

# AUDIO EQUIPMENT

**HARRIS**  
**INTERTYPE**  
**CORPORATION**

**GATES**<sup>®</sup>  
A DIVISION OF HARRIS-INTERTYPE

# AM Limiting Amplifier



## MODEL M-6543

Designed to outperform all others, the Gates Solid Statesman Peak Limiting Amplifier ushers in a new age of advanced limiter capabilities.

**PERFORMANCE:** True limiting without peak clipping is achieved with an average 3 to 5 microsecond attack time. This eliminates the several milliseconds of clipping found in most limiters while the limiting action "catches up". Thus, in this new Peak Limiting Amplifier, even the most critical ear cannot detect the audible distortions that are apparent as a result of slow attack time.

**LOW DISTORTION:** Distortion is typically 0.2% at 30 Hz and 0.3% at 16 kHz with 10 dB of limiting, and is less than 1.0% with up to 30 dB of limiting. Frequency response remains uniform with or without limiting.

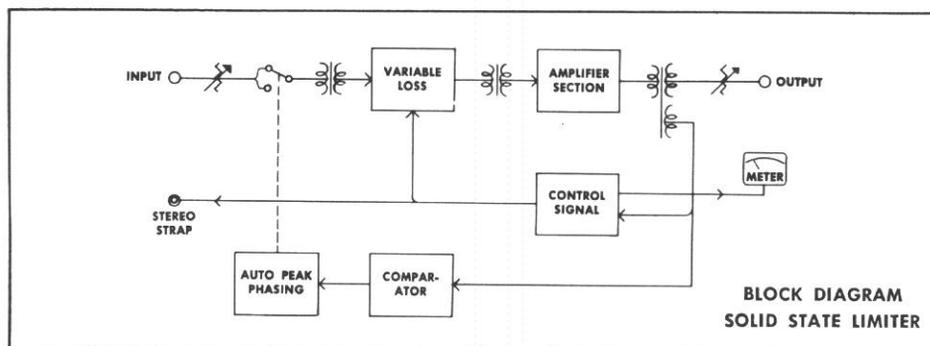
**HIGHER MODULATION LEVELS:** Fast attack time (in microseconds) and variable release time provide complete freedom from "pumping" with limiting of 15 to 20 dB on most program content. A 30:1 compression ratio allows 99.5% negative modulation without overmodulation. For AM stations,

asymmetrical limiting permits positive peak modulation levels of 110% or 120%, yet negative peaks are limited to 100% or less. This produces a louder-sounding signal.

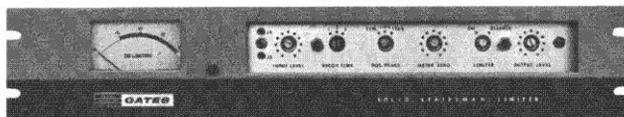
**AUTOMATIC PHASE REVERSAL:** The highest peak of the audio signal is made positive to produce the highest AM modulation level in the transmitter. This asymmetrical limiting causes no base line shift in the limiter, and does not artificially alter the balance of the program content. It does permit greater modulation of the natural positive peaks with the resultant increase in transmitter power.

Symmetrical limiting is also available for operation where peaking and phasing of the signal are not desired. A front panel control also permits the limiter to be disabled for proof of performance tests.

**CONTROLS:** All operating controls are located behind the front access panel. Input and output connections are provided on a barrier terminal block, in addition to the AC power cord, on the rear of the unit.

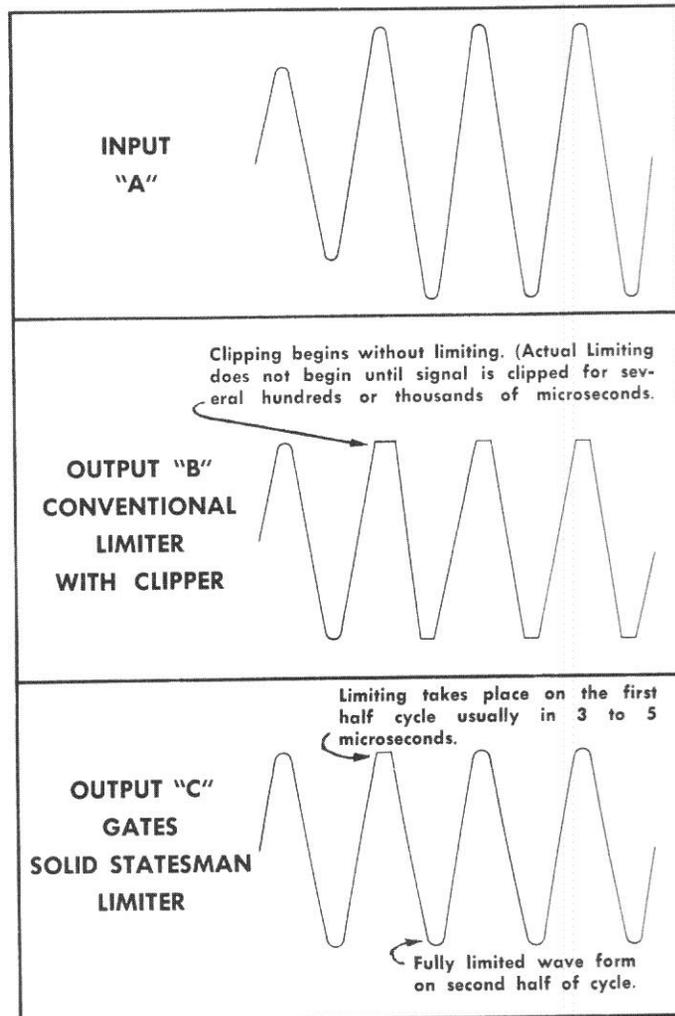


# AM Limiting Amplifier



Front view, panel open.

The signal at "A" applied to a conventional limiter with a clipper produces output "B". Here the signal is first clipped, introducing distortion, and then several milliseconds later the true limiting is accomplished. Gates Solid Statesman Limiter completes the limiting action during the first half cycle of the pulse (output "C"). Any distortion produced would be during the first half cycle, and after that the signal would be truly limited without distortion.



## SPECIFICATIONS

**GAIN:** 50 dB,  $\pm 2$  dB max. @ 1 kHz. (May be reduced by built-in input and/or output attenuators).

**FREQUENCY RESPONSE:**  $\pm 1.0$  dB max., 30 to 16,000 Hz (with or without limiting).

**HARMONIC DISTORTION:** Less than 1.0% from 30 to 16,000 Hz, from 0 to 10 dB of limiting, except with fast recovery on low frequencies where there is partial recovery on each  $\frac{1}{2}$  cycle.

**NOISE:** 70 dB below threshold of limiting, 30 to 16,000 Hz.

**ATTACK TIME:** Less than 10 microseconds (typical 3 to 5 microseconds).

**RECOVERY OR RELEASE TIME:** Gated to program content, with 3 positions for individual preferences.

**AMOUNT OF LIMITING:** 30 dB with a 30:1 compression ratio, an increase of 30 dB input level will increase output level 1 dB.

**INPUT LEVEL:** Adjustable -22 to +18 dBm for 5 dB of limiting.

**OUTPUT LEVEL:** Adjustable to +23 dBm maximum.

**INPUT AND OUTPUT IMPEDANCE:** 600 ohms, balanced or unbalanced.

**TEMPERATURE RANGE:**  $-20^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ .

**INPUT POWER:** 115/230 volts, 50/60 Hz.

**DIMENSIONS:**  $3\frac{1}{2}$ " H x 12" D x 19" W (standard rack).

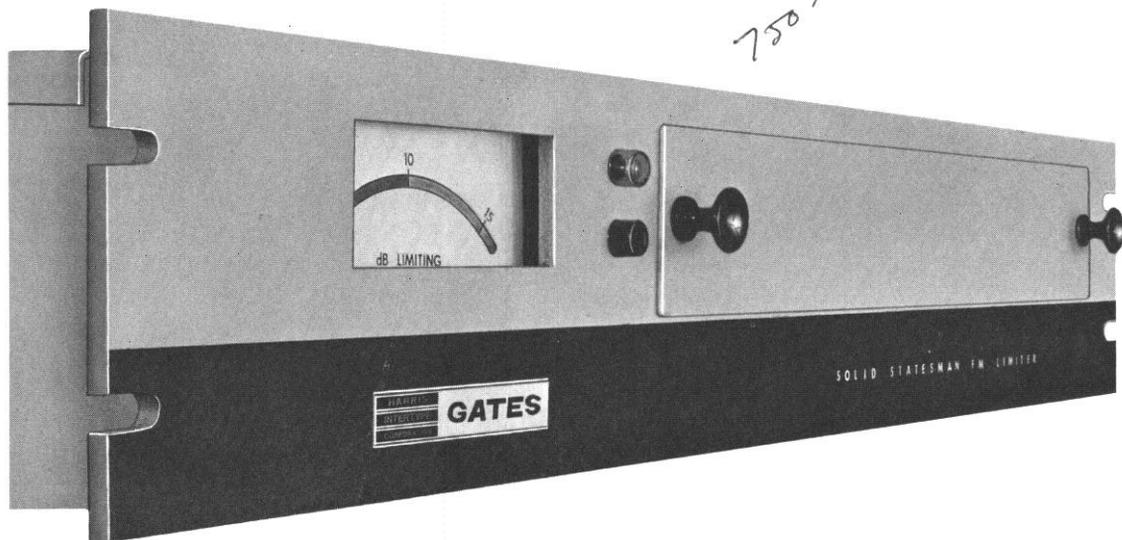
**WEIGHT:** 13 lbs. net; 22 lbs. shipping.

## ORDERING INFORMATION

AM Limiting Amplifier

994-6543

# FM Limiting Amplifier



## MODEL M-6631

Gates' new Solid Statesman FM Limiter (M-6631) is designed to prevent FM over-modulation, while retaining the original fidelity of the program material. This is accomplished through a combination of limiting, pre-emphasis, instantaneous peak controlling and de-emphasis.

A wide control range, low distortion and rapid attack time are outstanding features of the M-6631—made possible by the extremely close balance of the "Differential Amplifier" used as the gain control device.

Another important feature is the selectable recovery time, which allows each station to choose the best recovery time (FAST, MEDIUM, SLOW) for its type of programming.

In the FAST mode of operation the FM Limiter has dynamic gated recovery. This permits very fast (200 millisecond) recovery times for the highest possible modulation levels, while distortion figures are almost as low at 30 Hz operation as at 1000 Hz.

The MEDIUM and SLOW positions are conventional and

offer slower recovery times for stations desiring protection from over-modulation, but more subtle operation.

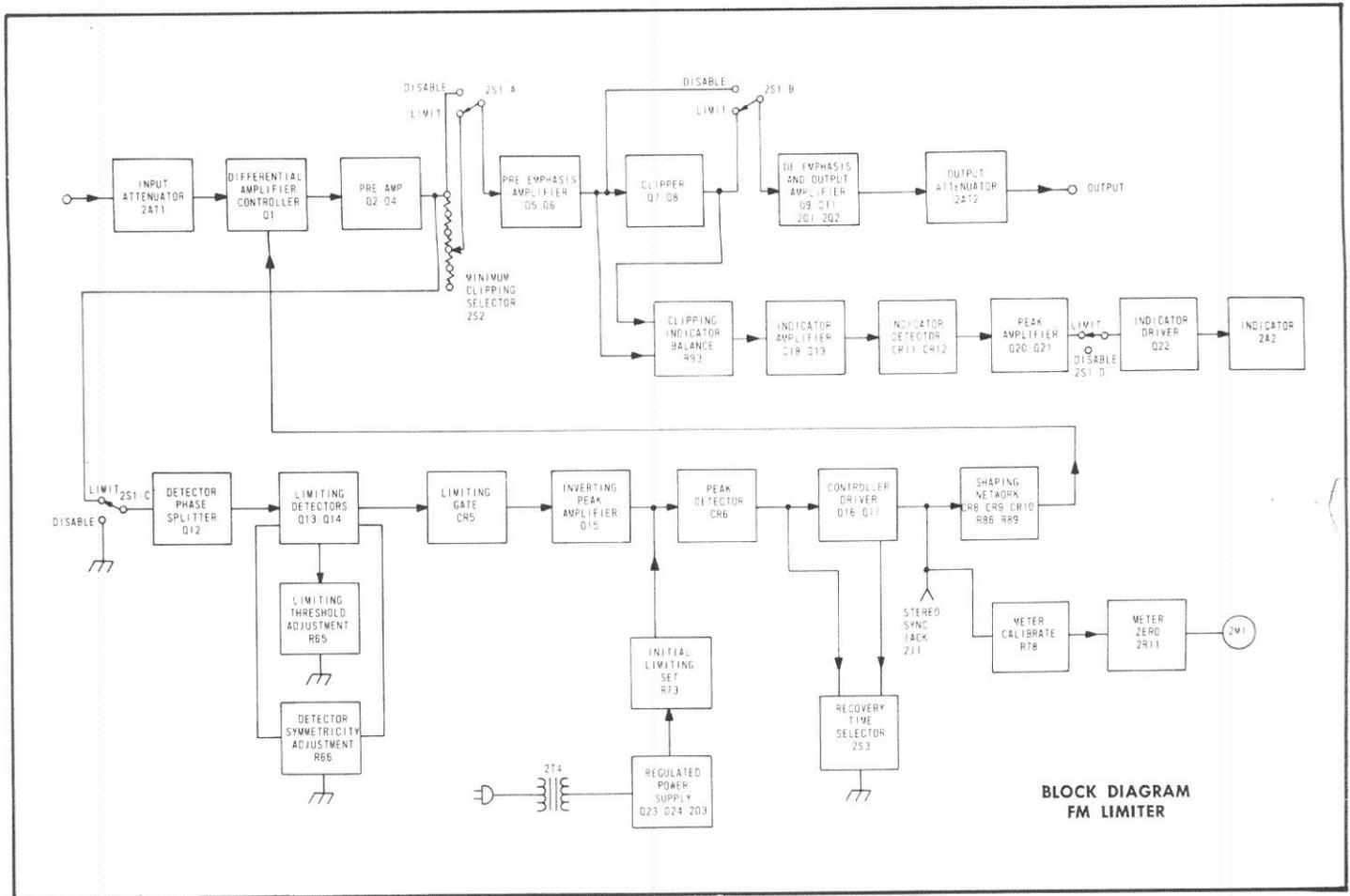
The selectable frequency threshold for instantaneous peak controlling permits the local station to select the frequency at which the instantaneous peak controller starts operating. This control function is related to the FCC 75 microsecond pre-emphasis curve, and is intended to offer stations positive protection, but lesser amounts of control action if desired.

Two FM Limiters may be synchronized for stereo operation with a small phono-plug jumper supplied.

A front panel control permits the user to disable the unit for proof of performance tests.

Only 3½" of standard rack space is required for the M-6631 FM Limiter. All operating controls are located behind the easily removed front access panel. Circuit components are readily accessible by removing the top cover. Input and output connections are provided on a barrier terminal block on the rear of the unit along with the stereo sync jack and AC power and fuse.

# FM Limiting Amplifier



## SPECIFICATIONS

**GAIN:** 50 dB,  $\pm 2$  dB max. @ 1kHz. (May be reduced by built-in input and/or output attenuators).

**FREQUENCY RESPONSE:**  $\pm 1.0$  dB, 30 Hz to 16 kHz, below threshold of instantaneous limiting.

**HARMONIC DISTORTION:** 1% Max. 30 Hz to 16 kHz, below limiting, or at 10 dB of limiting in any recovery mode.

**NOISE:** 70 dB below the threshold of limiting. (Limiting Threshold 30 Hz to 16 kHz.)

**ATTACK TIME:** 40 microseconds, maximum (no "thumping").

**RECOVERY TIME:**—Selectable:

- FAST: Dynamically Gated for 200 milliseconds
- MEDIUM: 2 seconds
- SLOW: 10 seconds

**AMOUNT OF LIMITING:** 30 dB.

**LIMITING SLOPE:** Better than 30:1. (A 30 dB increase in the input signal will produce less than a 1 dB rise in the output level.)

**INPUT LEVEL:**  $-17$  dBm to  $+23$  dBm for 10 dB of limiting.

**OUTPUT LEVEL:** Adjustable to  $+23$  dBm maximum with limiting.  $+30$  dBm amplifier maximum.

**INPUT AND OUTPUT IMPEDANCE:** 600 ohms, balanced or unbalanced.

**DIMENSIONS:**  $3\frac{1}{2}$ " H x  $13\frac{3}{8}$ " D x 19" W (standard rack).

**WEIGHT:** 14 lbs. net.; 23 lbs. shipping.

**TEMPERATURE RANGE:**  $-20^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ .  $-4^{\circ}\text{F}$  to  $+131^{\circ}\text{F}$ .

**INPUT POWER:** 115/230 volts, 50/60 Hz, 5 watts.

## ORDERING INFORMATION

Solid Statesman FM Limiter.....994-6631-001  
 Matched Pair of FM Limiters (for stereo).....994-6631-002

# Automatic Gain Control Amplifier



## MODEL M-6629

Gates Solid Statesman AGC Amplifier (M-6629) is the most versatile automatic gain control system available today. A wide range of control on the amplifier, and an adjustable attack/recovery time feature, insure programming flexibility. The high compression ratio and rapid attack time generate consistently high modulation levels, while the slow attack/recovery mode will maintain control over average program material and extend dynamic range.

The wider control range, lower distortion and rapid attack time are made possible by the use of a "differential amplifier" as the gain controlling device. Extremely close balance of this amplifier provides the desirable characteristics of the M-6629. Another feature is the selectable attack/recovery time which allows each station to select the control time best suited to its program format.

In the FAST mode, the reaction time is similar to that of other limiters now on the market. This operating mode is most desirable for those stations wanting the highest possible modulation levels.

In the MEDIUM and SLOW modes, reaction times are considerably slower. These operating modes are available to those stations which desire a lesser amount of control action than that found in the FAST mode.

Two Solid Statesman AGC Amplifiers may be synchronized for stereo operation. A small jumper cable is all that is required.

Front panel controls permit the user to disable both the expansion and compression functions separately for proof of performance tests. Under these conditions the unit has the same gain as when 15 dB of compression, the ideal operating point, is being used. This provides a test position and at the same time maintains system calibration.

Only 3½" of standard rack space is required for the M-6629. All operating controls are located behind the easily removable access panel. Circuit components are readily accessible by removal of the top cover. Input and output connections are provided on a barrier terminal block on the rear of the unit, along with the stereo sync jack and AC power and fuse.

# Premium Solid State Audio Amplifiers

## 6300 SERIES

Designed for custom audio equipment, these fully transistorized audio amplifiers incorporate engineering advances that provide excellent performance standards.

Thorough laboratory testing and extensive field use have proven the "6300" series amplifier family one of the finest in the broadcasting field.

"6300" amplifiers are noted for low noise, low distortion, wide frequency response and Solid-Statesman reliability.

Units may be installed in tandem with little or no equalizing, while maintaining an excellent signal-to-noise ratio. Modern plug-in design assures easy installation and maintenance.

Included in this complete line are: Preamplifier, program amplifier, program/AGC (automatic gain control) amplifier, power supplies, mounting trays and a compact shelf assembly for rack mounting.

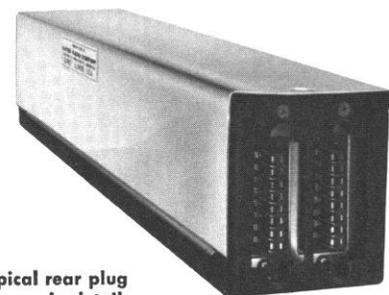
For the most critical applications, Gates recommends the "6300" Solid-Statesman Series.



M-6313A



M6314A



Typical rear plug in detail.

