



readily available, they are not furnished with the instrument.

Field experience with the analyzer in the measurement of acoustic noise has also indicated the desirability of this change. Although the original problem that led to the development of the impact noise analyzer was that of measuring the high-level sound from impacts

in heavy machinery, the instrument has been widely applied to the measurement of relatively quiet impacts. Here, the impact noise from the detenting action while switching out of the "RESET" position could interfere with the desired measurements. In the new model it is possible to reset and release more quietly.

— ARNOLD PETERSON

**SPECIFICATIONS**

**Input:** Any voltage from 1 to 10 volts for normal range. Inputs below 1 volt reduce the range of reading.

**Input Impedance:** Between 25,000 and 100,000 ohms, depending on the setting of the LEVEL control.

**Frequency Range:** 5 cps to 20 kc.

**Level Indication:** Meter calibrated in db from -10 to +10. Attenuator switch increases range by 10 db.

**Peak Reading:** Rise time is less than 50 microseconds for a value within 1 db of peak value (for rectangular pulses). Storage time at normal room temperature is greater than 10 seconds for a 1-db change in value.

**Quasi-Peak Reading:** Rise time of less than 1/4 millisecond and decay time of 600 ±120 milliseconds for rectifier circuit.

**Time-Average Reading:** Charge time of rectifier circuit selected by seven-position switch, having times of .002, .005, .01, .02, .05, 0.1, and 0.2 second for the resistance-capacitance time

constant. Storage time at normal room temperature is greater than 1 minute for a 1-db change in value.

**Accessories Required:** A sound-level meter or frequency analyzer to supply the analyzer input if it is to be used for acoustic measurements.

**Input Terminals:** Cord with phone plug at one end.

**Batteries:** One 1½-volt size D flashlight cell (Rayovac 2LP or equivalent) and one 45-volt B battery (Burgess XX30 or equivalent) are supplied. Typical battery life is 100 hours.

**Transistors:** Two 2N1372 and one 2N1374.

**Tube Complement:** One TYPE CK6418.

**Cabinet:** Aluminum; carrying case supplied. Case fastens directly to one end of TYPE 1551 Sound-Level Meter.

**Dimensions:** Height 4¼, width 7½, depth 6½ inches (110 by 195 by 165 mm).

**Net Weight:** 4½ lb (2.1 kg); carrying case, 1 lb (0.5 kg).

<i>Type</i>		<i>Code Word</i>	<i>Price</i>
1556-B	Impact Noise Analyzer .....	MEDAL	\$220.00

**TYPE 1263-B AMPLITUDE-REGULATING POWER SUPPLY**

For most measurements it is desirable that the generator output amplitude be constant with frequency. The TYPE 1263-A Amplitude-Regulating Power Supply<sup>1</sup> has provided a convenient means of accomplishing this with General Radio Unit Oscillators and has been particularly useful in conjunction with the

TYPE 1750-A Sweep Drive for sweep-frequency measurement techniques.

A new model is now available, TYPE 1263-B, which has similar characteristics to its predecessor. It can be used with the Sweep Drive as well in circuits where the oscillator frequency is changed manually or by means of the TYPE 907-R and 908-R Dial Drives.

A feature of the new model is provision

<sup>1</sup>W. F. Byers, "The Type 1263-A Amplitude-Regulating Power Supply," *General Radio Experimenter*, 29, 11, April, 1955.

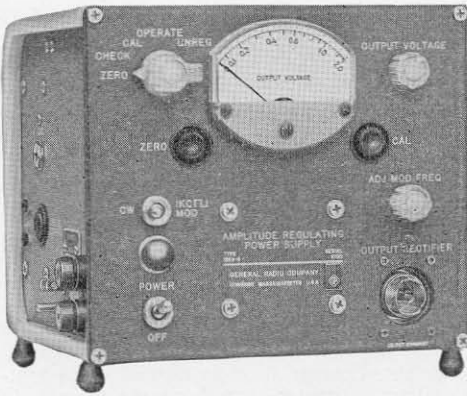


Figure 1. Panel view of the Type 1263-B Amplitude-Regulating Power Supply.

for square-wave modulation of the oscillator at 1,000 cps. This feature is particularly useful in frequency-response measurements because it permits the use of a tuned audio amplifier following the detector, thus achieving high sensitivity with simple equipment. The TYPE 1232-A Tuned Amplifier and Null Detector<sup>2</sup> is an excellent amplifier for this purpose. The square-wave modulation feature provides modulation free from incidental fm, a necessary condition for frequency-sensitive measurements.

