

SPECIFICATIONS

GENERAL:	Two-stage, fixed gain, transformer coupled, high level line or monitoring amplifier.
INPUT:	Operates from 200 ohms.
OUTPUT:	Normally operates into 500 ohms.
LOAD CARRYING CAPACITY:	Output level +21 db with less than 1% total harmonics introduced by the amplifier.
GAIN:	Approximately 61db.
VACUUM TUBES:	First stage—one 262A; second stage—two 271A in push-pull.
FILAMENT SUPPLY:	2.32 amperes at 10± 0.3 volts AC or DC.
PLATE SUPPLY:	Approximately 55 mils at 375± 25 volts DC.
DIMENSIONS:	Overall—Height 7", Length 19", Depth 7½".
WEIGHT:	Approximately 25 pounds.
FINISH:	82A-15—Standard (Mat—Dark Gray Rear Cover—Aluminum. 82A-3—Black.

DISTRIBUTOR IN THE UNITED STATES

Graybar
ELECTRIC COMPANY

General Office: 420 Lexington Avenue
New York, N. Y.

DISTRIBUTOR FOR CANADA AND NEWFOUNDLAND

Northern Electric Company Limited

General Sales Office: 1201 Shearers Street, Montreal, P. Q.

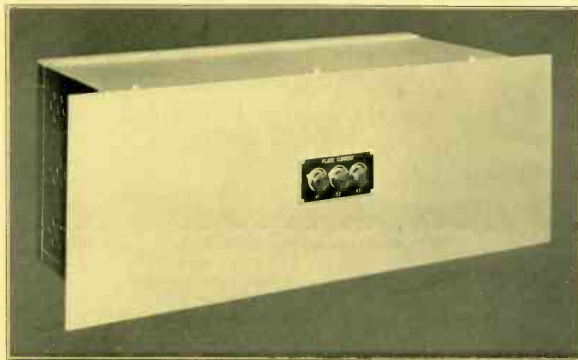
FOREIGN DISTRIBUTORS

International Standard Electric Corporation

67 Broad Street, New York, U. S. A.

Western Electric Amplifier

No. 82A



For Radio Telephone Broadcasting Systems

A development of Bell Telephone Laboratories, the Research Laboratories of the American Telephone and Telegraph Company and the Western Electric Company.

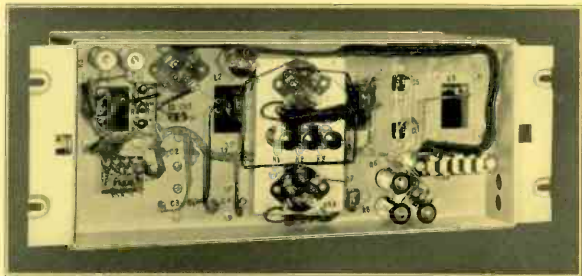
THE Western Electric 82A Amplifier is a two-stage, fixed gain, transformer-coupled amplifier which is used as the main amplifier in all new Western Electric AC operated speech input equipments. It is used as the high level amplifier in studio equipments, as the line amplifier in station equipments and as the monitoring amplifier in both studio and station equipments.

The 82A Amplifier is designed to operate between impedances of 200 and 500 ohms with a frequency response characteristic which is uniform from 30 to 10,000 cycles per second. The output transformer is tapped so that an output impedance of 250 ohms also may be obtained. It will deliver a +24 db energy level with less than 1% total harmon-

ics introduced by the amplifier. The amplifier has a gain of approximately 61 db.

A Western Electric 262A Vacuum Tube is used in the first stage and two Western Electric 271A Tubes in push-pull are used in the second stage. The complete 82A Amplifier weighs approximately 25 pounds. The apparatus is assembled on a recessed metal panel suitable for mounting on a relay rack or in a cabinet. The amplifier is attractive in appearance and is designed so that all parts are quickly accessible. The larger components such as vacuum tubes, coils and condensers, are mounted on the back of the panel and when the panel is mounted on a rack are protected from dust and mechanical injury by a removable cover. When the amplifier is





FRONT VIEW — MAT REMOVED

mounted in a cabinet this cover is not necessary. The smaller parts, together with all wiring, are mounted on the front in the recessed portion of the panel and are protected by a removable metal mat. The mat is finished in dark gray and the back cover in aluminum. Both mat and cover will be furnished with black finish if this is specified by the customer.

Keys on the front and resistances in the plate circuits, serving as meter shunts are provided for measuring the plate current of each of the vacuum tubes through a suitable external meter, such as that provided in the Western Electric 262A Meter Panel.

