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by a potentiometer shunted across the screen voltage supply and not by a high-resistance rheostat.

Complete **shielding** of all stages is recommended if maximum gain per stage is to be obtained.

APPLICATION

As a **radio-frequency amplifier,** the '32 is operated as shown under CHARACTERISTICS. Neither the plate voltage nor the screen voltage is critical. In general, properly designed radio-frequency transformers are preferable to interstage coupling impedances, especially in cases where a high impedance B-supply may cause oscillation below radio frequencies.

As a **detector,** the '32 may be operated either with grid leak and condenser or with grid bias. For grid bias detection, suitable operating conditions are: Plate supply voltage, 135 volts applied through a plate coupling resistance of 100000 ohms or an equivalent impedance; positive screen voltage, 67.5 volts; and a negative grid bias (approximately 6 volts) so adjusted that a plate current of 0.2 milliampere is obtained with no a-c input signal. For grid leak and condenser detection, suitable operating conditions are: Plate supply voltage, 135 volts applied through a plate coupling resistor of 250000 ohms; a positive screen voltage up to 45 volts; a grid condenser of 0.00025 μf.; and a grid leak of 1 to 5 megohms.

In designing circuits to use the '32 as a detector, it is desirable to work from the detector stage directly into the power output stage.

As an **audio-frequency amplifier** in resistance coupled circuits, the '32 may be operated under the following conditions: Plate supply voltage, 180 volts applied through a plate coupling resistor of 100000 to 250000 ohms (or a 500 henry choke shunted by a 0.25 megohm resistor); plate current, 0.25 milliampere (approximate); grid voltage, −1 volt; and a grid resistor, 0.25 to 2.0 megohms.

AVERAGE PLATE CHARACTERISTICS