### TRANSISTORIZED PREAMPLIFIER

### SPECIFICATIONS

**GAIN:** 40 dB, or 46 dB (by receptacle strapping),  $\pm 0.3$  dB.

**FREQUENCY RESPONSE:**  $\pm 0.5$  dB from 20 to 20,000 Hz, or  $\pm 0.25$  dB from 30 to 15,000 Hz.

**DISTORTION:** 0.25% maximum from 30 to 15,000 Hz @ +20 dBm output.

**NOISE:** -123 dBm relative input noise, 30 to 15,000 Hz.

**SOURCE IMPEDANCE:** 150/600 ohms balanced or unbalanced, center tapped.

**LOAD IMPEDANCE:** 150/600 ohms, balanced or unbalanced.

**POWER:** 48 volts DC @ 30 mA.

**CONNECTORS:** 16 terminal, self-aligning, recessed to prevent accidental damage.

**MONITORING:** Indicator lamp provides warning of short-circuit condition.

**TEST POINT:** Pin jacks provide audio output monitoring.

**MOUNTING TRAY:** M-6341 tray and receptacle. Tray attaches to M-6689 panel and shelf assembly for mounting up to eight preamplifiers in  $3\frac{1}{2}$ " of vertical rack space.

**SIZE:** 2" wide x  $3\frac{1}{8}$ " high x  $14\frac{3}{4}$ " long.

**WEIGHT:**  $4\frac{1}{2}$  lbs. net.

**ORDER NUMBER** -----994-6313A

### TRANSISTORIZED PROGRAM/AUTOMATIC GAIN CONTROL AMPLIFIER

### SPECIFICATIONS

**GAIN:** 62 dB,  $\pm 0.3$  dB; or 80 dB,  $\pm 0.5$  dB (by receptacle strapping).

**FREQUENCY RESPONSE:**  $\pm 0.5$  dB from 20 to 20,000 Hz or  $\pm 0.25$  dB from 30 to 15,000 Hz (62 dB gain).  $\pm 0.5$  dB from 30 to 15,000 Hz (80 dB gain).

**DISTORTION:** 0.25% maximum from 30 to 15,000 Hz, (62 dB gain @ +32 dBm output level). 0.5% maximum from 30 to 15,000 Hz, (80 dB gain @ +32 dBm output level).

**NOISE:** -116 dBm relative input noise (62 dB gain mode) from 30 to 15,000 Hz. -118 dBm relative input noise (80 dB gain mode) from 30 to 15,000 Hz.

**GAIN REDUCTION: (AGC):** Amplifier input/output characteristics linear below threshold of AGC @ +20 dBm output level. 6 dB gain reduction maximum in 62 dB gain mode. After maximum of 6 dB AGC, amplifier input/output characteristics become linear again. An input level of -24 dBm will result in 6 dB gain reduction and an output level of +32 dBm. Approximately 21 dB AGC in the 80 dB gain mode. Amplifier characteristics linear below the threshold of AGC @ +20 dBm output level. An input level of -27 dBm will result in 21 dB gain reduction and an output level of +32

dBm. An external switch permits disabling the AGC action without thumps or clicks in the program circuit.

**ATTACK TIME:** AGC attack time = 25,  $\pm 3$  milliseconds.

**RECOVERY TIME:** AGC recovery time = 0.5,  $\pm 0.1$  second.

**SOURCE IMPEDANCE:** 150/600 ohms, balanced or unbalanced, center tapped.

**LOAD IMPEDANCE:** 150/600 ohms, balanced or unbalanced, center tapped.

**POWER:** 48 volts DC @ 140 mA.

**CONNECTORS:** 16 terminal, self-aligning, recessed to prevent accidental damage.

**MONITORING:** Indicator lamp provides warning of short-circuit condition.

**TEST POINT:** Pin jacks provide audio output monitoring.

**MOUNTING TRAY:** M-6342 tray and receptacle. Six PGM/AGC amplifiers mount in  $3\frac{1}{2}$ " of vertical rack space.

**SIZE:**  $2\frac{3}{4}$ " wide x  $3\frac{1}{8}$ " high x  $14\frac{3}{4}$ " long.

**WEIGHT:** 5 lbs. net.

**ORDER NUMBER** -----994-6314A

# Premium Solid State Audio Amplifiers



M-6338

## TRANSISTORIZED POWER SUPPLY

### SPECIFICATIONS

**CAPACITY:** Up to 50 M-6313 Transistor Preamplifiers, or up to 10 M-6314 Program/AGC amplifiers or any combination with a maximum rated current of 1.5 amps. Use for large systems or where growth is anticipated.

**OUTPUT:** 48 volts DC at 0 to 1.5 amps, continuous.

**RIPPLE:** Less than 1.0 mV from 0 to full load.

**INTERNAL IMPEDANCE:** 0.05 ohms.

**REGULATION:** 0.3%.

**POWER:** 117 volts nominal, 50/60 Hz, 130 watts maximum.

**SHORT CIRCUIT PROTECTION:** Resistive short circuit protection allows full operation to resume after momentary short circuits on the output. Primary fuse prevents component damage with sustained short circuits.

**UNDERVOLTAGE ALARM:** Self-contained relay actuates with approximately 10% undervoltage. Contacts are connected to the output plug to permit the operation of an external alarm.

**CONNECTORS:** 16 terminal, self-aligning, recessed to prevent damage.

**SWITCH AND FUSE:** Switch and illuminated indicating fuse holder located on the front escutcheon for AC control of the power supply.

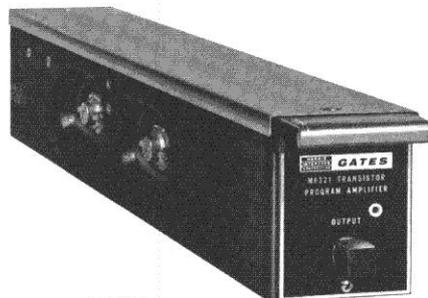
**MONITORING:** Neon lamp (to indicate presence of AC supply voltage), and load lamp (to indicate output voltage). Output sampling jack located on the front escutcheon.

**MOUNTING TRAY:** M-6344 tray and receptacle. Four M-6338 power supplies mount in 3½" of vertical rack space.

**SIZE:** 4½" x 3½" high x 14¼" long.

**WEIGHT:** 7½ lbs. net.

**ORDER NUMBER** .....994-6338



M-6321

## TRANSISTORIZED PROGRAM AMPLIFIER

### SPECIFICATIONS

**GAIN:** 62 dB,  $\pm 0.3$  dB, unterminated input.

**FREQUENCY RESPONSE:**  $\pm 0.5$  dB from 20 to 20,000 Hz or  $\pm 0.25$  dB, 30-15,000 Hz.

**DISTORTION:** 0.25% maximum from 30 to 15,000 Hz @ +32 dBm output.

**NOISE:** -116 dBm relative input noise, 30 to 15,000 Hz.

**SOURCE IMPEDANCE:** 150/600 ohms, balanced or unbalanced, center tapped.

**LOAD IMPEDANCE:** 150/600 ohms, balanced or unbalanced, center tapped.

**POWER:** 48 volts DC @ 140 mA.

**CONNECTORS:** 16 terminal, self-aligning, recessed to prevent damage.

**MONITORING:** Indicator lamp provides warning of short-circuit condition.

**TEST POINT:** Pin jacks provide audio output monitoring.

**MOUNTING TRAY:** M-6426 tray and receptacle for up to six program amplifiers in 3½" of vertical rack space.

**SIZE:** 2¾" wide x 3½" high x 14¼" long.

**WEIGHT:** 4½ lbs. net.

**ORDER NUMBER** .....994-6321



M-6421

## TRANSISTORIZED POWER SUPPLY

### SPECIFICATIONS

**CAPACITY:** Up to ten M-6313 preamplifiers, or two M-6314 Program/AGC amplifiers, or any system combination with a maximum rated current not exceeding 300 mA for use in smaller systems.

**OUTPUT:** 48 volts DC at 0 to 300 mA continuous.

**RIPPLE:** Less than 1.0 mV from 0 to full load.

**INTERNAL IMPEDANCE:** 0.05 ohms.

**REGULATION:** 0.3%.

**POWER:** 117 volts nominal, 50/60 Hz, 30 watts.

**SHORT CIRCUIT PROTECTION:** Resistive for momentary short circuits on output. Primary fuse prevents damage from sustained short circuits.

**CONNECTORS:** 16 terminal, self-aligning, recessed to prevent damage.

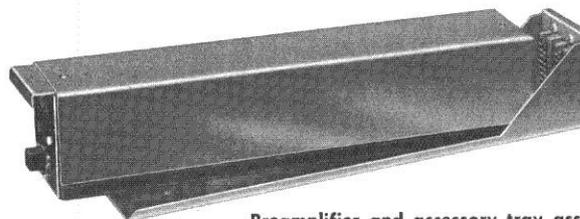
**SWITCH AND FUSE:** Located on front escutcheon.

**MOUNTING TRAY:** M-6422 tray and receptacle. Six M-6421 power supplies mount in 3½" of vertical rack space.

**SIZE:** 2¾" wide x 3½" high x 14¼" long.

**WEIGHT:** 5½ lbs. net.

**ORDER NUMBER** .....994-6421



Pre-amplifier and accessory tray assembly. Plugs on all amplifiers are recessed to assure no damage to pins.

# Audio Amplifier Accessories

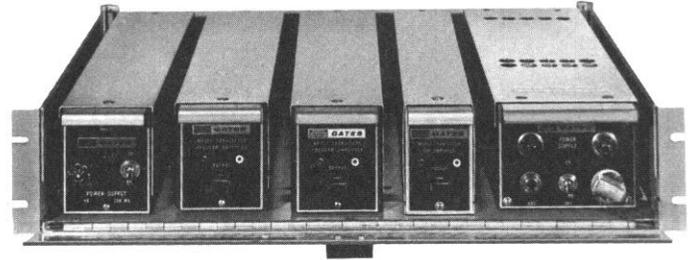
## ACCESSORIES

Complete mounting accessories are available for the "6300" series Solid-Statesman amplifiers. The M-6689 panel and shelf assembly unit occupies only 3½" x 19" of rack space. Built of heavy-gauge, plated, non-corrosive steel, finished in beige-gray, with hinged front panel. Individual mounting trays have been designed for each model amplifier and power supply.

In system practice a typical audio input signal may pass through four amplifiers, four faders, nine transformers, and be bridged a dozen or more times, yet the system performance at the output is equal to or better than any individual amplifier specification. Of particular importance is the higher rated output levels of both preamplifiers and program amplifiers to accommodate greater dynamic range at no increase in distortion.

NOTE: The source of load impedance of the amplifiers as listed in the specifications is the recommended impedance of the connecting device (such as a microphone, attenuator, line or loudspeaker). However, the input impedance of all four amplifiers is approximately ten times higher than the source impedance, giving the systems designer greater flexibility.

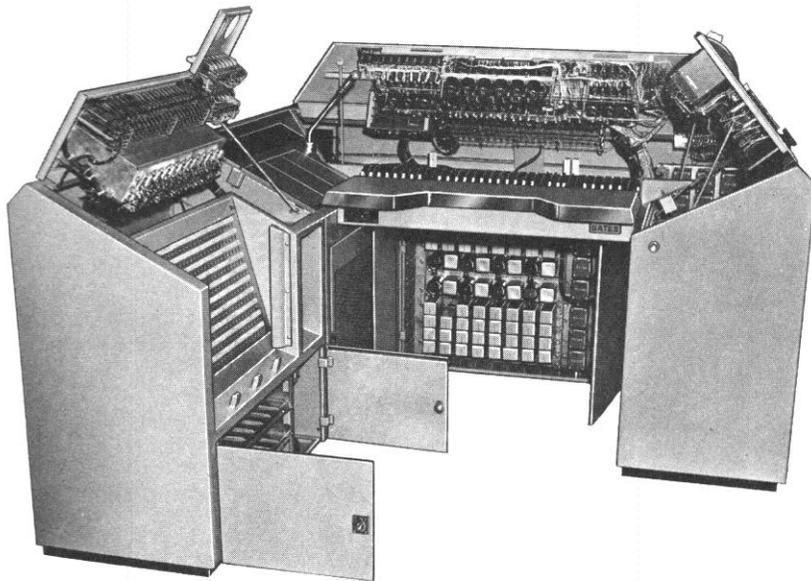
The output impedance is approximately 1/10 the load impedance, which permits multiple bridging without any degradation of the output signal.



Above: M-6689 panel and shelf assembly, showing several "6300" series Solid-Statesman units. This assembly requires only 3½" x 19" of rack space.

## ORDERING INFORMATION

Mounting tray for preamplifier .....	994-6341
Mounting tray for program amplifier .....	994-6426
Mounting tray for program/AGC amplifier .....	994-6342
Mounting tray for M-6421 power supply .....	994-6422
Mounting tray for M-6338 power supply .....	994-6344
Panel and shelf assembly .....	994-6689



## TELEVISION AUDIO CONSOLE

The production console at the left is now in use in a leading television network, and houses 57 of the "6300" series Solid-Statesman transistorized units. The remarkable capabilities of this completely self-contained console include: mixing from 25 input audio sources simultaneously into nine separate program channels, each with automatic level control; built-in video monitoring, ten audio monitoring channels; twelve microphone equalizers; two graphic program equalizers; five sound effects filters; two reverberation send and return channels; vertical attenuators; three video controlled audio channels, plus many other special features.

# Rack Cabinets

## RAK-70

Designed with the flexibility to accommodate all types of equipment. Whether used as a rack only, or a complete cabinet with all accessories, the RAK-70 can fill almost any special requirement of the individual broadcaster.

Mechanical construction of each component gives the RAK-70 ruggedness and rigidity. There is not the slightest torsion in the doors or cabinet framework.

The basic RAK-70 cabinet assembly includes: two panel mounting angles; an air filter mounted in the rear of the cabinet base, with provision for mounting an air filter in the base front; convenient knock-outs for wiring in the bottom and sides of the base; and new EIA standard panel-mounting hole spacing.

Optional accessories for the RAK-70 are: side panels; louvered top; rear door with or without louvers; fan kit (includes 200-cfm base-mounted fan to maintain a constant, positive pressure inside the cabinet); air filter kit (for installing air filter in base front); and rear mounting angles.

To order, see "Ordering Information" below.

### SPECIFICATIONS

**HEIGHT OVER-ALL:** 78".

**WIDTH OVER-ALL:** 23½".

**DEPTH OVER-ALL:** 23¾".

**PANEL SPACE:** 19" × 70".

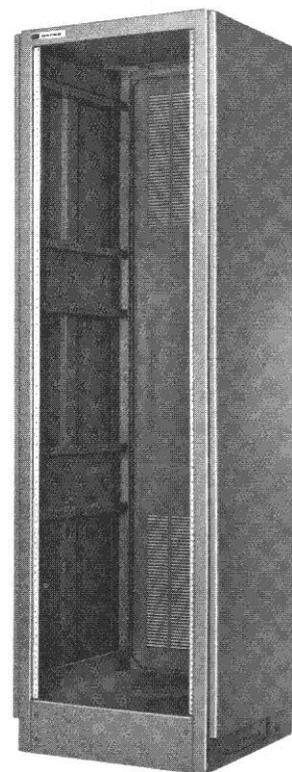
**PANEL MOUNTING:** New standard EIA rack multi-

ples, 10-32 mounting screws provided.

**FINISH:** Beige-gray, smooth finish.

**WEIGHT:** Net 160 lbs.; domestic packed, 175 lbs.; export packed, 275 lbs.; cubage, 28 cubic feet.

**TO ORDER:** See "Ordering Information" below.



## RAK-7

The RAK-7 is one of the finest solid side rack type cabinets designed specifically to accommodate all types of broadcast equipment. Built of lightweight steel, this cabinet has solid sides, a solid base, full size rear door with louvers at top and bottom for efficient ventilation.

### SPECIFICATIONS

**HEIGHT OVER-ALL:** 78".

**WIDTH OVER-ALL:** 23½".

**DEPTH OVER-ALL:** 19½".

**DOOR SWING:** 20½".

**PANEL SPACE:** 19" × 71¾".

**CLEARANCE BEHIND PANEL:** 17".

**PANEL MOUNTING:** Standard rack multiples 10-32 mounting screws provided.

**FINISH:** Beige-gray.

**WEIGHT:** Net 100 lbs.; Domestic packed 115 lbs.; Export packed 200 lbs.; Cubage: 18 cu. ft.

**TO OREDER:** See "Ordering Information" below.

### ORDERING INFORMATION

#### RAK-70:

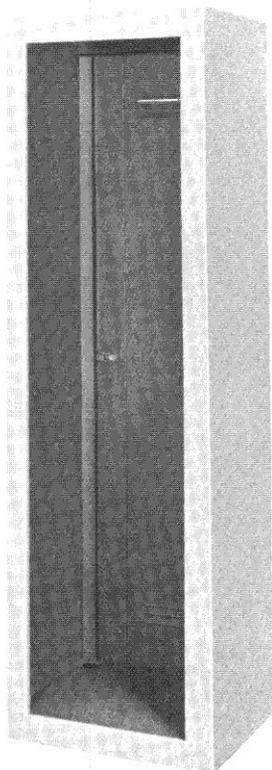
Basic cabinet assembly .....	994-6643-002
Side Panel .....	994-6664-001
Louvered top .....	994-6665-001
Door with Louvers .....	994-6671-001
Door without Louvers .....	994-6671-002
Key type lock for doors .....	448-0320-000
Fan kit .....	994-6666-001
Air filter kit .....	994-6668-001
Air filter (replacement) .....	448-0288-000
Rear mounting angle (two must be ordered) .....	827-4789-002

#### RAK-7

Rack cabinet .....	994-5527-003
Joiner trim .....	994-5577-001

#### CR-70 (not shown)

Waist-high rack cabinet. Heavy cold rolled furniture grade steel, resistance welded. Size 37¾" H x 23¾" W x 23" D. Rack space 33¼" x 19" .....	994-5651-001
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# Program And Monitoring Amplifiers

## PROGRAM OR LINE AMPLIFIER

Studio equipment facilities often may be expanded by adding a second or third program amplifier. In single channel consoles the audition bus may be used for separate programming of FM by inserting the M-5576B program amplifier between the bus and the line. For bridging, standby and network feeds, this amplifier mounted in the equipment rack is ideal.

This high gain, low distortion, 4-stage program amplifier includes a self-contained power supply and requires only 5¼" of rack space. A dual gain control with one section in the second stage grid and the other section in the third stage grid assures a low noise ratio at any gain setting.

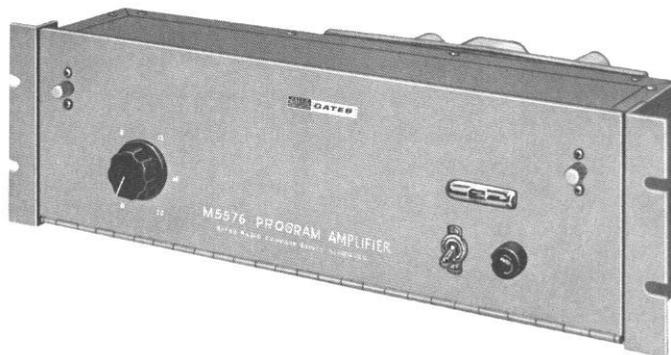
### SPECIFICATIONS

**GAIN:** 75 dB,  $\pm 2$  dB.

**RESPONSE:**  $\pm 1\frac{1}{2}$  dB, 30-15,000 Hz.

**DISTORTION:** 0.75% at +12 dBm output, 30-15,000 Hz. 1% at +22 dBm output, 50-15,000 Hz.

**NOISE:** 60 dB below +12 dBm output or equal to -120 dBm relative input noise.



**IMPEDANCES:** Input and output: 150/250 or 500/600 ohms.

**POWER:** 117 volts, 50/60 Hz, 45 watts.

**TUBES:** (3) EF86 and (1 each) 12AU7, 6X4.

**MECHANICAL:** 19" x 5¼" x 7½" deep. Weight packed (domestic), 27 lbs.; (export) 50 lbs. Cubage: 2 cubic feet. Finish: beige-gray.

