termination, the attenuator A1 set on step +4, and the slide-wire P1 adjusted until a reading at the 0 vu or 100 mark is obtained on the meter.

Readings on the volume indicator calibrated in this way indicate the level which would exist in the 600 ohms with the volume indicator disconnected rather than the level in the 600 ohms with the instrument bridged across it. Thus with the volume indicator connected to a program bridge outlet which has been lined up to have the same level as the through line the volume indicator reading obtained with the above calibration will indicate true level on the through line; or, in those cases where a volume measurement is desired on a line not normally equipped with the volume indicator, the reading obtained on this circuit by means of the volume indicator calibrated as above and patched temporarily to this circuit will give the true level on this circuit for the condition when the volume indicator has been removed.

Method B

This method should be used in cases where the volume indicator is to be permanently connected across a through circuit. In this method compensation is made for the bridging loss of the volume indicator (about 0.3 db) so that the readings obtained represent the volume levels in the circuit while the volume indicator is connected.

A sending source having approximately a 600-ohm impedance is adjusted to deliver 4 db above 1 milliwatt of 1000-cycle power into a 600-ohm resistance termination *when the volume indicator is bridged across it.* The attenuator A1 is set on step 4 and the slide-wire P1 adjusted until a reading at the 0 vu or 100 mark is obtained on the meter.

Alternative Calibration

In installations where a source of 1000-cycle power is not readily obtainable the volume indicator may be calibrated from low-voltage 60-cycle a-c power used for filament or heater supply in associated amplifiers, using an ordinary wire-wound potentiometer of 25,000 ohms total resistance for adjustment of the voltage applied across terminals 1 and 2 of the volume indicator. (In order to protect the amplifier or the system from which the 60-cycle source is obtained, a fuse should be connected in the temporary circuit as near as practicable to the source of the a-c voltage, and the connecting circuit including the fuse and the potentiometer should be carefully insulated from ground and from accidental contact with adjoining metal surfaces.) In this calibration a test voltmeter of the electronic or rectifier type is used to measure the 60-cycle sine-wave voltage at the volume-indicator input terminals, and the slide-wire P1 adjusted to obtain the proper deflection of the meter. Calibration in accordance with either Method A or Method B already described may be made in this manner, the method of calibration used being dependent upon the manner in which the volume indicator is