As the amplifier does not include a control potentiometer any external potentiometer of suitable design may be used. The Western Electric 265A Control Panel is recommended for this purpose. It contains two identical potentiometers and a monitoring repeating coil and may be used with either a line amplifier, a monitoring amplifier or both simultane-

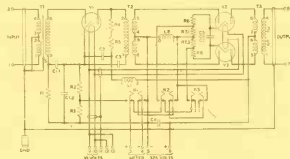
ously. The use of an external control potentiometer makes it possible to interchange the line and monitoring amplifiers by means of patching cords without changing the settings of the potentiometers. Furthermore, it is possible to mount the control panel so that it is easily accessible to the operator while the amplifiers may be mounted wherever space is available.

Power Requirements

An alternating current supply of approximately 2.32 amperes at 10 ± 0.3 volts is required for the filaments of the vacuum tubes. The Western Electric 263A Voltage Regulator Panel, designed to supply a constant 10-volt potential from 100-125 volt, 60 cycle power lines, is recommended for this purpose. If the power supply is 50 cycles, then the 263B Voltage Regulator Panel should be used instead. These voltage regulator panels will supply two 82A Amplifiers, one 81A Amplifier and one 700A Volume Indicator.



FREQUENCY IN CYCLES PER SECOND



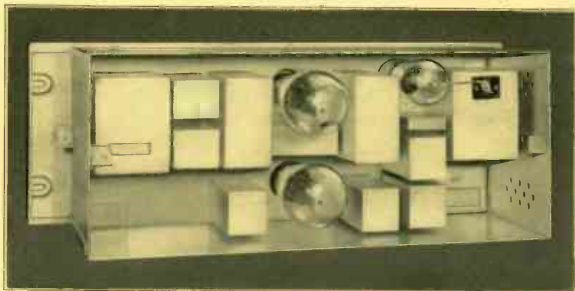
SCHEMATIC CIRCUIT

A plate supply of approximately 55 milliamperes at 375 ± 25 volts DC is required for the plate circuits. The Western Electric 8A Rectifier with self-contained filter is recommended for this purpose. The use of an independent rectifier unit adds flexibility to the assembly of the apparatus and permits the separation of the rectifier from other units which are sensitive to electro magnetic disturbances.

The output of the 8A Rectifier is 116 milliamperes at 375 volts. It will furnish power for two 82A Amplifiers, one 81A Amplifier, and one 700A Volume Indicator. The grid

bias for the amplifier tube is obtained from the voltage drop across resistances located in the cathode circuits of the vacuum tubes.

The 8A Rectifier contains a manual power control switch through which AC power is supplied to the filament voltage regulator as well as to the circuits of the rectifier. A time delay circuit in the rectifier permits the cathodes of the amplifier vacuum tubes to reach their normal operating temperatures before the high voltage plate power is applied. The use of a single power control switch for several panels reduces the likelihood of contact trouble.



REAR VIEW — COVER REMOVED

239⁰⁰ (see 7-see)

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GAIN:	Approximately 61db.
VACUUM TUBES:	First stage—one 262A; second stage—two 271A in push-pull.
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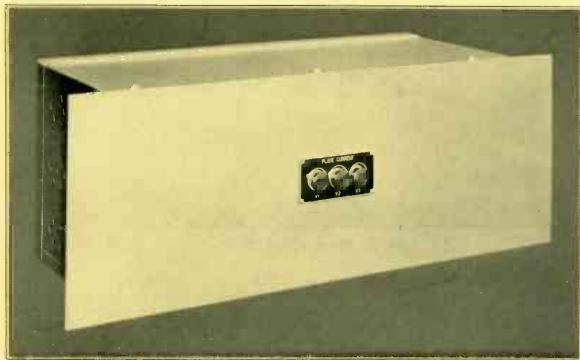
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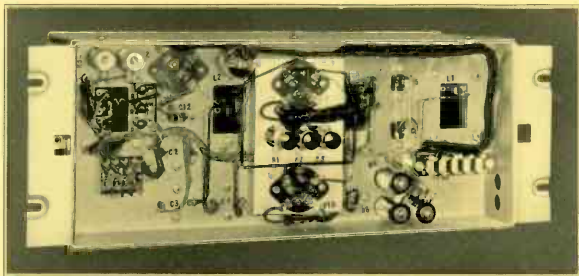
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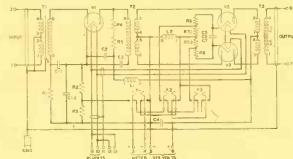
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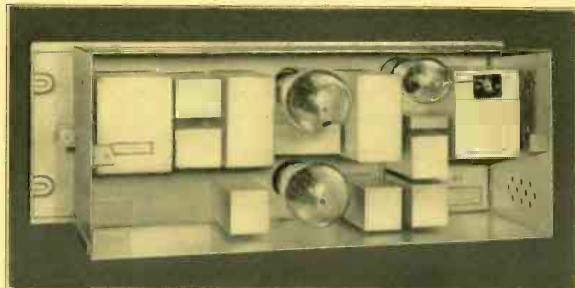


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239⁰⁰ (see 7-60)