### ORDERING INFORMATION

Program amplifier with tubes.....994-5576B  
Spare 100% tube kit.....990-0450



## MONITORING AMPLIFIER

In quality audio systems, the need for excellence in loud-speaker distribution is paramount. Here is an outstanding ultra linear amplifier offering a variety of input impedances, very low distortion, excellent power output and high gain. Input impedances for matching 30/50 and 150/250 ohm lines or bridging at 30,000 ohms are available. An unusually high gain of 100 dB allows the M-5575 monitoring amplifier to be used directly from a mixer program bus, low level turntable output or a microphone. The distortion is less than 1%, though a full 10 watts of power is produced from a -60 dBm input.

### SPECIFICATIONS

**GAIN:** 100 dB or bridging 50 dB.

**RESPONSE:**  $\pm 1\frac{1}{2}$  dB, 30-15,000 Hz.

**DISTORTION:** 1% or less 50-15,000 Hz at +40 dBm (10 watts).

**NOISE:** 60 dB or better below +40 dBm, measured at -50 dBm input.

**IMPEDANCES:** (Input) 30/50 or 150/250 ohms at 100 dB gain. 30,000 ohms bridging at 50 dB gain. (Output) 8 and 16 ohms.

**POWER:** 117 volts, 50/60 Hz, 85 watts.

**TUBES:** (3) 12AX7, (2) EL84, (1) GZ34, (1) OA2, (1) OB2.

**MECHANICAL:** 19" x 7" x 8" deep. Weight packed (domestic), 34 lbs.; (export) 59 lbs. Cubage: 3 cubic feet. Finish: beige-gray.

### ORDERING INFORMATION

Ultra linear monitoring amplifier, with tubes.....994-5575  
Spare 100% tube kit.....990-0303  
Speaker matching transformer.....478-0275

# Monitoring And Utility Amplifiers

## TRANSISTOR MONITOR AMPLIFIER

Offering the superb performance of transistors, Gates M-6108 professional 8-watt monitoring amplifier is designed for the exacting demands of modern broadcasting. Only 4½" x 8½" x 3½" including self-contained power supply, it will fit anywhere, even in the corner of a loudspeaker cabinet. The almost negligible operating temperature lends to its versatility.

The M-6108 will produce 20-20,000 Hz response within ±1 dB with no more than 1% distortion at a full eight watts output. Gain of 53 dB from a 600 ohm input or 39 dB from the 6,000 ohm bridging input assures wide versatility. The output of 4-16 ohms for direct speaker connection may be changed to other higher impedances through the use of an optional external matching transformer.



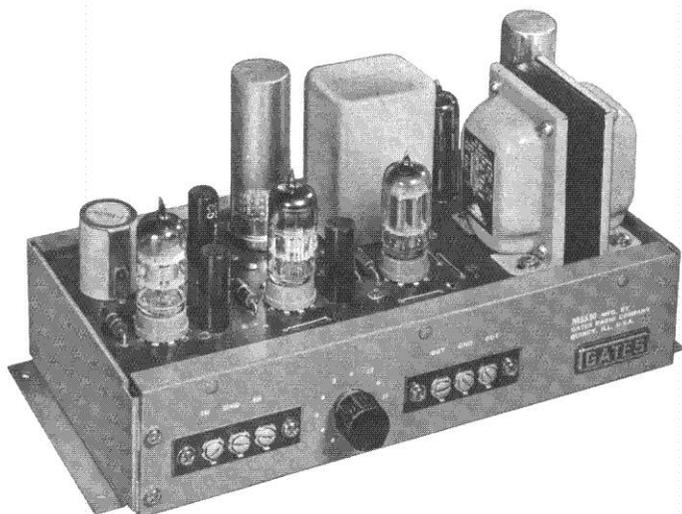
## SPECIFICATIONS

**GAIN:** 53 dB using 600 ohm input; 39 dB using 6000 ohm bridging input.  
**RESPONSE:** 20-20,000 Hz ±1 dB.  
**DISTORTION:** 1% or less 8 watts output, 50-15,000 Hz. 1% or less 6 watts output, 30-15,000 Hz.  
**NOISE:** 85 dB below +39 dBm output (8 watts).  
**IMPEDANCES:** (Input) 600 ohms matching, 6000 ohms bridging, transformer input. (Output) 4 to 16 ohms.

**POWER:** 117 volts, 50/60 Hz, 18 watts.  
**SIZE:** 4½" wide, 8½" long, 3½" high.  
**WEIGHT:** 4 lbs. net.

## ORDERING INFORMATION

Eight-watt transistorized monitor amplifier.....994-6108



## SINGLE CHANNEL UTILITY AMPLIFIER

Often called the most important of amplifiers, as it fills almost any amplifier need. AC operated and completely self-contained, the M-5530 all purpose amplifier operates as (a) a single microphone remote amplifier, (b) turntable preamplifier with ample gain for passive equalizers, (c) standby program amplifier, and (d) a microphone amplifier for medium level tape recording. Mounts nicely in turntable cabinet. Ideal for permanent remotes.

## SPECIFICATIONS

**GAIN:** 81 dB.  
**RESPONSE:** 30-15,000 Hz ±1½ dB.  
**DISTORTION:** 1% or less 50 to 15,000 Hz at +8 dBm output or 2% at +18 dBm.  
**NOISE:** 60 dB below +8 dBm.  
**IMPEDANCES:** (Input) 30/50 or 150/250 ohms. (Output) 150/250 or 500/600 ohms.  
**POWER:** 115 volts, 50/60 Hz. Consumption 15 watts.  
**TUBES:** (2) EF86/6267, and (1 each) 12AU7, 6X4.

**SIZE:** 11" x 5" x 5¾" deep.  
**WEIGHT:** Net 9½ lbs. Packed 20 lbs. Cubage: 2 cubic feet.

## ORDERING INFORMATION

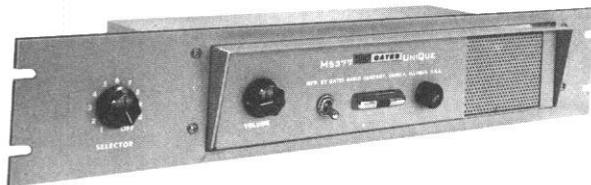
Single channel utility amplifier with tubes.....994-5530  
Chassis connector (female).....612-0194  
Microphone connector (male).....610-0182  
Spare 100% tube kit.....990-0280

HARRIS  
INTERTYPE  
CORPORATION

**GATES**

# Audio Accessories

## CUEING AMPLIFIER



Program preview of 10 audio circuits may be selected by a rotary switch with this high gain, compactly designed cueing amplifier. Requiring only 3½" of rack space, Gates Uni-Que amplifier has a self-contained loudspeaker and is easily adaptable to convenient desk mounting. High gain allows cueing direct from turntable, tape, projector circuits and microphone preamplifier outputs. Input is either low impedance or bridging. Speaker has terminals for muting when used in the control room. Front panel includes gain control, 10 selector switch (plus "off" position), power switch, pilot light and fuse.

### SPECIFICATIONS

**GAIN:** 70 dB low impedance matching, 35 dB bridging, ±2 dB.  
**INPUT LEVEL:** -20 dBm matching or +22 dBm bridging.  
**RESPONSE:** Peaked for high intelligibility.  
**IMPEDANCES:** (Input) 30/50, 150/250 or 10,000 ohms bridging. (Output) to self-contained speaker with muting terminals external.  
**NOISE:** 50 dB or better below speaker level of about +30 dBm.  
**POWER:** 105/125 volts, 50/60 Hz, 25 watts.  
**POWER SUPPLY:** Solid state, transformer input (not AC/DC).  
**TUBES:** (1) 12AX7, (1) 50C5.  
**MECHANICAL:** 19" x 3½" x 6½" deep. Weight packed: (domestic) 16 lbs., (export) 30 lbs. Cubage: 2 cubic feet. Finish: Beige-gray.

### ORDERING INFORMATION

Cueing Amplifier with tubes.....994-5377  
 Spare 100% tube kit.....990-0305

## SWITCH AND FUSE PANEL

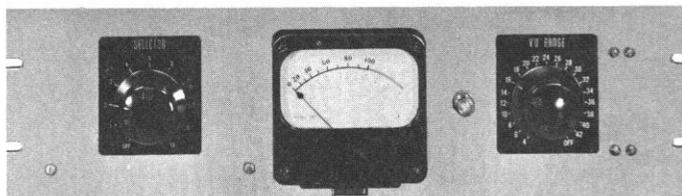


Each rack of audio and radio frequency equipment should have a master switch and fuse panel. Usually mounted at the bottom of the rack, the Gates M-4242 switch and fuse panel includes dual pilot lamps to indicate input and output voltage, dual fuses and D.P.D.T. primary switch. Rating 15 amperes at 115 volts, AC. Size: 19" x 3½" x 3" deep. Finish: Beige-gray. Weight packed: 10 lbs. Cubage: 1 cubic foot.

### ORDERING INFORMATION

Switch and fuse panel.....994-4242

## VU METER AND RANGE PANEL



A 5% or better accuracy is maintained throughout the 2 VU per step, +4 to +42 VU range. The 10-position input selector switch permits permanent installation to regularly checked circuits. For proof of performance measurements, equipment calibration, input level measurements from remote circuits and output levels (up to 10 watts), the VU-22 meter panel offers complete versatility. Input: 7500 ohms to bridge a 500/600 ohm line. Frequency response: Flat 20-20,000 Hz. Size 19" x 5¼" x 3" deep. Finish: Beige-gray and black. Shipping weight packed: 12 lbs. Cubage: 1 cubic foot.

### ORDERING INFORMATION

VU-22 VU meter and range panel.....994-4577  
 Terminal board accessory for above.....994-4648

## STUDIO WARNING LIGHTS



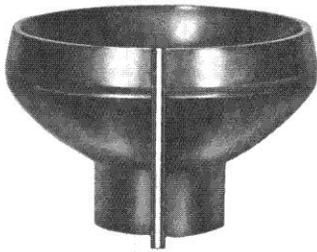
An unusually attractive studio fixture with edgewise lighting of a plexiglass transparent plate. Incandescent lamp is housed in gun-metal casing. Mounting is usually above studio door. "On Air" lettering is in red with other nomenclatures, such as Studio A", etc., supplied in black. Housing is well ventilated, without light leakage. Size: 18" wide, 3" front to back, and 6½" from bottom of glass to top of housing. 117 volts, 50 watts. UL approved.

### ORDERING INFORMATION

LETTERING	ORDER
On Air (in red).....	406-0269
Special lettering up to 12 characters (specify).....	406-0278
On The Air (QF-15 Rollins).....	406-0285
Studio A (QF-15 Rollins).....	406-0280
Studio B (QF-15 Rollins).....	406-0281

# Audio Accessories

## VA PROGRAM FADER KNOBS



The VA program knobs are used on all Solid-Statesman consoles and are specifically recommended for mixer and master gain functions. Designed to meet human engineering concepts, these VA fader knobs are fashioned for the control operator's hands, where touch and feel are of major importance. Matching black anodized dial available.

### ORDERING INFORMATION

VA knob only.....	650-0130
Dial for VA knob.....	648-0045
Knob decal kit (6 colors—5 of each).....	646-0379

## STUDIO CUE/INTERCOM SPEAKER

The studio cue/intercom speaker is a modern design, high efficiency cue speaker mounted in a cast aluminum housing and finished in black, with attractive grill. It may be used for cue listen or cue talk-back. Matches either 48 or 600 ohms. Size: 5 1/8" wide, 6 1/2" high and 4" deep, with a 30° slope when placed on desk.



### ORDERING INFORMATION

Studio cue/intercom speaker.....	994-6424
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## DESK OR CONSOLE TOP VU METER

Used on the President and Ambassador Solid-Statesman consoles, this completely housed VU meter is ideal for many audio applications. Standard scale B illuminated 4" VU meter in cast aluminum housing 5 1/8" x 6 1/2" x 4" deep.



### ORDERING INFORMATION

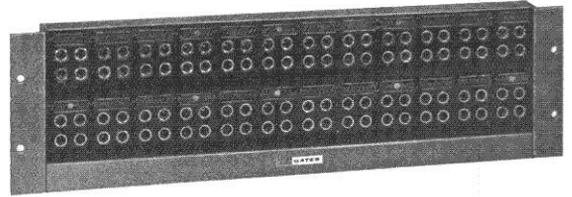
VU meter (30° slope when placed on desk).....	994-6208
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## SPEAKER MATCHING TRANSFORMER

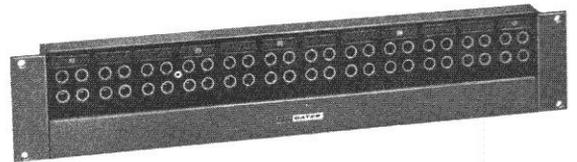
Where many speakers are used, the normal 8 ohm voice coil impedance will cause a mismatch. This transformer has a primary of 48 ohms and a secondary of 8 ohms. Thus, six transformers in parallel will reflect the normal 8 ohms output impedance of the studio monitor amplifier.

Speaker matching transformer (not shown).....	478-0275
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## PATCH PANELS AND CORDS



Illustrated above are two PJ-341 jack strips on a PD-2 jack mat to supply 48 pairs or 96 jacks on a 19" x 5 1/4" rack space.



Twenty-four pairs or 48 jacks is a PJ-341 jack strip on a PD-1 jack mat. Rack space 19" x 3 1/2".



Shown above is the PJ-343 twenty-four jack, 12-pair unit requiring only 19" x 1 3/4" rack space. No jack mat is required.

Industry standard double jack panels. Jack strips and jack mats listed separately below for ease in ordering. Jacks are closed circuit type to normal through audio circuits when patch cord plugs are not inserted. Contacts are silver alloy with springs, non-aging, non-ferrous metal to assure lasting tension. Molded bakelite form, steel reinforced. Individual designation strips with slip-in holders for each jack pair.



Patch cords have double plug each end, with cords in 4 lengths. Cords shielded and covered with double black braid, with extra reinforcement 6" from each plug end.

### ORDERING INFORMATION

Jack strip only (PJ-343), 24 jacks or 12 pairs (no jack mat required).....	612-0307
Jack strip only, (PJ-341), 48 jacks or 24 pairs (less mat).....	612-0306
Jack mat for one PJ-341 jack strip (PD-1).....	994-4399
Jack mat for two PJ-341 jack strips (PD-2).....	994-4400
Jack mat for three PJ-341 jack strips (PD-3).....	994-4401
Double patch cord with 2' cord (PJ-12).....	250-0002
Double patch cord with 3' cord (PJ-13).....	250-0003
Double patch cord with 4' cord (PJ-14).....	250-0004
Double patch cord with 5' cord (PJ-15).....	250-0005

# Audio Accessories

## TRANSCRIPTION STORAGE CABINETS

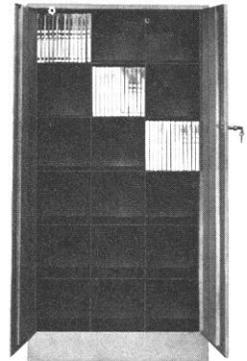
For convenient filing and protection of records or tapes, use modern Wallach storage cabinets. Models available for all

sizes of discs and tape reels. Modular systems for desk and floor mounting, with doors and locks, also available.

### DISC CABINET



### DOUBLE DOOR TAPE CABINETS, WITH LOCK



Cabinet for 7" reel boxes. 18 compartments — capacity to 288 reel boxes. 29" x 60" x 10" deep.

Cabinet .....448-0130

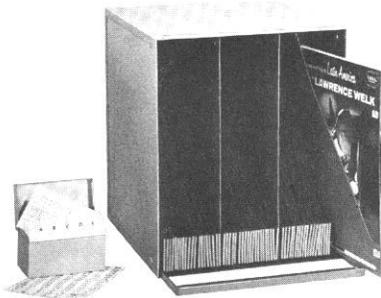
Cabinet for 10½" reel boxes. 12 compartments — capacity to 192 reel boxes. 29" x 60" x 10" deep.

Cabinet .....448-0178

Protect those expensive and fragile 12" LP's as they should be. Holds 540 12" LP's with a heavy red wallet for each. Includes two sets of numbers, 1620 printed catalog cards and card file. Size: 60" x 29" x 14" deep. Double door with lock and key.

Disc cabinet .....448-0134

### LP ALBUM CABINET



### TAPE CABINETS



Holds 42 reel boxes of 7" tape reels. Has six compartments. May be stacked as desired. 13½" wide, 12½" high, 8½" deep.

Cabinet .....448-0043

Holds 21 reel boxes of 10½" tape reels. Has three compartments. May be stacked as desired. 13½" wide, 12½" high, 12" deep.

Cabinet .....448-0074

Holds sixty 7", 10" or 12" albums. Includes cataloging system with index cards for fingertip control. Size: 13½" x 15½" x 14" deep.

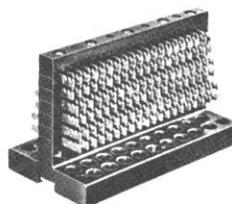
Cabinet for 60 albums .....448-0230

As above, with snap catch door .....448-0231

## CONNECTORS

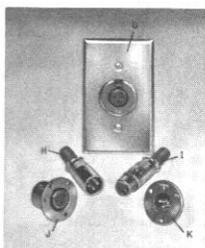
- (G) Single, 3 prong, female, 1 wall plate (XLR3-35) .....612-0188
- (H) Cable plug, 3 prong, male. (XLR3-12C) .....610-0182
- (I) Cable receptacle, female, 3 prong (XLR3-11X) .....612-0182
- (J) Chassis receptacle, female, 3 prong (XLR3-13) .....612-0194
- (K) Chassis receptacle, male, 3 prong (XLR3-14) .....610-0194

## AUDIO TERMINAL BLOCK



For inter-rack or jack field wiring. Molded one-piece black phenolic with base 3½" x 6½". 3½" high. Plated brass terminals. Polished phenolic finish. Mounts in Gates RAK-1 rack cabinet with BRK-1 bracket. 120 terminals in six rows.

Audio terminal block .....614-0339



# Audio Accessories

## BOOM STANDS



Provide convenient and proper microphone placement where correct position cannot be reached with conventional stands. Boom length 62 inches, height adjustable from 4 ft to 6 ft. Base diameter 17 inches, tubular sections super-chrome plated. "Snap On" hangers provided for microphone cable. Shipping weight 33 lbs.

Boom Stand without casters.....720-0061  
 Boom Stand with silent casters.....720-0062

## ADJUSTABLE MICROPHONE ARM



Flexo Mikester Mike Support Arm clamps or screws to any position. Swings to 36 inches fully extended. Mounts any microphone up to 4 lbs. Shipping weight 7 lbs.

Flexo Mikester.....720-0040

## HEADPHONES



BA-200 Brush. Smartly styled, unusually sensitive high impedance crystal headset. Dual earpieces. Monophonic service.

Dual Headset.....721-0003

BA-201 Brush. Single headpiece version of above. High impedance crystal type.

Single Headset.....721-0004

TRIM economy headset. Featherweight dual earpiece model, recommended for utility monitoring use such as remotes, etc. Impedance 24,000 ohms.

Model 107 TRIM Dual Headset.....721-0006

STEREOPHONIC Headphones. High impedance dual headset for control room monitoring with stereophonic consoles such as the Gates Executive or Stereo Statesman.

BA-206B Stereo Headset.....721-0009

511 TRIM Headphone Plug.....610-0273

## DESK STANDS



Model 418. Heavy cast iron stand finished in medium gray. Specifically designed for microphones using small type stud such as Gates G-100 and G-200. Net weight 3 lbs.

Desk Stand.....720-0026

Model 419. Heavy weight desk stand similar to the Model 418, but for use with the Gates G-300 or similar microphones.

Desk Stand.....720-0028

DS-7. Adjustable desk stand for all popular microphones. Tubular section adjusts from 8 to 13 inches. Heavy chrome-plated stem and gray cast base with felt feet. Shipping weight 3 lbs.

Desk Stand.....720-0076

DS-5. Non-adjustable desk stand. Chrome-plated tube 4" high. 6" diameter cast iron base with rubber feet. Weight 2 lbs.

Desk Stand.....720-0035

TS-8. Banquet stand. Adjustable 14½" to 26". Chrome stem sections with velvet-action clutch adjustment. 8" diameter base. Wt. 5 lbs.