The housing has been changed to the rack-bench type,<sup>3</sup> compatible with the TYPE 1361-A UHF Oscillator.<sup>4</sup> The two units can be attached to each other to form a rigid assembly.

**Circuit**

Figure 2 is a schematic of the power supply. With the controlled oscillator unmodulated, the dc potential developed by the oscillator output rectifier is compared with a dc reference potential, and the difference is brought to a minimum by a change in the oscillator plate voltage. When the oscillator is modulated by the internal 1-ke square-wave source, the average carrier level is controlled, which corresponds to one-half the maximum amplitude. Maximum oscillator output that can be controlled is 2 volts unmodulated and 1 volt modulated, corresponding to 2 volts at modulation peaks.

<sup>2</sup>A. E. Anderson, "A Tuned Amplifier and Null Detector," *General Radio Experimenter*, 35, 7, July, 1961.  
<sup>3</sup>H. C. Littlejohn, "The Case of the Well-Designed Instrument," *General Radio Experimenter*, 34, 3, March, 1960.  
<sup>4</sup>G. P. McCouch, "A New UHF Signal Source," *General Radio Experimenter*, 35, 3, March, 1961.

Figure 2. Elementary schematic of the Amplitude-Regulating Power Supply with rectifier and rf oscillator.

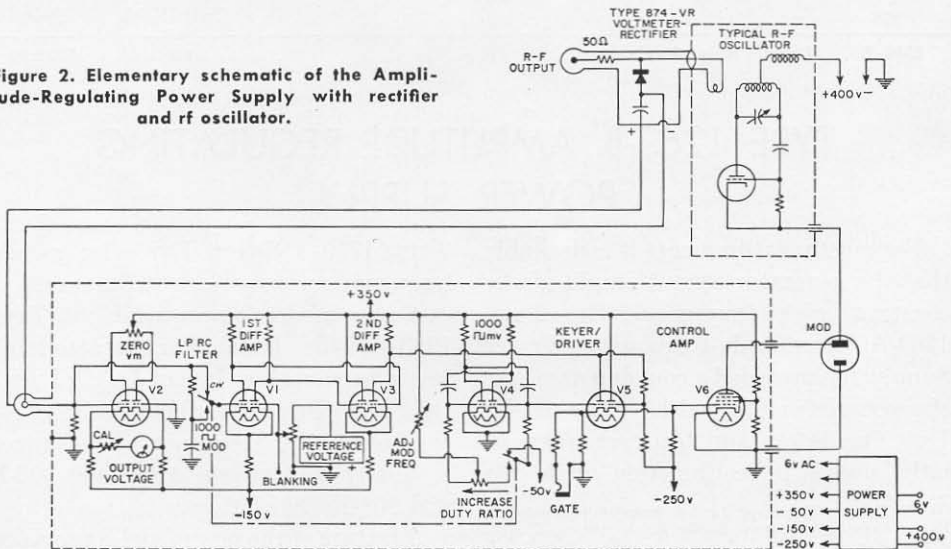
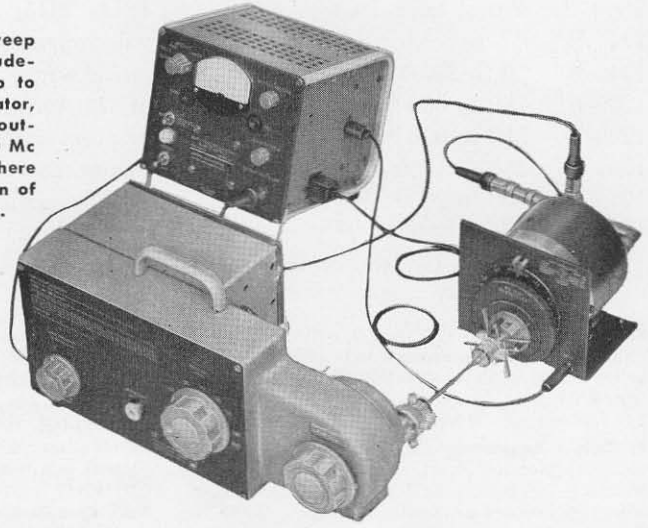






