response, proceed as follows:
1. Holding microphone in a vertical position, unscrew (turn counterclockwise) and remove the microphone cap and grille assembly (See Figure B).
2. Remove the perforated aluminum resonator plate used for extended response and substitute the 18 hole resonator plate (supplied) and add one spacer. These are used for middle high frequency emphasis.
3. Reassemble the cap and grille to the microphone case making sure that the microphone cartridge is properly seated and that the cap and grille assembly is tightened securely.

To modify the low frequency response, proceed as follows:
1. Locate the threaded hole at the back of the microphone (See Figure B).
2. Remove the headless No. 4-40 set screw in the threaded hole using a small screwdriver. The opening of this acoustic port produces the sharp roll-off of the low frequency response (See Figure E—dashed line curve).
**SPECIFICATIONS**

**Type:**
Dynamic

**Diaphragm:**
Shure Duracoustic

**Frequency Response:**
50 to 13,000 Hz. Provisions for alternate response: Rapid roll-off above 6,000 Hz. and/or below 400 Hz. (See Figure E)

**Polar Pattern:**
Omnidirectional

**Microphone Rating Impedance:**
Dual; 150 ohms for connecting into microphone inputs rated at 25 to 200 ohms and 40,000 ohms for connecting into high impedance microphone inputs. (See general copy under "Impedance Selection").

**Output Level:**
1,000 Hz. response
Model 540 Series Low Impedance
Open Circuit Voltage ................ 76.5 db* (.149 mv)
Power Level ................ 56.0 db**
EIA Microphone Rating
Gm (sensitivity) ................ 148.0 db***

Model 540 Series High impedance
Open Circuit Voltage ................ 53.5 db* (2.13 mv)
EIA Microphone Rating
Gm (sensitivity) ................ 150.0 db***

*:0 db = 1 volt per microbar
**:0 db = 1 milliwatt with 10 microbars
***:0 db = EIA Standard SE-105, August 1949

**Cable:**
15-foot (4.6 m) two-conductor shielded with Amphenol MC3M type microphne plug on the microphone end.

**Case:**
Chrome-plated die-cast and black "Armo-Dur.”

**Dimensions:**
See Figure D

**Switch:**
Model 540 None
Model 540B Built in "ON-OFF" switch to control microphone circuit. The switch is an integral part of the receptacle assembly and is a slide-to-talk type switch.

**Swivel:**
Self-adjusting “Positive Action” with 5½”-27 stand thread.

**Net Weight (less cable):**
15 ounces (425 grams)

**Packaged Weight:**
2 pounds, 6 ounces (1077 grams)