Banquet Stand.....720-0150

## TAPE SPLICER



Deluxe "Stereo 4" tape splicer with integral tape dispenser for splicing tape. Two-position, replaceable cutting blades. Makes diagonal splice, cuts tiny trims on sides. Made of strong "Implex" plastic. With 100' roll of ½" splicing tape and instructions. Shipping wt., 1 lb. Made by Robbins.

"Stereo 4" Tape Splicer.....732-0099

## EDIT-ALL PROFESSIONAL SPLICER



The standard editing device used by professional recording engineers. It is the only precision editing block especially designed with a curved groove to hold the tape firmly without damage. Designed by a network tape editor. Precision machined, will never wear out. Kit complete with block, Mylar splicing tape, blade, marking pencil, and instructions. Wt., 1 lb.

Edit-all Splicing Kit.....732-0167

## FLOOR STANDS



MS-25. Professional microphone floor stand. "Air-Lock" cushion controls drop, prevents slippage and microphone damage. Adjusts from 37 to 66 inches. Heavy, triangular base 17 inches in diameter. Full chrome with medium gray base. Fits all microphones listed in this catalog. Weight, 25 lbs.

Professional Floor Stand.....720-0048

MS-10C. Excellent for average weight microphones. Has 10" diameter base, chrome 2-section tube. Adjusts 35 to 64 inches. Wt., 13 lbs.

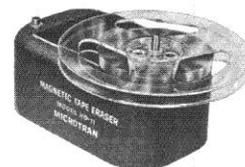
Utility Floor Stand.....720-0047

BB-1. "Baby Boom" stand attachment. Converts any floor stand with ¾"-27 thread to boom-type stand. 32" boom, adjustable counter balance for various microphones. Wt., 6 lbs.

Baby Boom attachment (no stand).....720-0059

NOTE: All mic stands on this page have ¾"-27 thread, which is standard in the industry.

## BULK TAPE ERASER



Professional model HD-11M. Heavy duty unit erases entire reel of tape at once, in seconds. Lowers residual noise 3 to 6 dB below most erase-head levels. Recommended for tape cartridges or reels up to 10½". Adaptor hub available for 10½" NAB reels. 117 volts, 50/60 Hz. Weight, 9 lbs. Made by Microtran.

Bulk Eraser.....732-0096

Adaptor Hub for 10½" reels.....732-0043

## JIFFY TAPE ERASER



Compact unit erases tape conveniently. For cartridges or any size reel. Holds in hand, with momentary pushbutton operation. 117 volts, 60 Hz. Weight, 5 lbs.

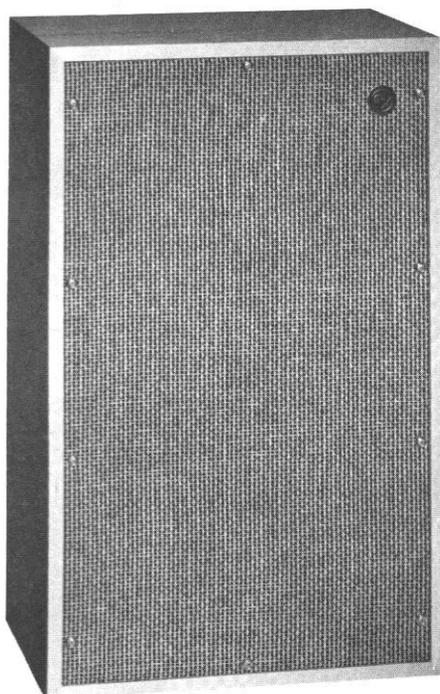
Jiffy Hand-Type Tape Eraser.....730-0102

## TAPE HEAD DEMAGNETIZER

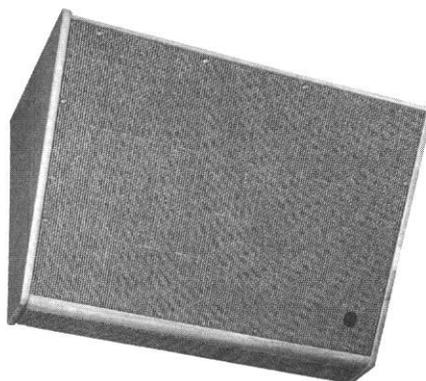
Model 400. Removes residual magnetism from tape heads for optimum signal-to-noise ratio and protects tapes against deterioration. For 117 volts, 60 Hz. Wt., 1 lb.

Head Demagnetizer.....730-0180

# Speakers and Speaker Systems



Sentry II  
floor model.



Sentry I  
wall or  
ceiling model

## STUDIO MONITOR SYSTEMS

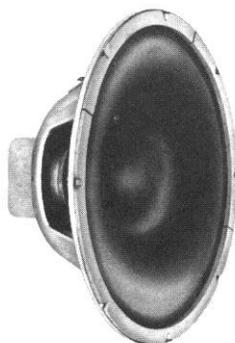
Designed specifically for monitor use in recording and broadcast studios, these loudspeaker systems permit precise monitoring and equalization uncolored by monitor speakers. Precision driver components include 12" Radax loudspeaker, diffraction horn, high frequency driver and special crossover. Quality hardwood cabinet, sanded and sealed, ready for finishing. Neutral cane grill cloth.

### SPECIFICATIONS

**FREQUENCY RESPONSE:** 30 to 20,000 Hz.  
**EIA SENSITIVITY RATING:** 49 dB.  
**POWER CAPACITY:** 20 watts.  
**IMPEDANCE:** Tapped transformer accommodates 16, 150 or 600 ohms.

### ORDERING INFORMATION

**FLOOR MODEL:** Finished on all four sides. Size: 32" x 20" x 13" deep. Net weight: 63 lbs.  
**ORDER NUMBER** ..... 722-0051  
**WALL MODEL:** Size 21½" x 37" x 16¾" deep. Net weight: 82 lbs.  
**ORDER NUMBER** ..... 722-0044



## GATESPEAKER 12

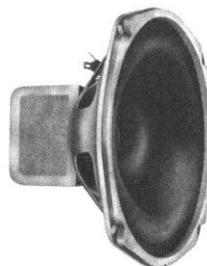
This is an ideal monitor speaker for the broadcaster, with high-quality, wide range performance, plus heavy duty construction. Thirteen watts power handling capability and response from 35 to 17,000 Hz. 5½" over-all depth. An excellent replacement speaker.

### SPECIFICATIONS

**MAGNET WEIGHT:** 4.64. **POWER:** 13 watts.  
**VOICE COIL IMPEDANCE:** 8 ohms. **SIZE:** 12 inches.

### ORDERING INFORMATION

Gatespeaker 12 ..... 722-1200



## GATESPEAKER 8

Offering wide range, sturdy construction and minimum cost, the Gatespeaker 8 is one of the finest utility monitor speakers available. Will reproduce lows to 50 Hz and highs to 12,000 Hz.

### SPECIFICATIONS

**MAGNET WEIGHT:** 2.64. **POWER:** 11 watts.  
**VOICE COIL IMPEDANCE:** 8 ohms. **SIZE:** 8 inches.

### ORDERING INFORMATION

Gatespeaker 8 ..... 722-0800

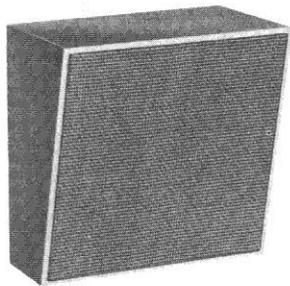
## SPEAKER TRANSFORMERS AND PADS

TR-15 matching transformer. 15 watt capacity. 35-20,000 Hz, ±2 dB. Pri 333/500/1000/2000 ohms. Sec 4/8/16 ohms.

Matching transformer TR-15 ..... 478-0250  
 Transformer, primary 45/48 ohms, sec. 8 ohms ..... 478-0275\*  
 Volume control, 8-ohm T-pad ..... 554-0227  
 Volume control, 4-ohm T-pad ..... 554-0180

\*Use with Gates audio control consoles.

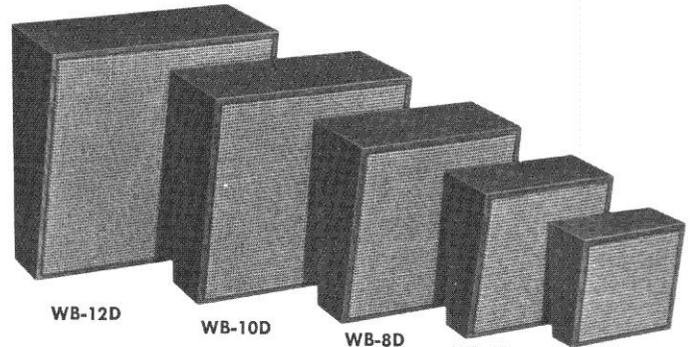
# Wall and Corner Baffles



DWB-12A



DWB-8A



WB-12D

WB-10D

WB-8D

WB-6D

WB-4/5D

## DELUXE WALL BAFFLES

Natural hardwood, richly finished in Dusk Walnut or Antique Birch . . . fits into the finest surroundings. Genuine birch has rich satin-smooth appearance. Grill cloth is attractive cane. Has many popular features for better sound and easy handling, including slanting front construction for increased cubic volume. Speaker hardware already firmly fixed in place. Mounting clip included.

DWB-8A—Takes 8-inch speaker, maximum speaker depth 4½".  
Size: 10" x 10¾" x 6½". Shipping weight for 2, 5½ lbs. State birch or walnut finish. . . . . DWB-8A

DWB-12A—Takes 12" speaker, maximum speaker depth 6½".  
Size: 13¾" x 14" x 9½". Shipping weight for 2, 9 lbs. State birch or walnut finish. . . . . DWB-12A

## REGULAR WALL BAFFLES

Extremely durable, with rugged construction that not only increases rigidity but also eliminates the possibility of baffle resonance and sound distortion. A durable vinyl cover adds warmth and texture to the appearance. Cane grills provide a modern touch that blends with almost any installation decor. Topping off the appearance of these baffles is the sculptured look which dramatically frames the grill. Clips and all speaker hardware are included. Available in either blond or walnut wood-grained vinyl at the same price. State blond or walnut when ordering.

WB-4/5D—4" or 5" speaker, maximum speaker depth 2¾".  
Shipping weight for 2, 3 lbs. . . . . WB-4/5D

WB-6D—For 6" speaker, maximum speaker depth 3¾". Shipping weight for 2, 4 lbs. . . . . WB-6D

WB-8D—For 8" speaker maximum speaker depth 4¾". Shipping weight for 2, 6 lbs. . . . . WB-8D

WB-10D—For 10" speaker, maximum speaker depth 5½". Shipping weight for 2, 8 lbs. . . . . WB-10D

WB-12D—For 12" speaker, maximum speaker depth 6¾". Shipping weight for two, 11 lbs. . . . . WB-12D



## SLANTING CORNER BAFFLES

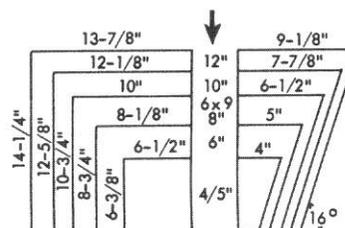
Rigid construction with wood-grain vinyl covering, and modern cane grill. Superb tone. Slant front aims sound down, corner location increases effective air mass.

Bass enhanced by acoustic padding. Bass reflex design. No screws to hold grill in place or mar its appearance. Mounting clips provide quick, sure, concealed mounting. All mounting hardware is included. State blond or walnut.

SCB-8D—Takes 8" speaker. Maximum speaker depth, 5½". Shipping weight 6 lbs. . . . . SCB-8D

SCB-12D—For 12" speaker. Maximum speaker depth, 6½". Shipping weight 8 lbs. . . . . SCB-12D

Regular and Deluxe Baffle Speaker Size



## REDUCING RING

R-8/12—to mount 8" speaker in any 12" cabinet, console, or baffle. Made of ¾" plywood with all holes drilled and hardware included. Ship. Wt. 1 lb. . . . . R-8/12

# Gates Professional Broadcast Microphones



MODEL  
G-600

Gates' G-600 is a dynamic, omnidirectional microphone designed for exacting professional applications—ideally suited for film production, recording, FM, AM and TV broadcasting. The high output level and low sensitivity to mechanical shock make it excellent for pass around use in audience participation, for hand-held use by vocalists, or as a lavalier.

## SPECIFICATIONS

**TYPE:** Dynamic.

**FREQUENCY RESPONSE:** 80-13,000 Hz.

**POLAR PATTERN:** Omnidirectional.

**IMPEDANCE:** Low (150 ohms).

**OUTPUT LEVEL:** -55 dB (0 dB=1 mw/10 dynes/cm<sup>2</sup>).

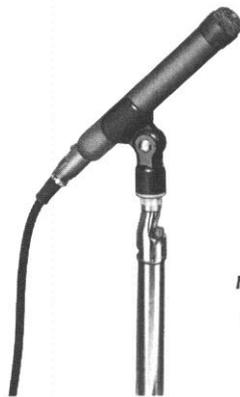
**FINISH:** Fawn charcoal.

**CABLE:** 18 ft. two-conductor, shielded.

**ACCESSORIES:** Lavalier neck cord assembly and 310 clamp furnished.

## ORDERING INFORMATION

Gates' G-600 microphone .....720-0267



MODEL  
G-700

Designed for professional use, FM, AM and TV broadcasting, the G-700 is a dynamic, omnidirectional microphone with outstanding performance characteristics. Wide frequency response, broad pickup range, and light weight make it excellent for TV staging and for pass around use.

## SPECIFICATIONS

**TYPE:** Dynamic.

**FREQUENCY RESPONSE:** 50-15,000 Hz.

**POLAR PATTERN:** Omnidirectional, becoming slightly directional with increase in frequency.

**IMPEDANCE:** Matches all low impedances 50 through 250 ohms. Line balanced to ground and phased.

**OUTPUT LEVEL:** -57 dB (0 dB=1 mw/10 dynes/cm<sup>2</sup>).

**FINISH:** Fawn Charcoal.

**CABLE:** 18 ft. 3-conductor, shielded.

**ACCESSORIES:** Model 300 stand clamp (adapts to 1/2" or 5/8"-27 pipe thread), lavalier neck cord.

## ORDERING INFORMATION

Gates' G-700 microphone .....720-0268



MODEL  
G-800

The G-800 is a dynamic cardioid microphone created especially for professional applications requiring a sharply controlled super-cardioid directional pattern. The G-800 possesses a degree of directional control so effective that frequency response is virtually independent of location of sound source. An easily operated "bass-tilt" switch corrects spectrum balance for longer reach situations.

## SPECIFICATIONS

**TYPE:** Dynamic.

**FREQUENCY RESPONSE:** 90-13,000 Hz.

**POLAR PATTERN:** Super cardioid.

**IMPEDANCE:** Lo-Z (150 ohms nominal).

**OUTPUT LEVEL:** -56 dB (0 dB=1 mw/10 dynes/cm<sup>2</sup>).

**FINISH:** Fawn charcoal.

**CABLE:** 18 ft. 2-conductor, shielded.

**ACCESSORIES:** 310 stand adapter, and protective metal carrying case.

## ORDERING INFORMATION

Gates' G-800 microphone .....720-0269



MODEL  
G-500

Dynamic lavalier microphone. A studio quality unit designed in size and performance for TV and similar applications where a miniature, tailored response microphone is required.

## SPECIFICATIONS

**RESPONSE:** 50 to 12,000 Hz, rising to 6 kHz.

**IMPEDANCE:** 50-250 ohms.

**OUTPUT LEVEL:** -59 dB.

**POLAR PATTERN:** Omnidirectional.

**FINISH:** Non-reflecting gray with stainless steel grill.

**CABLE:** 30 foot, 2 conductor shielded.

**DIMENSIONS:** 25/32-inch diameter, 2 5/8" length.

**NET WEIGHT:** 2 ounces (less cable).

## ORDERING INFORMATION

Gates G-500 dynamic lavalier microphone, with lavalier cord and clip...720-0197

## STUDIO AND MICROPHONE CABLE

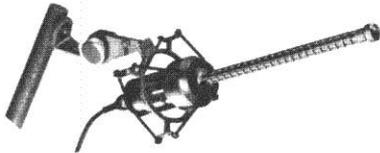
**MIC-100** microphone cable. 2 conductor, stranded 20 AWG. Braided shield. Heavy rubber jacket.....250-0036

**SH-2-20** General purpose audio cable. 2 conductor, stranded 20 AWG, with push-back braided shield. Not insulated.....253-0018

**8450** Belden miniature audio cable. 2 conductor, 22 AWG. Drain wire, foil shield, vinyl jacket.....253-0054

**8451** Belden miniature audio cable. As above, except solid conductor.....253-0059

# Professional Broadcast Microphones



**MODEL 642**

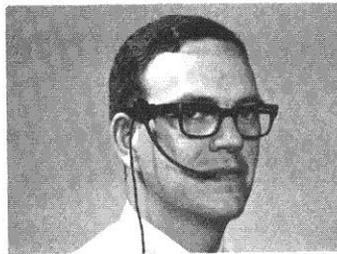
Perfect for television, film, sports, or wherever a highly directional top quality microphone is required. Essentially cardioid unidirectional up to 500 Hz. Highly directional over balance of range. Working distance several times greater than conventional microphones. Excellent for boom use. Must be used with model 356 shock mount. Made by Electro-Voice.

### SPECIFICATIONS

**TYPE:** Dynamic, modified cardioid.  
**RESPONSE:** Flat 30 to 10,000 Hz or choice of 5 to 10 dB low frequency reduction steps by screwdriver adjustment.  
**IMPEDANCE:** 50, 150 or 250 ohms.  
**OUTPUT LEVEL:** -48 dB.  
**FINISH:** Cast aluminum with non-reflecting gray finish.  
**SIZE:** 17 $\frac{7}{8}$ " long; 3 $\frac{3}{16}$ " max. diameter.  
**WEIGHT:** 3 lbs. 4 oz., net.

### ORDERING INFORMATION

Model 642 microphone, complete with connector and 20-ft cable.....720-0163  
 Model 356 shock mount (required).....720-0155



**MODEL RE51**

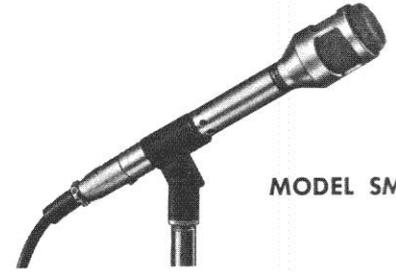
Unique dynamic microphone which allows hands-free use for sports announcing. Lightweight unobtrusive mike assembly clips on eyeglass frame or special headband furnished. Small battery-powered transistor amplifier clips to user's belt, has on/off switch, cough button, battery test lamp, cable connector. Screwdriver slot output level adjustment.

### SPECIFICATIONS

**TYPE:** Dynamic  
**RESPONSE:** 80 to 10,000 Hz.  
**IMPEDANCE:** Matches all low impedance inputs.  
**OUTPUT LEVEL:** -56 dB (Max.)  
**FINISH:** Non-reflecting Black.  
**SIZE:** 1/2" Dia. and 1" Long. Two microphone tubes (3 $\frac{1}{2}$ " and 4 $\frac{1}{2}$ " long) furnished.  
**WEIGHT:** Less than 1/2 oz.

### ORDERING INFORMATION

Model RE51 Microphone with two microphone tubes and battery-powered transistor amplifier.....720-0271



**MODEL SM53**

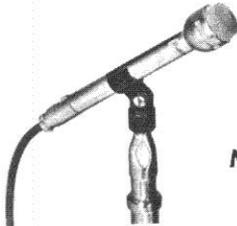
The frequency response of the SM53 is essentially flat across its broad frontal pickup area to the top end of the audible spectrum. Its response is natural, without strident peaks, without false coloration. Built-in low end roll-off filter switch. Soft, neutral glare-free finish is ideally suited for on-camera use.