Figure 3. The Type 1750-A Sweep Drive and the Type 1263-B Amplitude-Regulating Power Supply set up to sweep a Type 1208-B Unit Oscillator, thus providing a constant sweep output over a frequency span of 250 Mc to 920 Mc. The equipment shown here is listed below, with the exception of the oscillator and sweep drive.



Since users may prefer to provide their own rectifier for the oscillator output, this is not supplied. The TYPE 874-VR Rectifier is recommended, however, and plugs directly into the coaxial output connectors of General Radio oscillators and is readily connected to the connector on the panel by a TYPE 874-R22 Patch Cord. The panel meter indicates the oscillator output voltage and, when a TYPE 874-VR Voltmeter Rectifier is used, indicates the equivalent zero-impedance generator voltage in series with 50 ohms.

### Applications

For automatic sweep operation of the

oscillator, as, for instance, in the display of amplitude-frequency characteristics on an oscilloscope, the TYPE 1750-A Sweep Drive is recommended. The complete assembly is shown in Figure 3. For this application, a blanking contact is provided in the sweep drive.

For slower-speed plotting, as with an X-Y plotter, TYPE 907-R and 908-R Dial Drives can be used. Figure 4 is a block diagram of a typical assembly.

### Oscillator

The TYPE 1263-B Amplitude-Regulating Power Supply can be used with the following General Radio Oscillators:

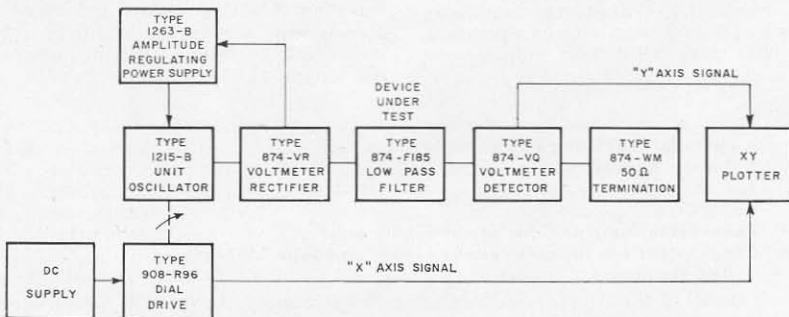


Figure 4. A typical setup for plotting frequency characteristics.



TYPE	FREQUENCY RANGE
1211-B*	0.5 to 5 Mc and 5 to 50 Mc
1215-B	50 to 250 Mc
1209-BL	180 to 600 Mc
1209-B	250 to 920 Mc
1361-A	450 to 1050 Mc
1218-A	900 to 2000 Mc

\*Not recommended for modulated operation

The earlier, A-models, of the TYPES

1211, 1215, and 1209 Unit Oscillators will operate satisfactorily with this power supply after a slight modification of the terminal connections. Other oscillators with compatible power requirements can be operated if a dc connection can be made to the cathode circuit to apply plate current control.

— W. F. BYERS

**SPECIFICATIONS**

**Rf Output Voltage:** 0.2 to 2.0 volts behind 50 ohms for any recommended oscillator (see below), and a TYPE 874-VR Voltmeter Rectifier. With 1-kc square-wave modulation, 0.2 to 1.0 volt behind 50 ohms (average).