### SPECIFICATIONS

**TYPE:** Dynamic.  
**FREQUENCY RESPONSE:** 70 to 16,000 Hz.  
**POLAR PATTERN:** Cardioid (Unidirectional).  
**IMPEDANCE:** 150 ohms to permit proper match with any input from 50 through 250 ohms.  
**OUTPUT LEVEL:** -58.5 dB.  
**CABLE:** 20-foot two-conductor shielded Broadcast type with Cannon XLR-3-11C connector attached on microphone end.  
**CONNECTOR:** Cannon XLR-3-12 type in microphone.  
**FINISH:** Matte metallic.  
**NET WEIGHT:** (less cable) 8 ounces.

### ORDERING INFORMATION

Model SM53 microphone.....720-0272



**MODEL RE-15**

### ORDERING INFORMATION

Model RE-15 microphone, complete with 18-ft. cable, XLR3-11 connector, metal carrying case, and clamp 720-0240

The RE-15, by Electro-Voice, is a dynamic cardioid microphone created especially for the most exacting professional applications. The RE-15 features a degree of directional control so effective that response is independent of angular location of sound source. A super cardioid, this microphone provides the greatest possible rejection of unwanted sounds. An easily operated "bass tilt" switch corrects spectrum balance for boom use and other longer reach situations.

### SPECIFICATIONS

**FREQUENCY RESPONSE:** 60-15,000 Hz.  
**POLAR PATTERN:** Super Cardioid.  
**IMPEDANCE:** 150 ohms.  
**OUTPUT LEVEL:** -55 dB.  
**DIAPHRAGM:** Acoustalloy.  
**DIMENSIONS:** 6 $\frac{3}{16}$ " long, 1 $\frac{3}{8}$ " diam. (3/4" shank dia.)  
**FINISH:** Non-reflecting matte satin nickel.  
**NET WEIGHT:** 8 oz. (not including cable).  
**CABLE:** 18 feet, 2-conductor, shielded, broadcast type cable, synthetic rubber jacketed with Cannon XLR3-11 connector.  
**ACCESSORIES FURNISHED:** Protective metal carrying case, Model 310 clamp.

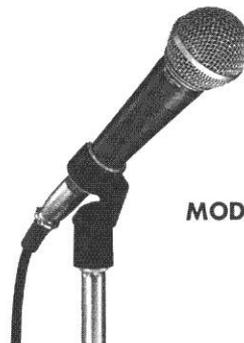
### SPECIFICATIONS

**FREQUENCY RESPONSE:** 50-15,000 Hz.  
**POLAR PATTERN:** Cardioid.  
**IMPEDANCE:** Dual: 50 and 150 ohms.  
**OUTPUT LEVEL:** -56 dB (0 dB = 1 milliwatt with 10 microbars).  
**DIMENSIONS AND WEIGHT:** 6 $\frac{15}{32}$ " x 2" diam. (max.); 15 oz.

### ORDERING INFORMATION

Model SM58, dynamic, cardioid, with built-in windscreen, cable, connector and stand adapter.....720-0228

The Shure SM58 is ideal for remote news, sports, interviews, or wherever the announcer or performer may need to work close to the microphone. Built-in spherical windscreen minimizes or eliminates explosive breath "pop." Wide response with slight presence rise for clean, bright and natural sound. Convenient size and weight for comfortable hand-held use. Slip-in stand adapter included.



**MODEL SM58**

# Four Channel Solid Statesman Remote Amplifier



## THE DYNAMOTE "70"

Broadcasting's finest remote amplifier—with such outstanding features as: completely transistorized circuits, designed to allow longer battery life; nine switchable inputs into four mixing channels; illuminated slide rule VU meter; built-in tone oscillator; PA feed; and amplified studio cue.

**INPUT CIRCUITS:** All mixing is high level. Four microphones feed four preamplifiers. All four preamplifier inputs are balanced and have input transformers as standard equipment. Five other input circuits are switch-selectable into the mixing system. These are: (1) tone oscillator, (2) dual turntable inputs, and (3) two high level inputs.

**VERSATILE MIXING:** Mixing channel 1 is for a microphone only; channel 2 accommodates a microphone or the built-in tone oscillator; channel 3, one microphone, one turntable or one high level input; and channel 4, one microphone, one turntable, or one high level input.

**PROGRAM CUE:** A front panel key switches the studio line into the Dynamote program amplifier and PA feed for ease in monitoring studio cues.

**AMPLIFIERS:** Four preamplifiers, each with transformer input, feed four mixing controls, which in turn feed the program amplifier. Distortion is 1% or less at +18 dBm output (10 dB overload) to the line (after 6 dB isolation pad).

**FRONT PANEL CONTROLS:** Four mixing channels are operated by specially-designed control knobs, created specifically for remote functions. Knobs are coordinated with the panel slope for positive-feel mixing. Other panel controls are (1) master gain, (2) PA gain control, (3) amplified cue selector control, (4) VU meter light control (the VU meter light operates from separate batteries), and (5) the slide rule VU meter.

**REAR PANEL CONTROLS:** All secondary switching is at the rear. The tone oscillator, dual turntable and dual high level inputs switch into mixing channels 2, 3 and 4. All input and output circuits connect to a recessed panel with standard XL-type receptacles for the microphones.

**VU METER:** The VU meter is of the slide rule type with full lateral scale area. Illumination is from two separate batteries, and the meter light may be turned on by pulling out on the PA feed control. Batteries will light the meter for 60 hours. A rear panel switch allows the meter to read either VU or battery condition.

**PA FEED:** The Dynamote "70" supplies an isolated output adjustable from the front panel to provide 0.5 volts into a 100,000 ohm unbalanced load.

# Four Channel Solid Statesman Remote Amplifier

**TERMINAL FEATURES:** Dual headphone jacks are provided for operator and director. The amplifier turns on when either headphone plug, or a dummy plug, is inserted. Microphone inputs are standard XL-type connectors. Jacks are provided for two turntables and two high level inputs, and terminals for telephone line and PA feed, and optional AC in-line power supply receptacle.

**BATTERY AND AC POWER:** Twelve "C" size standard 1½-volt dry batteries power the amplifier for 200 hours. As the amplifier design is based on full gain and output level at rated 1% distortion with as little as 12 volts, the useful battery life is greatly extended. The optional in-line power supply

operates about 2 volts above the batteries with diodes disabling the battery voltage. If power fails for any reason, batteries automatically take over without evidence in the program.

**DYNAMOTE "70" PARALLELING:** Any reasonable number of units may be paralleled for a large field broadcast. Rear panel jacks permit the feeding of additional Dynamotes directly to the mixer bus of the master Dynamote without losing a mixing channel on the master unit. For example, six Dynamotes will provide 24 microphone inputs—yet require only about 76 inches of width, or about 38 inches if two units are stacked on top of one another.



Rear view, Dynamote "70".

## SPECIFICATIONS

**OPERATING MODE:** Single channel monaural.

**MIXING CHANNELS:** Total four; three switchable for other functions.

**INPUT CIRCUITS:** Channel 1, microphone input; Channel 2, microphone and tone oscillator; Channel 3, microphone, turntable and high level input; Channel 4, microphone, turntable and high level input. Input levels: Microphones -60 dBm, high level 600 ohm circuits rated -15 dBm to +8 dBm. Turntable inputs have RIAA equalization and accept standard VR-type phono cartridges without further preamplification.

**OUTPUT CIRCUITS:** 1 program line, 1 isolated PA feed, 1 mixer multiple output, 2 headphone monitoring jacks.

**SOURCE IMPEDANCES:** Microphones—30/50 and 150/250 ohms, balanced or unbalanced, with input transformers on all channels. High Level—600 ohms, unbalanced. (-15 dBm to +8 dBm input level.) Turntables—6200 ohms for VR type pickup cartridge equalization. Mixer Multiple Input—600,000 ohms.

**INPUT IMPEDANCE:** Preamplifiers, 1500 ohms or higher, 30-15,000 Hz.

**LOAD IMPEDANCES:** Program Output—600/150 ohms, balanced or unbalanced, (factory connected for 600 ohms). PA Feed—100,000 ohms unbalanced. Amplifier Paralleling—600,000 ohms bridging.

**OUTPUT IMPEDANCE:** Program Amplifier, 490 ohms nominal.

**GAIN:** Microphone input to line output, 97 dB  $\pm$  2 dB.

**RESPONSE:**  $\pm$  1½ dB, 25 to 16,000 Hz.

**DISTORTION:** 1.0% maximum, 30 to 15,000 Hz @ +18 dBm output (after 6 dB isolation pad).

**NOISE:** 62 dB or better below +8 dBm output with -60 dBm input. (Relative input noise -122 dBm.)

**BATTERY COMPLEMENT:** 12 Size "C" 1½ volt cells for amplifier. 2 Size "D" 1½ volt cells for VU light.

**BATTERY LIFE:** Approximately 200 hours for amplifier pack, and 60 hours for meter light.

**EXTERNAL POWER:** Four terminal plug on rear accepts optional 994-6435 in-line power pack for 117 volt AC operation.

**CABINET DATA:** Size: 12¾" wide, 4¾" high, 1½" deep. Finish: Charcoal gray vinyl with satin chrome trim accents. Weight: 12¼ pounds, including batteries.

**SHIPPING DATA:** Packed Weight: Domestic, 16 lbs.; Export, 35 lbs, Cubage, 2 cubic feet.

## ORDERING INFORMATION

Dynamote "70" 4-channel remote amplifier, complete but less male microphone connectors and batteries.....	994-6434
Microphone plugs, male (four required).....	610-0182
Battery complement for Dynamote "70".....	994-6441
Vinyl cover with accessory pocket.....	725-0128
In-Line power supply for 117 volt operation.....	994-6435

# Three Channel Solid Statesman Remote Amplifier



## THE ATTACHE "70"

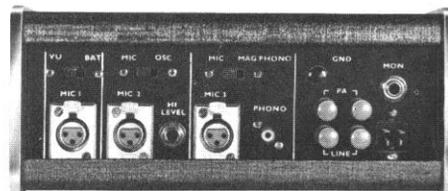
Unexcelled remote pickup performance is provided by this stylish, fully-transistorized audio remote amplifier. Attache "70" provides: three microphone channels with one magnetic phono and one high level input; 200-hour battery life; optional in-line AC power supply; slide rule VU meter; and superior performance with wider response, lower distortion.

**INPUTS:** Three channels, all with preamplifiers, include: channel 1, microphone only with input transformer; channel 2, microphone tone oscillator or high level input; channel 3, microphone or phono cartridge. The depth of only 12 1/8" allows switching of secondary circuits such as turntable and high level inputs at the rear.

**TOTAL FACILITY:** The front panel contains specially styled mixing knobs for "touch control" fading, master gain control and isolated PA feed control. The optional power supply is diode protected from the batteries when in use. If power fails, batteries take over automatically.

**PERFORMANCE:** Distortion is 1% or less at +18 dBm output, with an extended response of 25-16,000 Hz.

**DESIGN:** The Attache "70" is smoothly styled in lightweight aluminum and vinyl clad steel. A snap-on cover protects mixing controls when the remote is not in use.



The rear panel shows the logical grouping of line terminations.

## SPECIFICATIONS

**OPERATING MODE:** Monaural.

**MIXING CHANNELS:** 3, with channels 2 and 3 switchable to other functions.

**INPUT CIRCUITS:** Channel 1, microphone only, includes input transformer; Channel 2, microphone or 400 Hz tone oscillator or high level input; Channel 3, microphone or turntable.

**OUTPUT CIRCUITS:** Program line for 600/150 ohms, PA feed, and headphone monitoring jack.

**SOURCE IMPEDANCES:** Microphones, 30/50 ohms or 150/250 ohms. Turntable, 6200 ohms for VR pickup cartridges and RIAA equalized. High level, 600 ohms unbalanced -15 dBm to +8 dBm.

**GAIN:** Microphone input to program line output is 94 dB  $\pm$  2 dB.

**RESPONSE:**  $\pm$ 1.5 dB 25-16,000 Hz.

**DISTORTION:** Less than 1% at +18 dBm output (10 dB overload) into the program line. (6 dB isolation pad incorporated).

**NOISE:** 62 dB below +8 dBm output with -60 dBm input. (Relative noise -122 dBm).

**BATTERIES:** 12 standard 1 1/2-volt type "C" cells for amplifier and 2 standard 1 1/2-volt type "D" cells for meter light.

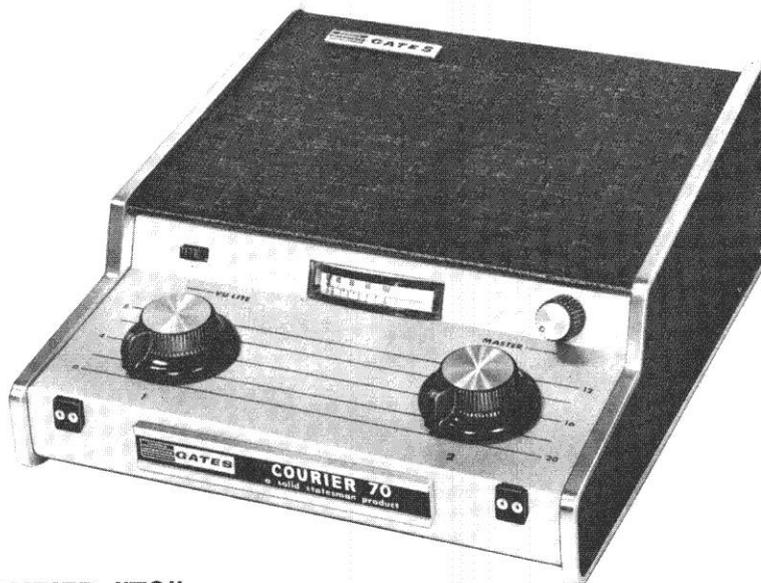
**AC POWER:** Gates In-Line 994-6435 power pack for 117 volt, 50/60 Hz.

**CABINET DATA:** 10" wide, 4 3/4" high, 12 1/2" deep. Finish: Charcoal gray, black and satin chrome. Net weight with batteries, 10 lbs. Packed weight: Domestic 20 lbs. Export 35 lbs. Cubage: 1.5 cubic feet.

## ORDERING INFORMATION

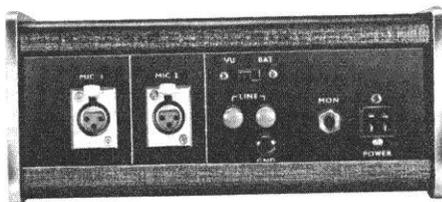
Attache "70" 3-channel remote amplifier, less batteries	994-6433
Microphone connector, 3 required	610-0182
Battery Kit complete	994-6441
Optional microphone input transformer	478-0285
Power Supply, In-Line type	994-6435
Pliable vinyl cover	725-0127

# Two Channel Solid Statesman Remote Amplifier



## THE COURIER "70"

Studio console quality in an all-transistorized audio remote amplifier no larger than a modern camera carrying case. Perfect for inexpensively handling those many remote situations where normally no more than two microphones are required. Premium features include: separate preamplifier for each mixing channel; slide rule illuminated VU meter; long battery life; optional in-line AC power supply; 1% or less distortion at high output levels; 25-16,000 Hz frequency response; and total weight of 9 pounds with batteries.



**OPERATING MODE:** Monaural.

**MIXING CHANNELS:** 2 for microphones.

**OUTPUT CIRCUITS:** 1 program line, 1 headphone monitor.

**SOURCE IMPEDANCE:** Microphone 30/50 to 150/250 ohms, unbalanced. Input transformers optional.

**LOAD IMPEDANCE:** 600/150 ohms, balanced or unbalanced. Factory connected for 600 ohms.

**MAXIMUM INPUT LEVEL:** -35 dBm into either microphone channel.

**MAXIMUM OUTPUT LEVEL:** +18 dBm to program line. 6 dB line isolation pad built-in.

**GAIN:** Microphone input to line output, 94 dB  $\pm$  2 dB.

**PERFORMANCE:** The outstanding performance of the compact Courier "70" is a result of extensive product research. At full-rated +18 dBm output, distortion is less than 1%, even when full battery power is down more than 30%. Courier "70" battery life is normally in excess of 200 hours. Front panel controls in addition to mixers are: master gain control, meter light switch and slide-rule VU meter (which also checks battery condition).

**POWER SUPPLY:** An optional in-line AC power supply is diode protected from the batteries when in use. If power fails, change-over to batteries is instant and automatic. The amplifier turns on with the insertion of headphone plug or dummy plug.

**STYLING:** Sleek, flight-line styling in charcoal gray vinyl and satin aluminum, with special mixing knobs designed for "touch control" fading.

## SPECIFICATIONS

**RESPONSE:**  $\pm$  1½ dB, 25 to 16,000 Hz.

**DISTORTION:** 1% maximum, 30 to 15,000 Hz @ +18 dBm output.

**NOISE:** 62 dB or better below +8 dBm output with -60 dBm input. (Relative input noise -122 dBm).

**BATTERIES:** 12 size "C" cells for amplifier. 2 size "D" cells for VU light.

**BATTERY LIFE:** 200 hours or more for amplifier pack, and 60 hours for meter light.

**AC POWER:** Four-terminal plug on rear accepts external 994-6435 in-line power pack for 117 volt AC operation.

**CABINET DATA:** Size: 10" wide, 4¾" high, 12½" deep. Finish: Charcoal gray vinyl with satin chrome trim. Weight: 8¾ lbs., including batteries. Packed weight (domestic), 14 lbs., (export), 32 lbs. Cubage, 1.5 cu. ft.

## ORDERING INFORMATION

Courier "70" 2-channel remote amplifier, less batteries.....	994-6432
Microphone connectors, male (2 required).....	610-0182
Battery kit complete.....	994-6441
Optional microphone input transformer.....	478-0285
Power Supply, In-Line type for 117 volt AC operation.....	994-6435
Vinyl cover, with accessory pocket.....	725-0127

# Single Channel Remote Or Microphone Amplifier



## THE UNIMOTE "70"

Gates Unimote "70" is a transistorized single channel audio remote or utility amplifier, featuring compact, functional and attractive styling. Battery life is 300 hours or over (using standard "C" size flashlight cells). If AC power operation is desired, the in-line power unit is available. Smooth change-over to batteries occurs instantly and automatically in case of power failure. The printed circuit amplifier has less than 1% distortion at +18 dBm output.

**DESIGN:** All controls and terminations are on the front of the unit. Operation is of the turn on—turn off type after the gain control setting is determined. Unimote "70" may be desk mounted, attached to the wall by screws, mounted under a lectern or pulpit, or carried as easily as a camera case. This compact amplifier is a natural for church remotes, weather bureau, or other "set and forget" installations.

## SPECIFICATIONS

**OPERATING MODE:** Monaural.

**INPUT CIRCUIT:** One 30/50 or 150/250 ohm microphone.

**OUTPUT CIRCUITS:** One program line, one headphone monitor.

**LOAD IMPEDANCE:** 600/150 ohms, balanced or unbalanced (factory connected for 600 ohms). 6 dB isolation pad self-contained.

**GAIN:** Microphone input to line output, 82 dB,  $\pm 2$  dB.

**OUTPUT LEVEL:** +18 dBm to program line.

**RESPONSE:**  $\pm 1\frac{1}{2}$  dB 30 to 15,000 Hz.

**DISTORTION:** 1% maximum, 30 to 15,000 Hz @ +18 dBm output.

**NOISE:** -122 dBm relative input noise.

**BATTERIES:** 12 size "C" cells.

**BATTERY LIFE:** Approximately 300-400 hours, average duty cycle.

**AC POWER:** External 994-6435 in-line power pack for 117 volt AC operation.

**CABINET DATA:** Size: 10" wide, 5 $\frac{1}{4}$ " high, 4 $\frac{1}{4}$ " deep. Finish: anodized aluminum front panel with charcoal gray Royalite case. Weight: 5 lbs., including batteries. Shipping weight: packed 6 $\frac{1}{2}$  lbs. Cubage: 1 cu. ft.

## ORDERING INFORMATION

Unimote "70" single channel remote amplifier, less batteries.....	994-6431
Microphone connector, male (1 required).....	610-0182
Battery complement for Unimote "70".....	994-6441
Optional input transformer.....	478-0285
In-line power supply for 117 volt operation.....	994-6435

## IN-LINE POWER SUPPLY

Compact accessory power unit for any of Gates Solid-State-man remote amplifiers: Dynamote "70", Attache "70", Courier "70", and Unimote "70". In-Line type with six-foot line cord and four-foot output cord terminating in mating plug for all remote units. For 117 volt, 50/60 Hz operation of Gates remote amplifiers in permanent installations. Dual supply design provides power for amplifiers and VU meter illumination. Easily carried in accessory pocket of vinyl remote amplifier covers.

## SPECIFICATIONS

**POWER INPUT:** 117 volts, 50/60 Hz.

**POWER OUTPUT:** 4 prong plug, mates with remote amplifier.

**SIZE:** 5 $\frac{1}{2}$ " x 4" x 1 $\frac{3}{4}$ " case. DC supply cable, 48" long. AC power cord, 72" long.

**FINISH:** Charcoal gray vinyl-clad steel.

**WEIGHT:** 2 lbs. net.

## ORDERING INFORMATION

In-line Power Supply, complete.....	994-6435
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# All Purpose Remote Amplifier

## MODEL M-6600

A compact, lightweight remote amplifier, the M-6600 Solid-Statesman provides fine remote performance, and makes an ideal all-purpose amplifier. Battery operated and 100% self-contained, it may be quickly installed to fill many studio requirements. Use it to temporarily replace a faulty program amplifier, as a preamplifier for cartridge or reel tape recorders, or as one of several feeder amplifiers for the extravaganza type of pickup. These are just a few of the possibilities.

The housing is all aluminum, and ribbed for added strength, providing complete electrical isolation for the floating printed board internal assembly. The gain control and combined on-off switch are on one end of the amplifier, and the microphone receptacle, phone jack, and line terminals are on the opposite end. The output transformer is "T" pad isolated and wired for 600 ohms, but internally changeable to 150 ohms where desired. For the installation requiring a number of widely spaced microphones, the use of the M-6600 amplifier permits connection to the central control point with unshielded telephone type wire, and individual gain adjustment for each microphone.

Two 8.4 volt standard mercury batteries, available nationwide, provide about 50 hours of service. Total weight is less than 2½ pounds with batteries and microphone connector.



## SPECIFICATIONS

**GAIN:** 82 dB  $\pm$  3 dB at 150/250 ohms source impedance. 77 dB  $\pm$  3 dB at 50 ohms source impedance.

**NOTE:** With gain control setting reduced about 14 dB, this permits 68 dB operating gain for correct output level.

**RESPONSE:** 30-15,000 Hz  $\pm$  2 dB.

**DISTORTION:** 1% maximum at +18 dBm, 30-15,000 Hz.

**NOISE:** -122 dBm relative input noise, 30-15,000 Hz.

**BATTERIES:** Two 8.4 volt mercury Eveready E146X or Burgess H146X. Expected life at maximum amplifier performance, 50 hours under average programming.

**SOURCE IMPEDANCE:** 30/50 or 150/250 ohms unbalanced.

**LOAD IMPEDANCE:** 600/150 ohms balanced, wired for 600 ohms.

**SIZE AND FINISH:** 8¾" long, 2½" wide, 3" high. Finish: Natural aluminum.

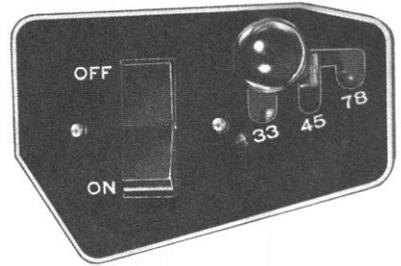
**WEIGHT:** Net, with male connector, 2 lbs. Shipping weight 8 lbs.

## ORDERING INFORMATION

Amplifier (less batteries).....994-6600  
Battery.....660-0022

HARRIS  
INTERTYPE  
CORPORATION **GATES**

# Professional Transcription Turntables



This cut-away illustration of a Gates turntable shows the fine machining and workmanship in the equipment. Oilite bearings are used at all bearing points, including the large center spindle bearing. Speed shift linkages are through monoball self-aligning bearings for smooth, silent, trouble-free operation. There are no belts, planetary drives or gear trains to wear.

Shift speeds to 78, 45 or 33 $\frac{1}{3}$  rpm by simply moving shift lever to the desired index point. Then touch the mercury-type switch to either start or stop. Complete one-hand operation leaves the other hand free for cueing or control boards.

## PRECISION ENGINEERED

Recent advances in recording techniques, as well as stereo requirements, now place stronger demands on today's reproducing equipment. To meet these improved performance standards, Gates offers two outstanding turntables (one 16-inch model, one 12-inch model), designed to reduce rumble to an all-time low, without the sacrifice of quick cue.

The heart of Gates turntable design is a drive hub, which is part of the turntable platter—and about one-half the radius of a 45 rpm disc. A single idler wheel for all speeds is floating and self-aligning—and a 600 rpm hysteresis synchronous motor with 3-speed pulley, engages the idler wheel to the inner hub.

The combination of lower motor speed (one-third that of other models) and a drive located inside the playing surface, results in remarkably low rumble.

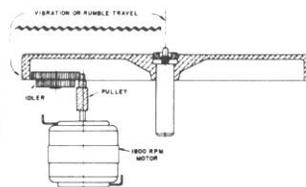
Speed change is exact and functionally correct. All three speeds shift across a single indexed plate. A mercury-type start/stop switch illuminates when on. The smooth felt platter surface offers slip-cueing if desired. A captive pop-up spindle is provided for 45 rpm discs.

Every Gates turntable is totally hand-assembled, micrometer checked under rigid quality-control standards and then individually tested in our laboratory for wow, flutter, and speed consistency.

As Gates turntables are precision machined devices they are not the lowest in initial cost, but are far less expensive on the basis of per-hour cost.

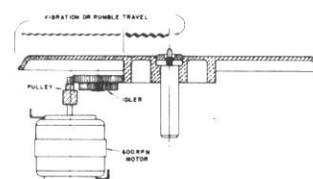
## DRIVE DESIGN PRINCIPLE

### OLD METHOD



Rim drive turntables, as the word implies, drive against the outer rim of the platter. Vibration, commonly called rumble, is returned to the center spindle, or bearing, across the entire playing surface of the platter. This type of drive usually requires an 1800 rpm motor for proper speed ratios. The greater the motor speed, the greater the vibration. Also, higher motor speeds raise the audio frequency of this vibration or rumble.

### GATES METHOD



In both the 12- and 16-inch Gates turntables, the drive is against a solid inner hub, away from the usable playing surface of the platter. Likewise, any minute vibration or rumble is pushing against the center bearing instead of pulling away as in outer rim drive turntables. With this exclusive drive system, a 600 rpm hysteresis synchronous motor is used. Lower motor speed assures lower vibration or rumble. The lower speed substantially drops the audio frequency of this much-lower motor vibration so that nearly all of the rumble is in the sub-audible spectrum.

# Professional Transcription Turntables—16-Inch



## MODEL CB-500

Gates CB-500 is the most widely used 16-inch turntable in the broadcasting industry. Designed for continuous 24-hour commercial service, this turntable is ruggedly constructed to meet the strain of any control room operation, while maintaining its excellent quality of performance.

Time proven features include heavy machined aluminum platter, rubber-shock-mounted cast aluminum chassis, oilite hub bearing, self-centering neoprene idler wheel, monoball self-aligning speed shift bearings, and a functional speed selector mechanism. (Order pickup arm separately.)

## SPECIFICATIONS

**CHASSIS SIZE:** 21¼" x 21¼" x 1⅝".

**MOTOR HANG BELOW BOTTOM OF CHASSIS:** 4⅞".

**CONSTRUCTION:** Both platter and base of machined aluminum.

**FINISH:** Beige-gray with escutcheon in black and turntable platter cover in heavy gray felt.

**PLATTER SIZE:** 17".

**STROBOSCOPE:** Built-in on platter for all three speeds.

**CENTER SPINDLE:** Spring-locking type, snaps up for 45 rpm hub, locks down for smaller-spindle records.

**CENTER BEARING:** 1" diameter hardened steel, rotates in oilite bearing.

**MOTOR:** Hysteresis synchronous, single phase, 600 rpm, with 40°C temperature rise.

**CUEING:** At 33⅓ rpm, ½ turn. At 45 rpm, ⅓ turn. At 78 rpm, 1¼ turn.

**NOISE OR RUMBLE:** At 33⅓ rpm, rated -45 dB. At 45 rpm, rated -40 dB. At 78 rpm, rated -35 dB.

**WOW:** Rated 0.1% at 33⅓ rpm, capable .08%.

**FLUTTER:** Rated 0.07% at 33⅓ rpm, capable .05%.

**MOTOR START:** Rocker-type illuminated mercury switch.

**IDLER WHEEL:** Special shear action neoprene, self-aligning.

**SPEED CHANGE:** To 33⅓, 45, or 78 rpm by single indexed lever control.

**POWER:** 117 volts, 60 Hz, 35 watts. (50 Hz available, see below.)

**WEIGHT:** Net: 34 lbs. Packed: domestic, 45 lbs.; export, 70 lbs. Cubage: 6 cubic feet.

## ORDERING INFORMATION

CB-500 16-inch transcription turntable, chassis only, for 60 Hz ..... 994-5739-003  
CB-500A 16-inch transcription turntable, chassis only, for 50 Hz ..... 994-5739-004

# Professional Transcription Turntables—12-Inch



## MODEL CB-77

Gates CB-77 is a professional 12-inch transcription turntable, with the same unique design principles as its companion 16-inch model. In the 12-inch CB-77 chassis will be found the same inner hub drive system, the same convenient speed change system, the same illuminated rocker arm on-off switch, etc. The only difference is the reduced size, affording broad-

casts a more compact turntable arrangement for today's busy control room, where space is at a premium.

The chassis is ready for you to attach the pickup arm of your choice (order separately), and is designed for 33 $\frac{1}{3}$ , 45 and 78 rpm speeds.

## SPECIFICATIONS

**CHASSIS SIZE:** 16" x 16" x 1 $\frac{5}{16}$ ". Motor hang below bottom of chassis: 5 $\frac{3}{4}$ ".

**CONSTRUCTION:** Platter and base of machined aluminum.

**FINISH:** Beige-gray with escutcheon in black and turntable platter cover in heavy gray felt.

**PLATTER SIZE:** 13 $\frac{3}{8}$ ".

**STROBOSCOPE:** Built-in for all 3 speeds.

**CENTER BEARING:** 1" diameter hardened steel, rotates in oilite bearing.

**CENTER SPINDLE:** Spring-locking type snaps up for 45 rpm, locks down for smaller spindle records.

**MOTOR:** Hysteresis synchronous, single phase, 600 rpm, with 40°C temperature rise.

**CUEING:** At 33 $\frac{1}{3}$  rpm,  $\frac{1}{8}$  turn. At 45 rpm,  $\frac{1}{4}$  turn. At 78 rpm, 1 turn.

**NOISE OR RUMBLE:** At 33 $\frac{1}{3}$  rpm, rated -45 dB. At 45 rpm, rated -40 dB. At 78 rpm, rated -35 dB. (Meets or exceeds NAB specifications for stereophonic reproduction.)

**WOW:** 0.1% maximum, capable .08%.

**FLUTTER:** .07% maximum, capable .05%.

**MOTOR START:** Rocker-type illuminated mercury switch.

**IDLER WHEEL:** Special shear action neoprene, self-aligning.

**SPEED CHANGE:** To 33 $\frac{1}{3}$ , 45 or 78 rpm by single indexed lever control.

**POWER:** 117 volt, 60 Hz, 35 watts. (50 Hz model available, see below.)

**WEIGHT:** Net: 30 lbs. Packed: domestic, 40 lbs.; export, 65 lbs. Cubage: 3.6 cubic feet.

## ORDERING INFORMATION

CB-77 12-inch transcription turntable, chassis only, 60 Hz ..... 994-5798-005

CB-77A 12-inch transcription turntable, chassis only, 50 Hz ..... 994-5798-006

# Turndtable System Components



## 12-INCH SYSTEM COMPONENTS

The following components are recommended to make up your 12-inch turntable system.

### MONOPHONIC SYSTEM

CB-77 turntable, 60 Hz (50 Hz available)..... 994-5798-005  
 Gray 206-S 12" tone arm..... 723-0259  
 or  
 Gray 303 12" Micro-Trak tone arm..... 723-0268  
 Shure M-44-7 stereo dynetic cartridge w/.0007" diamond stylus 723-0236  
 M-6244 equalized turntable preamplifier, transistorized..... 994-6244  
 NOTE: If Gray 206-SG 12" tone arm is desired (catalog number 723-0250),  
 order General Electric VR-II turn-around cartridge (catalog number 723-0017).

### STEREOPHONIC SYSTEM

CB-77 turntable, 60 Hz (50 Hz available)..... 994-5798-005  
 Gray 206-S 12-inch tone arm..... 723-0259  
 or  
 Gray 303 12" Micro-Trak tone arm..... 723-0268  
 Shure M-44-7 stereo dynetic cartridge w/.0007" diamond stylus 723-0236  
 M-6244 equalized turntable preamplifier, transistorized,  
 (two required)..... 994-6244  
 NOTE: To order cabinet, see below.

## DUAL TURNTABLE CABINET

Beautifully styled, and dimensioned to accommodate either 12- or 16-inch Gates turntables. For description, see Page 201.

Dual turntable cabinet..... 994-6449

## 16-INCH SYSTEM COMPONENTS

To make up a 16-inch turntable system, the following components are recommended:

### MONOPHONIC SYSTEM

CB-500 turntable, 60 Hz (50 Hz available)..... 994-5739-003  
 Gray 208-S 16" viscous damped tone arm..... 723-0099  
 or  
 Gray 306 16" Micro-Trak tone arm..... 723-0269  
 Shure M-44-7 stereo dynetic cartridge w/.0007" diamond stylus 723-0236  
 M-6244 equalized turntable preamplifier, transistorized..... 994-6244  
 NOTE: If Gray 208-SG tone arm is desired (723-0153), a General Electric  
 VR-II turn-around cartridge should be used (723-0017).

### STEREOPHONIC SYSTEM

CB-500 turntable, 60 Hz (50 Hz available)..... 994-5739-003  
 Gray 208-S 16" viscous damped tone arm..... 723-0099  
 or  
 Gray 306 16" Micro-Trak tone arm..... 723-0269  
 Shure M-44-7 stereo dynetic cartridge w/.0007" diamond stylus 723-0236  
 M-6244 equalized turntable preamplifier, transistorized,  
 (two required)..... 994-6244  
 NOTE: To order cabinet, see below.

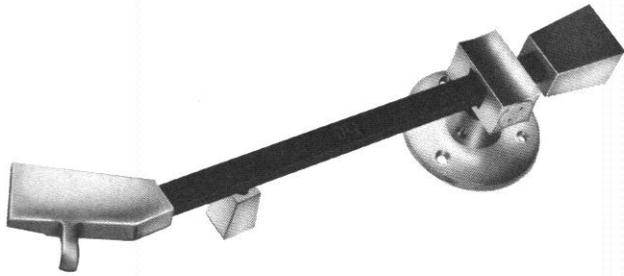


## SINGLE TURNTABLE CABINET

Fits any decor. Accommodates either 12-inch or 16-inch Gates turntable. For description, see page 201.

Single turntable cabinet..... 994-6448

# Transcription Tone Arms and Pickups

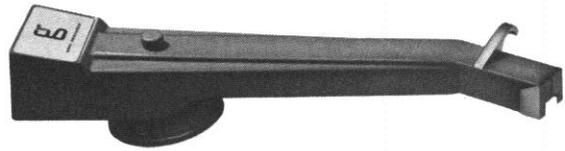


## 12" AND 16" MICRO-TRAK TONE ARMS

Especially designed for stereo, this durable arm will track distortion-free at micro-pressures of 1/10 gram. A new material never before used in a tone arm, wood impregnated with epoxy resins, was selected for this arm to achieve the extremely low tracking force and very low resonance characteristics. Sapphire bearings floating in a unique elastomer ring isolate the tone arm from its mounting and produce a tone arm with virtually no vertical friction.

Available for 12" and 16" turntables, this arm will accept any broadcast type stereo cartridge.

Gray 303 Micro-Trak 12" tone arm ..... 723-0268  
 Gray 306 Micro-Trak 16" tone arm ..... 723-0269

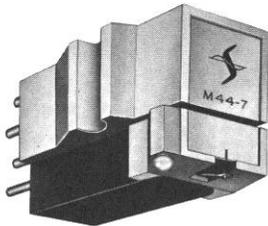


## 12" AND 16" TONE ARMS

Models 206-S and 208-S viscous damped tone arms come with slide and modular weights for mounting single play stereo or monophonic cartridges. Designed specifically for the GE turn-around cartridges, the models 206-SG and 208-SG have a slot cut out in the front of the arm to clear the stem of the GE cartridge, and are specially balanced for this cartridge. Accessory weights are also available.

Gray 206-S, 12" viscous damped tone arm ..... 723-0259  
 Gray 206-SG, 12" viscous damped tone arm for turnaround cartridge ..... 723-0250  
 Gray 208-S, 16" viscous damped tone arm ..... 723-0099  
 Gray 208-SG, 16" viscous damped tone arm for turnaround cartridge ..... 723-0153

## STEREOPHONIC PICKUP CARTRIDGES



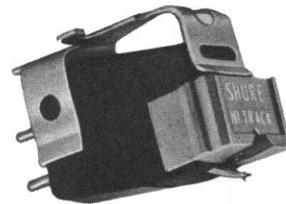
Model M44-7 stereo dynetic cartridge is recommended for faithful reproduction of both stereophonic and monophonic recordings. It offers superior stereo separation, smoother response, and is designed to complement the 15° effective cutting angle now being used on stereo recordings. The easily changed styli may be interchanged for various types of recordings.

### SPECIFICATIONS

**FREQUENCY RESPONSE:** 20 to 20,000 Hz.  
**CHANNEL SEPARATION:** More than 25 dB at 1000 Hz.  
**OUTPUT:** 9 millivolts per channel at 1000 Hz at 5 cm/sec.  
**LOAD IMPEDANCE:** 47,000 ohms per channel.  
**TRACKING:** 1.5 to 3 grams.  
**STYLUS:** Features "no scratch" retractable design.  
**INDUCTANCE:** 680 millihenries.  
**D. C. RESISTANCE:** 650 ohms.  
**MOUNTING:** Standard 1/2" mounting center.  
**WEIGHT:** 7 grams net.

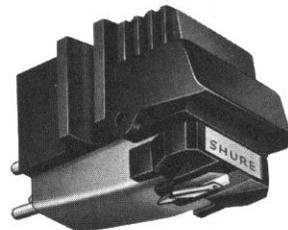
### ORDERING INFORMATION

Shure M44-7 stereo Dynetic Cartridge with 0.0007" diamond stylus ..... 723-0236  
 Replacement Stylus N-44-7 0.0007" diamond ..... 723-0237



The Model M93E Hi-Track Elliptical Cartridge is an outstanding performer in tone arms that track in the 1½ to 3 grams range. While capable of reducing high frequency splatter, the M93E is rugged enough to withstand continued back-cueing.

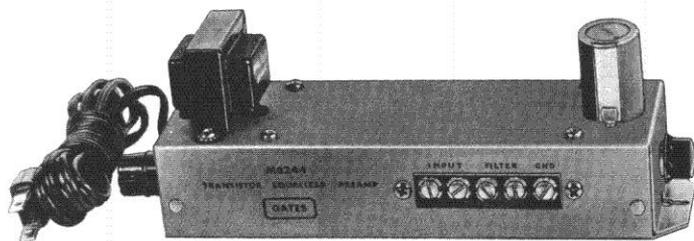
M93E Hi-track Elliptical Cartridge 1½ to 3 grams tracking ..... 723-0306  
 N-93E Elliptical replacement stylus ..... 723-0307



The M75-6 has trackability specifications that assure you that this cartridge will track grooves cut to the theoretical limits of recording cutting velocity . . . throughout the audible spectrum. Ideal for use in upgrading tone arms.