**Rf Output Regulation:** Below 500 Mc, rf output of recommended Unit Oscillators is held to within  $\pm 5\%$  including the effects of harmonics. This regulation can be attained up to 2000 Mc if proper low-pass rf filters are used and a correction applied for the output-rectifier frequency characteristic.

**Modulation**

**Frequency:** 1-kc square-wave, adjustable  $\pm 5\%$ , stable to within 5 cps over the rated range of line voltage.

**Duty Ratio:** 0.5 to 0.53, adjustable to compensate for oscillator starting delay.

**Rise and Decay Times:** 50  $\mu$ sec each.

**Overshoot:** None.

**Ramp-off:** Less than 0.5%.

**Gate Voltage:** Synchronized with "off" interval of modulation, exceeds 1 volt into the recommended load of 30 k $\Omega$  shunted by 300 pf. Rise and decay times are less than 50  $\mu$ sec each. Gate output during "on" interval of modulation is less than .01 volt.

**Plate Supply Output:** 0 to 300 volts at 30 ma.

**Heater Supply Output:** 6 v  $\pm 10\%$  at 0.5 amp, 5.4 v  $\pm 10\%$  at 0.7 amp.

**Response Time:** For a 2-to-1 step variation in oscillator output, correction is completed within 0.5 msec with cw operation, 50 msec with 1-kc modulation. Recovery time after blanking is less than 2 msec with cw operation, less than 200 msec with 1-kc square-wave modulation.

**Hum and Noise:** Peak residual hum and noise modulation is less than  $\pm 0.3\%$  on cw; less than  $\pm 3\%$  with 1-kc square-wave modulation.

**Output Voltmeter:** Internal standardizing circuit is provided. Accuracy after standardization is better than  $\pm 10\%$  of indication when a correction is applied for rectifier characteristic at extremely high frequencies.

**Tube Complement:** Four 12AX7, one each 5963, 6V6GT, 0A2.

**Power Input:** 105 to 125 (or 210 to 250) volts, 50 to 60 cps, 55 watts maximum, at full load.

**Accessories Supplied:** TYPE CAP-22 Three-Wire Power Cord, connector cable for modulation jack on oscillator, spare fuses.

**Other Accessories Required:** TYPE 874-VR Voltmeter Rectifier, TYPE 874-R22 Patch Cord for connecting output rectifier, and TYPE 874-T Tee for monitoring oscilloscope connection in sweeping applications.

**Recommended Oscillators:** TYPE 1215-B (50 to 250 Mc), TYPE 1209-BL (180 to 600 Mc), TYPE 1209-B (250 to 920 Mc), TYPE 1361-A (450 to 1050 Mc), TYPE 1218-A (900 to 2000 Mc), and for cw operation only, TYPE 1211-B (0.5 to 50 Mc).

**Other Accessories Available:** The TYPE 1750-A Sweep Drive is recommended for automatic operation; coaxial cables, connectors, attenuators, filters, and adaptors; TYPE 480-P408 Panel Extensions for relay-rack mounting; TYPE 480-P416 Panel Extensions for rack mounting with the TYPE 1361-A UHF Oscillator.

**Mounting:** Aluminum panel and cabinet.

**Dimensions:** Width 8, height 7, depth 9 1/4 inches (205 by 180 by 235 mm), over-all.

**Net Weight:** 14 1/2 pounds (6.6 kg).

Type		Code Word	Price
1263-B	Amplitude-Regulating Power Supply.....	GAVOT	\$355.00
874-VR	Voltmeter Rectifier.....	COAXRECTOR	30.00
874-T	Tee.....	COAXTOGGER	11.00
874-R22	Patch Cord.....	COAXTANNER	7.60
480-P408	Panel Extensions (pair, for power supply only).....	EXPANELJAG	8.00 Pair
480-P416	Panel Extensions (pair, for power supply and Type 1361-A UHF Oscillator).....	EXPANELNIT	6.00 Pair

The previous model of the Amplitude-Regulating Power Supply, TYPE 1263-A, is still available. This model does not provide 1-kc square-wave modulation. The TYPE 1263-A is priced at \$305.00; code word is SALON.