M75-6 Hi-track Spherical Stylus Cartridge for 1½ to 3 grams tracking ..... 723-0308  
 N75-6 replacement stylus ..... 723-0309

# Transistorized Turntable Preamplifiers



## MONOPHONIC — STEREO

Single-channel preamplifier designed for use in broadcasting, recording, and general sound requirements where low distortion and exacting frequency response characteristics are demanded. Featuring self-contained power supply and transformer output. For stereo operation use two units. The input impedance of 47,000 ohms makes the M-6244 compatible with virtually all magnetic cartridges (including stereo).

## SPECIFICATIONS

**INPUT:** 47,000 ohms.

**OUTPUT:** Adjustable from -22 dBm to -12 dBm with 12 mV input.

**RESPONSE:** Within  $\pm 1$  dB of RIAA/NAB standard curve. Additional high-frequency, roll-off filter position provided.

**DISTORTION:** Less than 0.5% at normal levels (-22 dBm to -12 dBm output). Less than 1.0% at 10 dB overload (above 12 mV input).

**NOISE:** 68 dB or lower, below -12 dBm output (with 12 mV input).

**LOAD IMPEDANCE:** 600 ohms or 150 ohms, balanced or unbalanced.

**MAXIMUM OPERATING AMBIENT TEMPERATURE:** +60°C (+140°F).

**POWER:** 115 volts, 50/60 Hz, 1 watt.

**MOUNTING:** Two holes for mounting to Gates turntable or inside of any cabinet. May be mounted in any position.

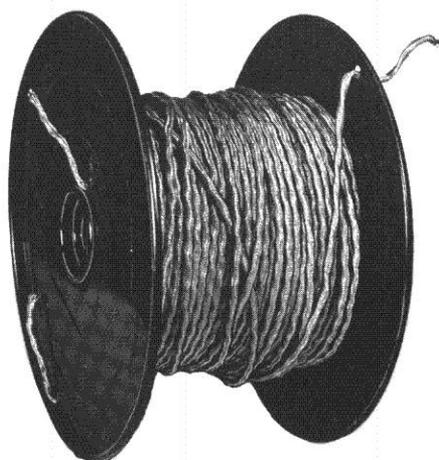
**SIZE:** 2 $\frac{1}{8}$ " wide, 8 $\frac{3}{8}$ " long, 2 $\frac{3}{8}$ " high.

**WEIGHT AND CUBAGE:** Net weight, 1 $\frac{1}{4}$  lbs. Packed weight, 8 lbs. Cubage, 1 cubic foot.

## ORDERING INFORMATION

Transistor equalized turntable preamplifier (order two for stereo).....994-6244

## WIRE — AUDIO



Gates Radio Company has a complete line of quality wire and cable to fill any broadcasting or communication need. Cable for every purpose—shielded, unshielded, multi-conductor, power, audio system and more.

The following wire recommended for microphone and shielded power supply cable has high abrasion resistance and extra flexibility. It is especially suited for installations where cable must take tight bends or lie perfectly flat. The cable has tinned conductors with tinned copper-braided shield.

8410 Belden single conductor shielded, black rubber jacket.....	250-0059
8412 Belden (Gates MIC-100) 2 conductor stranded 20 AWG Braided shield cotton wrap heavy rubber jacket.....	250-0036
8428 Belden neoprene jacketed heavy duty mic cable. 2 conductor 18 AWG braided shield.....	253-0024
SH-2-20 2 conductor stranded 20 AWG, 2/push back braided shield not insulated.....	253-0018
1261 2 conductor stranded 24 AWG, braided shield, not insulated.....	253-0001

The following are 2 conductor, color-coded broadcast audio cables which come in standard and miniature size. Type 8437 has a braided, tinned copper shield; types 8450 and 8451 have spiral-wrap aluminum-Mylar shields. All types have tinned drain wires. Available in 100, 500 or 1000 foot spools. Average shipping weight per 100 feet, 2 $\frac{1}{2}$  lbs. Type 8451 available in black vinyl or gray jacket.

8437 Belden 2 conductor 22 AWG solid, w/drain wire and braided shield, black vinyl jacket.....	253-0062
8450 Belden miniature audio cable 2 conductor, 22 AWG solid, drain wire, foil shield vinyl jacket.....	253-0054
8451 Belden miniature audio cable, 2 conductor 22 AWG stranded, drain wire, foil shield, vinyl jacket.....	253-0059
Cable 6 conductor, 3 pair, wire size 22 AWG.....	250-0081
Wire 18 AWG stranded, yellow.....	252-0247
High voltage wire 8 AWG 40 kV.....	255-0006

# Modular Audio Equipment Cabinets

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"Combo" desk system includes two dual pedestals (M-6449) and table top section (M-6450). Electronic equipment shown to demonstrate a typical installation.

## MODERN, FLEXIBLE STYLING

The fullest flexibility of custom cabinetry, with the economy of standard production units, combine to offer broadcasters a totally modern concept in control room desks. Beautifully styled in walnut grain and textured Formica, these desks have the appearance of fine furniture, and the strength and durability to last for years.

"Building blocks" of single-width pedestal, double pedestal, uniform table top sections, plus two decorator leg sections can be assembled in dozens of configurations. Pedestal base sections have removable grill front and cabinet-finish rear doors that remove to reveal standard 19" rack mounting rails.

Cartridge tape equipment, leveling amplifiers, jack fields, etc., may be mounted for operator convenience. The interior of each cabinet is also finished, so cabinets may be used for disc or tape storage by removing the panels entirely.

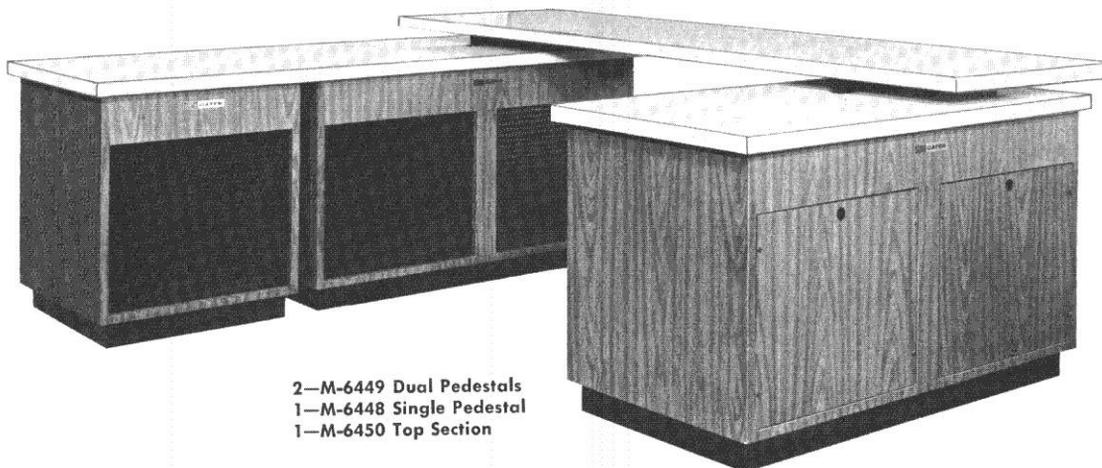
When used with turntables, the pedestals conform to NAB standards for transcription cabinets. For console wiring, a cable trough is concealed under the table top section near the rear. The "horseshoe" or "combo" configuration shown above provides an attractive and functional control center in keeping with the aesthetic beauty of modern communications equipment.

## ORDERING INFORMATION

Combo desk system, complete with 2 double pedestals and top section. For specifications on individual items that make up the system, see Page 201. Console, microphone and turntables pictured above are not included.

994-6454

# Modular Audio Equipment Cabinets



2—M-6449 Dual Pedestals  
1—M-6448 Single Pedestal  
1—M-6450 Top Section

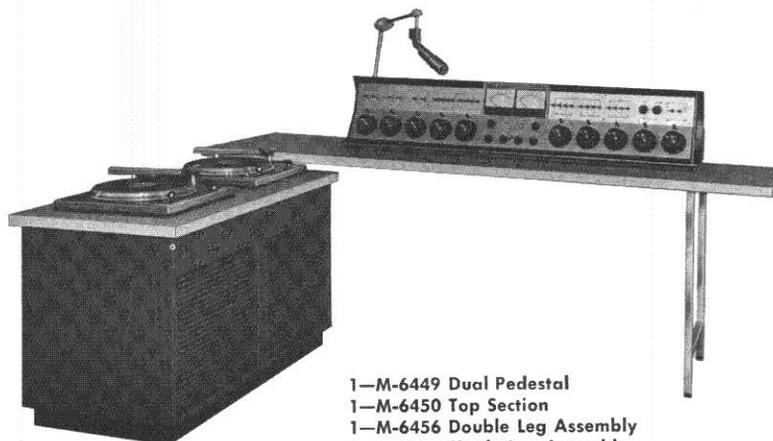
## WIDE VARIETY OF COMBINATIONS

By choosing combinations of modular desk components, large and complex control room arrangements are made possible. Shown above is a desk system with one extended "wing". This could easily accommodate an extra turntable, two-way radio, or other miscellaneous equipment. Or, the top can be left bare for counter space, with the grilled area used for mounting any rack-mounted equipment such as reel-to-reel recorders, utility amplifiers, etc.

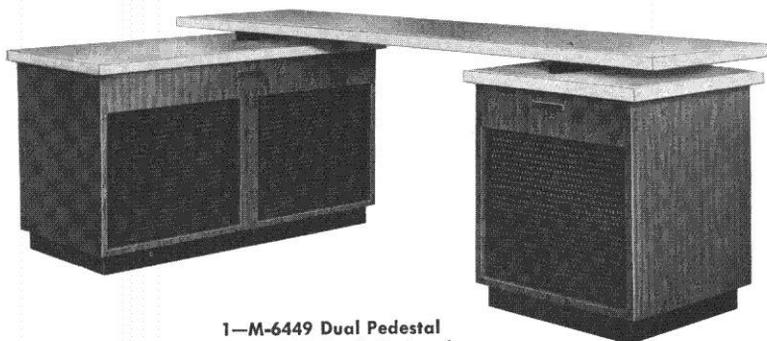
Development of this tasteful equipment cabinetry encompassed human engineering studies, styling analysis and comparison with established mechanical specifications where available. For instance, the turntable pedestals conform to the height standards of the NAB, and are four inches lower than the desk top section for comfortable operation. Color and texture of the cabinets blend easily with any studio color scheme and provide a pleasant setting in keeping with the trend of modern office furniture.

Many interesting variations in control room desks allow tailor-made arrangements for specific station operations. The single pedestal, serving as a right hand desk base, may also provide rack space for Criterion tape cartridge equipment, reel-to-reel recorder or storage. All pedestals have sturdy black steel bases with leveling feet. Expanded metal grill or finished access door removes to reveal 16" of standard 19" rack space. Double and single leg assemblies are of sturdy 1" satin chrome square steel tubing with leveling feet. Both 12" and 16" Gates turntables and all types of speech input consoles may be used with these cabinets.

For ordering information and specifications on pedestals, top and leg assemblies see Page 201.

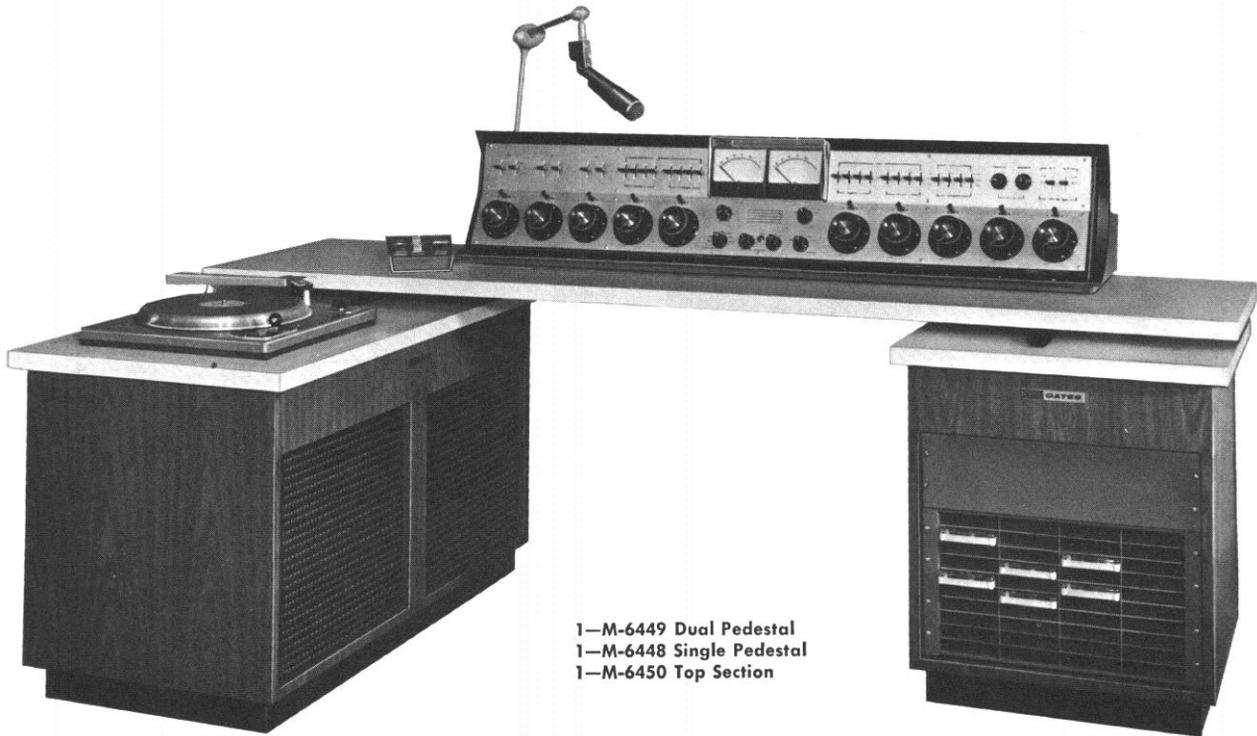


1—M-6449 Dual Pedestal  
1—M-6450 Top Section  
1—M-6456 Double Leg Assembly  
1—M-6455 Single Leg Assembly



1—M-6449 Dual Pedestal  
1—M-6448 Single Pedestal  
1—M-6450 Top Section

# Modular Audio Equipment Cabinets



1—M-6449 Dual Pedestal  
1—M-6448 Single Pedestal  
1—M-6450 Top Section

## TYPICAL SELECTIONS

Gates modular equipment cabinetry shown here serves to suggest how a modular system may be assembled to fit specific studio requirements. Note the convenient storage area provided by the double and single turntable pedestals.

In addition to modular studio furniture Gates also offers the world's most complete selection of standard production audio equipment. A Gates District Manager will be happy to discuss

particular programming requirements with you, and recommend a complete control room package suited to your individual needs.

For ordering information and specifications on audio equipment cabinetry items, see Page 201. Console, turntables, microphone, and cartridge tape equipment shown here are not included with the cabinet equipment.



M-6449 Double Turntable Pedestal.



M-6448 Single Turntable Pedestal.

# Modular Audio Equipment Cabinets



## SINGLE PEDESTAL, M-6448

Mounts one 12" or 16" turntable. 16" rack mount space front with expanded metal grill. 16" rack mount space rear with wood-grain door. Constructed of 3/4" solid flake board, laminated with Formica. Furnished with 2 1/2" steel base and floor levelers.

**FINISH:** Walnut formica. Top in champagne formica and trim painted satin black.

**SIZE:** Height 26", width 23", depth 23".

**WEIGHT:** Net, 60 lbs.; packed 70 lbs.

**CUBAGE:** 12 cubic feet.

**ORDER NUMBER** ..... 994-6448



## DOUBLE PEDESTAL, M-6449

Mounts two 12" or 16" turntables. Total 64" of 19" rack mount space available front and back, both sections. 3/4" flake board with Formica laminate. 2 1/2" steel base and floor levelers.

**FINISH:** Walnut formica. Top in champagne formica and trim painted satin black.

**SIZE:** Height 26", width 45", depth 23".

**WEIGHT:** Net, 108 lbs.; packed, 140 lbs.

**CUBAGE:** 18 cubic feet.

**ORDER NUMBER** ..... 994-6449

**NOTE:** Cabinets normally supplied less cut-outs for turntables. If cut-outs desired, an added cost is involved.

## METAL GRILL REPLACEMENTS

Where the expanded metal grill used on cabinet fronts, such as the M-6448 or M-6449, is to be eliminated in part for rack mounted items, other size grills are listed below to fill the unused portion. Example: full grill is 16" high. If 5 1/4" rack space used, order 994-6453B to fill remaining space.

Grill 10 1/2" high ..... 994-6453B

Grill 5 1/4" high ..... 994-6453C

Grill 3 1/2" high ..... 994-6453D

## UNIFORM TABLE TOP SECTION

Complete with wiring trough, and angle brackets for assembly with pedestals or legs. When assembled, desk surface is 29" from floor. (Not illustrated.)

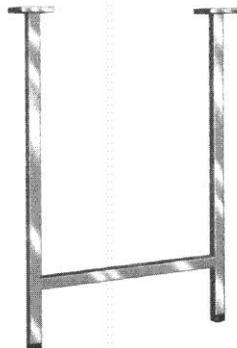
**FINISH:** Neutral champagne formica.

**SIZE:** Length 84", depth 29", thickness 1 5/16". (Other lengths on special order.)

**WEIGHT:** Net, 55 lbs.; packed, 70 lbs.

**CUBAGE:** 7.5 cubic feet.

**ORDER NUMBER** ..... 994-6450



## DOUBLE LEG, M-6456

For supporting top section. Square 1" steel welded construction with crossbrace. Complete with mounting flanges and floor levelers.

**FINISH:** Satin chrome steel.

**SIZE:** 1" x 1" x 28". Over-all width 21".

**WEIGHT:** Packed, 10 lbs.

**CUBAGE:** 2 cubic feet.

**ORDER NUMBER** ..... 994-6456



## SINGLE LEG, M-6455

Mounts beneath desk top section. Square 1" steel tubing with mounting flange and floor leveler.

**FINISH:** Satin chrome steel.

**SIZE:** 1" x 1" x 28".

**WEIGHT:** Packed, 5 lbs.

**CUBAGE:** 1 cubic foot.

**ORDER NUMBER** ..... 994-6455



**GATES**

# Portable Audio Turntable-Console



## MODEL KD-20A

Rugged, compact, and all solid state, this economical unit is ideal for remote disc jockey shows and special on-the-spot broadcasts.

**COMPLETE REMOTE CAPABILITY:** Two high quality, three speed turntables, with individual mixing controls are provided. Two microphones and a remote input can also be mixed and are individually selectable by a three position switch. The remote input has a 50 dB pad which enables use of a high level source such as a tape recorder or remote amplifier, adding to the capability of the unit. Line feed and control, PA feed and monitoring are included.

**COMPACT DESIGN:** This unit is packaged for portability. Weighing only 68 pounds, the KD-20A has detachable legs which fasten underneath the base for ease in transporting. The base of this console is fiberglass to provide protection for the equipment. Side handles enable easy carrying, and the unit's over-all size enables it to fit into the rear of a standard size car.

**EXCELLENT AUDIO:** Both turntable channels have integral RIAA equalization to match their respective cartridges. Microphone channel frequency response is  $\pm 2$  dB from 50 to

15,000 Hz. Output level is +6 VU with 3% or less distortion from 50 to 10,000 Hz.

The KD-20A's output passes through a 3 dB pad before feeding the broadcast line. The output also passes through a resistive isolation network before going to the monitor phone jack. Feed to the PA system is isolated by a bridging transformer and a separate fader is used to control PA level.

**SOLID STATE ELECTRONICS:** All circuitry in this console from preamplifiers to power supply is solid state, using high quality, ruggedly mounted transistors and diodes. Etched wiring is used in all amplifiers. The full wave power supply is fully regulated.

**EASE OF OPERATION:** The control placement of this unit assures easy operation by one man. Faders for the two turntables and the microphone/remote input are on the lower portion of the control panel. The three position microphone/remote switch is in the center with the PA level control and master gain control to the right and left of the VU meter respectively. Cueing of the turntables can be accomplished through headphones; monitoring is done through the headphones or an external amplifier.

## SPECIFICATIONS

**MIXING CHANNELS:** Four.

**MODE:** Monaural.

**INPUTS:** Total six—(2) turntables, (2) 50-250 ohm microphones, (1) high level 600 ohms, (1) medium level 600 ohms.

**CUEING:** Pushbuttons on turntable channels to headphone jack.

**FREQUENCY RESPONSE:** (Audio system),  $\pm 2$  dB, 50-15,000 Hz. (Pickups) Standard RIAA curve.

**DISTORTION:** 3% or less.

**OUTPUT:** 600 ohms @ +6 VU (after built-in 3 dB pad).

**NOISE:** (Microphone channel) -56 dB (relative input noise -106 dBm).

**POWER:** 117 volts, single phase, 60 Hz.

**SIZE:** 44" long, 16½" wide, 10" high.

**WEIGHT:** 68 pounds net.

## ORDERING INFORMATION

Portable KD-20A audio turntable/console

740-0032

# Proof Of Performance Equipment



A



B



C

## SA-131

A proof of performance package that assures accurate results and complete equipment to check audio and radio frequency performance. There are three basic units, plus two optional units: (A) type 210 audio oscillator, (B) M-3625 gain

set, (C) type 410 distortion meter, and optional RF pickup coil and diode rectifier for AM transmitter measurements. For FM transmitters the signal can be obtained directly from the modulation monitor for proof of performance tests.

### AUDIO OSCILLATOR

Fig. A. An excellent source for audio signals from 10 to 100,000 Hz, the type 210 oscillator consists of an RC audio circuit followed by an amplifier of extremely low distortion. Response over the entire frequency range is  $\pm 1$  dB with wave form distortion of less than 0.2% at a 5 volt output. Calibration over the 10 to 100,000 Hz range is  $\pm 2\%$ . Output impedances are 600 ohms balanced, 600 ohms unbalanced and 150 ohms unbalanced. Maximum output is 10 volts into a 600 ohm load. The unit is 6" wide, 9" high and 12" deep, including a self-contained power supply. Weight is 11 pounds.

### DISTORTION METER

Fig. C. The type 410 distortion meter measures audio distortion, noise level, audio gain or loss in decibels and AC voltages. This unit measures distortion on fundamental frequencies from 20 to 20,000 Hz and indicates harmonics up to 100 kHz. Distortion levels as low as 0.1% can be measured, and distortion measurements may be made on signal levels from 0.1 volt to 30 volts. For noise and response measurements the instrument is calibrated in 1 dB steps from 0 to  $-15$  dB. The attenuator provides additional ranges from  $-60$  dB to  $+50$  dB in 10 dB steps. The unit is 11½" wide and 9" high. Weight is 11 pounds.

### GAIN SET

Fig. B. The M-3625 gain measuring set consists of a VU meter with switching to accommodate all usable ranges for measuring purposes. The attenuation circuit includes a 10 step 2 dB per step variable attenuator of the balanced ladder type, and fixed plug-in pads which may be used in any number from 1 to 3. Pads are used for attenuation and impedance matching. Two are supplied, providing 40 dB attenuation at 600/600 ohms and one with 20 dB at 600/250 ohms, all balanced H. The gain set is completely shielded.

### PICKUP COIL AND RECTIFIER

Optional accessory for AM transmitters only. Designed for use with the type 410 distortion meter, the pickup coil is supplied ready to couple to the tank circuit of an AM transmitter. It is supplied with 15 feet of coaxial cable that connects the coil to the diode rectifier unit. Complete RF filtering guarantees a pure audio output signal free from RF disturbances. 4" long, 2" wide, and 1¼" high.

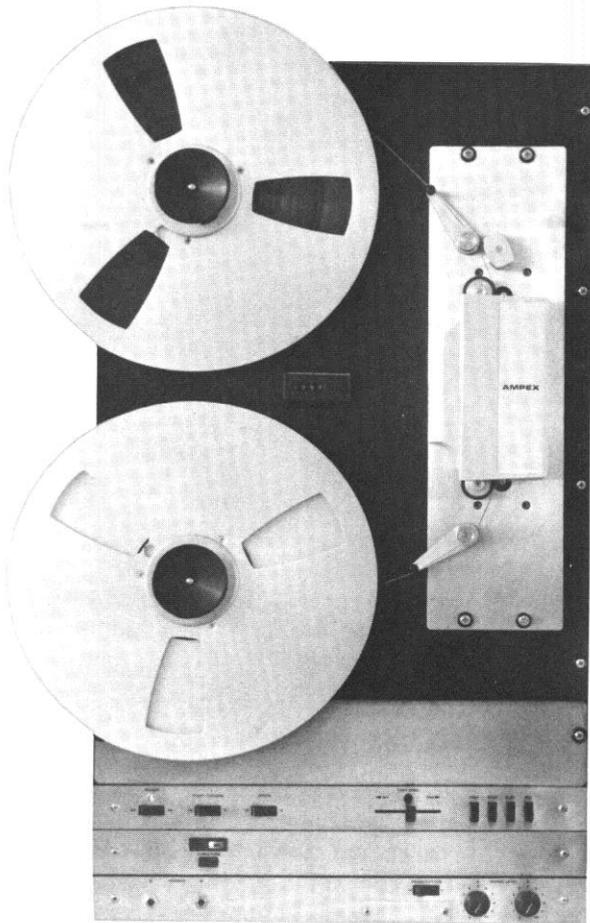
## SPECIFICATIONS

**INPUT IMPEDANCE:** 600 ohms, balanced.  
**OUTPUT IMPEDANCE:** Variable 30 to 600 ohms.  
**OUTPUT LEVEL:** Variable from +21 dBm to  $-136$  dBm.  
**RESPONSE:**  $\pm 0.5$  dB, 30-15,000 Hz.  
**DISTORTION AND NOISE:** Negligible.  
**SIZE:** 12¾" wide, 8¾" high, 4" deep.

## ORDERING INFORMATION

SA-131 proof of performance package, consists of one each  
 Model 210, M-3625, and Model 410.....994-3663  
 Model 210 audio oscillator.....700-0045  
 Model 3625 gain set.....994-3625  
 Model 410 distortion meter.....700-0040  
 Pickup coil and rectifier (optional for AM only).....994-3626-002

# Professional Tape Recorders



## AMPEX ABR-10/ABR-15 SERIES

The new ABR Series recorder/reproducers have been designed specifically for the broadcaster.

The ABR-10 operates with reel sizes from 5 to 10½ inches. The ABR-15 is designed for reels of up to 15 inches for long-duration record or playback. ABR Series machines are available in either record/reproduce or playback-only configurations.

In the bidirectional configuration, Ampex ABR Series recorders are totally symmetrical machines. Separate capstan drive motors are used, one for each direction, allowing improved production and providing a full program automation capability. Tape is always pulled across the heads, thus improving head-to-tape contact.

Automatic reversing with the use of alternate tracks in each direction eliminates turning reels over and recueing. A new direct-drive system controlled by an electronic servo uses specially designed DC motors. This system eliminates several electrical and mechanical components that can affect tape speed stability and increase flutter. Tape speed is maintained regardless of voltage, frequency, and phase fluctuations from the input power line.

## SPECIFICATIONS

**TAPE FORMAT:** Full, half or quarter tracks on ¼-inch-wide tape, 1-mil or 1½-mil base. Specifications are based on Ampex recommended professional quality magnetic tape on 10½-inch aluminum reels.

**TAPE SPEEDS:** Standard, selectable pairs from 15/16, 1⅞, 3¾, 7½, or 15 ips for either unidirectional or bidirectional operation.

**REEL SIZE:** 5 inches to 10½ inches in diameter for Model ABR-10. 5 inches to 15 inches in diameter for Model ABR-15.

**FREQUENCY RESPONSE:** 15 ips: 30 to 18,000 Hz, ±3 dB; 7½ ips: 40 to 15,000 Hz, ±2 dB; 3¾ ips: 40 to 10,000 Hz, ±2 dB; 1⅞ ips: 40 to 10,000 Hz, ±3 dB; 15/16 ips: 100 to 5000 Hz, ±3 dB.

**CROSSTALK REJECTION:** 60 dB or better at 1000 Hz (2-track head stacks).

**BIAS OSCILLATOR:** Nominal bias/erase frequency: 100 kHz.

**FLUTTER AND WOW:** 15 ips: 0.1%; 7½ ips: 0.15%; 3¾ ips: 0.18%; 1⅞ ips: 0.25%; 15/16 ips: 0.4%.

### SIGNAL-TO-NOISE RATIO:

Tape Speed	Full Track	Half Track	Quarter Track
15 ips	66 dB	63 dB	57 dB
7½ ips	66 dB	63 dB	57 dB
3¾ ips	63 dB	58 dB	51 dB
1⅞ ips		45 dB	42 dB
15/16 ips		40 dB	40 dB

(Peak record level to unweighted noise. Includes bias, erase, and playback amplifier noise.)

**INPUT:** 100,000 ohms unbalanced. Accepts line level from -17 dBm for recommended operating level.

**OUTPUT:** +4 dBm, balanced. +24 dBm clipping level. Amplifier total harmonic distortion at +20 dBm is less than 0.1%.

**EQUALIZATION:** 90 to 200 microseconds at 15/16, 1⅞, and 3¾ ips. NAB equalization for 7½ and 15 ips tape speeds.

**FAST SPEED:** Fast speed for rewind or search functions manually adjustable. Minimum rewind time: approximately 90 seconds for 2400-foot NAB reel. Approximately 3 minutes for 5000-foot, 14-inch reel.

**START TIME:** Operating speed obtained in 0.1 second or less; 3 seconds to normal flutter specification.

**STOP TIME:** At 15 ips (15-in. reel) tape moves 3 inches.

**TAPE SPEED ACCURACY:** Within ±0.08% from beginning to end of reel. With internal speed control, tape speed unaffected by line voltage or frequency fluctuations.

**REFERENCE OSCILLATOR STABILITY:** Bridge Oscillator: ±0.05%, 0° to 65°C. Crystal Oscillator: ±0.01%, -10° to 75°C.

**CAPSTAN SPEED ACCURACY:** Capstan speed as referred to the servo reference frequency shall be less than that shown as measured throughout any reel of tape:

TAPE SPEED	CAPSTAN POSITION ERROR
15 ips	± 75 microseconds
7½ ips	±150 microseconds
3¾ ips	±300 microseconds

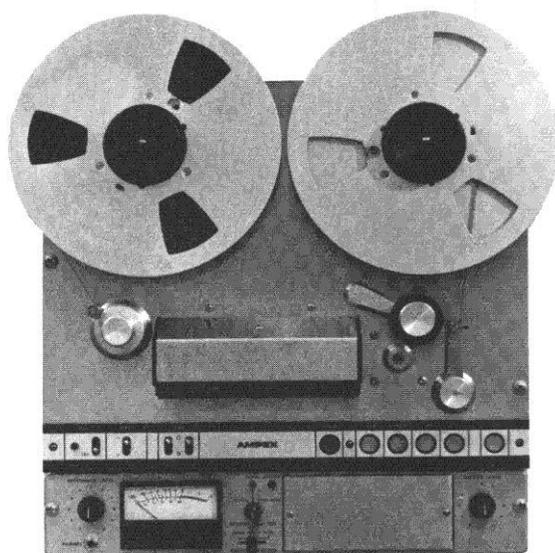
**POWER REQUIREMENTS:** 105 to 125 VAC, 50/60 Hz.

**POWER CONSUMPTION:** 2.2 amps at 115 VAC.

**SIZE AND WEIGHT:** ABR-10, Tape Transport (bidirectional): 14 inches high x 19 inches wide; 42 pounds. ABR-15, Tape Transport (bidirectional): 24½ inches high x 19 inches wide; 50 pounds. Electronics and Control Units: 1¾ inches high x 19 inches wide (each unit); 4-6 pounds.

ORDERING INFORMATION AVAILABLE ON REQUEST.

# Professional Tape Recorders



## AMPEX 440-B TAPE SYSTEM

One of the finest commercial tape recorders available anywhere. The all-transistor Ampex 440-B series sets the highest standards in professional recording performance. Uncompromising quality characteristics, both electronic and mechanical, result in superiority of performance and long, trouble-free operation. Transport control buttons are recessed so that they cannot be accidentally pressed; all can be remote controlled. The 440-B is the professional broadcast version of Ampex recorders used by leading Hollywood recording companies. Rack, Portable, or Console mount, monophonic or stereophonic versions, dual speed: 7½-15, or 3¾-7½ ips.

Rigid die-cast frame provides absolutely flat mounting of all mechanical components for precise tape alignment. The AG-440-B has been designed for easy, rapid maintenance, and minimum downtime. Modular design with front panel plug-in circuit boards permits fast servicing and replacement. Individual head stacks can be replaced with a single screw and plug-in connector. Transport motors, guides, and major components can be quickly removed and replaced in exact alignment because of the precision milled transport casting. All relays plug-in and are fully interchangeable.

## SPECIFICATIONS

- TAPE SPEEDS:** 7½ and 15 ips, or 3¾ and 7½ ips.  
**SIGNAL TO NOISE RATIO:** 15 ips full track 68 dB, 2 track 60 dB; 7½ ips full track 68 dB, 2 track 60 dB; 3¾ ips full track 63 dB, 2 track 56 dB.  
**FREQUENCY RESPONSE (OVER-ALL):** 15 ips ±2 dB, 30 to 18,000 Hz; 7½ ips ±2 dB, 40 to 10,000 Hz; 7½ ips +2 to -4 dB, 30 to 15,000 Hz; 3¾ ips ±2 dB, 50 to 7500 Hz.  
**FLUTTER:** 15 ips below 0.08% rms; 7½ ips below 0.10% rms; 3¾ ips below 0.15% rms.  
**PLAYBACK OUTPUT:** +8 dBm into 600 ohms—restrappable for +4 dBm output balanced or unbalanced. Maximum of +29 dBm before clipping.  
**RECORD INPUT:** 100 K ohm unbalanced bridging with dummy plug or 20 K ohm bridging with plug-in transformer -17 dBm to produce recommended operating level.  
**START/STOP:** Start, tape at full speed in less than 1/10 second. Stop, tape travel 2" or less after depressing stop button.  
**PLAYBACK TIMING ACCURACY:** ±0.2% (±3.6 seconds in 30 minutes).  
**EQUALIZATION:** NAB standard, CCIR on special order.  
**POWER REQUIREMENTS:** 117 volts, 50 or 60 Hz @ 2.5 amp. for 2 channel.  
**DIMENSIONS:** Transport, 19" wide x 15¾" high. Electronics, 19" wide x 3½" high.  
**MOUNTING CONFIGURATIONS:** Portable, Console, or Unmounted.  
**REEL SIZE:** Standard up to 10½ inch, adjustable up to 11½" reels.  
 Complete specification on request.

## ORDERING INFORMATION

AG-440B-1 (4010131-01) full track, unmounted, 7.5/15 IPS, 60 Hz	730-1164
AG-440B-1 (4010131-03) as above, console mounted	730-1165
AG-440B-1 (4010131-09) half track, console mounted, 7.5/15 IPS, 60 Hz	730-1168
AG-440B-2 (4010132-01) two track stereo, unmounted, 7.5/15 IPS, 60 Hz	730-1170
AG-440B-2 (4010132-03) as above, console mounted	730-1171
AG-440B-2 (4010132-13) two track stereo, plus quarter track playback, unmounted, 7.5/15 IPS, 60 Hz	730-1172
AG-440B-2 (4010132-15) as above, console mounted	730-1173
AG-440B-2 (4010132-07) two track stereo, unmounted, 3.75/7.5 IPS, 60 Hz	730-1174
AG-440B-2 (4010132-09) as above, console mounted	730-1175
AG-445B-1 (4010141-19) half track, unmounted, 3.75/7.5 IPS, 60 Hz	730-1181

# Professional Tape Recorders



## AMPEX AG-500 SERIES

The AG-500-1 is a versatile one-channel recorder with full or half-track heads. This portable single channel solid state unit has input controls that can mix two incoming line signals. Use of mike pre-amp accessory converts line inputs to accept low impedance microphones. Narration over music, music/voice mixing or special sound-on-sound capabilities are possible. Recorder will feed 600 ohm remote broadcast phone line.

### SPECIFICATIONS

**SPEEDS:** 7½ and 15 ips, or 3¾ and 7½ ips (AG-500-4 for 4 track stereo, 3¾ and 7½ ips only).

**FREQUENCY RESPONSE (OVER-ALL):** 15 ips ±2 dB, 30 to 18,000 Hz; 7½ ips ±2 dB, 30 to 15,000 Hz; 3¾ ips +2 dB -4 dB, 40 to 8,000 Hz.

**SIGNAL TO NOISE RATIO:** 7½ and 15 ips, full track (60 Hz) 60 dB (50 Hz) 57 dB, half or two track 55 dB. 3¾ ips full track 55 dB, half and quarter track 50 dB.

**WOW AND FLUTTER:** 15 ips less than 0.15% rms, 7½ ips less than 0.18% rms, 3¾ ips 0.25% rms.

**TIMING ACCURACY:** ±0.25%, 7½ and 15 ips; ±0.40%, 3¾ ips.

**OUTPUT:** +4 dBm into 600 ohm balanced load.

**POWER REQUIRED:** 117 Volts, 60 Hz, 1.50 Amp. 230 Volts, 50 Hz, 0.75 Amp.

**RACK SPACE:** Transport, 8¾" H x 19" W x 6" D. Electronics, 3½" H x 19" W x 6" D.

**WEIGHT:** 1 channel portable 42 lbs., 2 channel portable 52 lbs.

### ORDERING INFORMATION

AG-500-1 Single channel Full track, rack mount, 7.5/15 ips, 60 Hz	730-0963
AG-500-1 Same as above except half-track	730-0964
AG-500-1 Single channel, full track, rack mount, 3.75/7.5 ips, 60 Hz	730-0965
AG-500-1 Same as above except half-track	730-0966
AG-500-2 Stereo, 2 track, rack mount, 7.5/15 ips, 60 Hz	730-0967
AG-500-2 Stereo as above except 3.75/7.5 ips	730-0968
Portable Case for AG-500 single channel	730-0970
Portable Case for AG-500 two channel	730-0971



## AMPEX AG-600

The AG-600 series is designed for broadcast, where compact lightweight professional quality recording equipment is needed or where budgets are limited.

### SPECIFICATIONS

**FREQUENCY RESPONSE:** 7½ ips: ±2 dB from 60 Hz to 10 kHz; +2-4 dB from 40 Hz to 15 kHz. 3¾ ips: ±2 dB from 50 Hz to 7 kHz; +2-4 dB from 40 Hz to 8 kHz.

**SIGNAL TO NOISE:** 7½ ips: Full track 57 dB; Half track 55 dB; 3¾ ips: Full track 52 dB; Half track 50 dB.

**CROSSTALK REJECTION:** Better than 40 dB mid-frequency.

**FLUTTER AND WOW:** (Measured by ASA Standards) 7½ ips less than 0.17%; 3¾ ips less than 0.25%.

**TIMING ACCURACY:** 7½ ips ±0.2% (±3.6 seconds in 30 minutes). 3¾ ips ±0.4% (±7.2 seconds in 30 minutes).

**FAST FORWARD OR REWIND TIME:** 90 seconds for full 1200 foot reel.

**SPEEDS:** Dual speed, 3¾ and 7½ ips.

**REEL SIZE:** 5" and 7".

**EQUALIZATION:** 117 volt, 60 Hz models: 3¾ ips, 120 microsecond. 7½ ips, NAB. 115/230 volt, 50 Hz models: 3¾ ips, 120 or 200 microsecond. 7½ ips, NAB or CCIR.

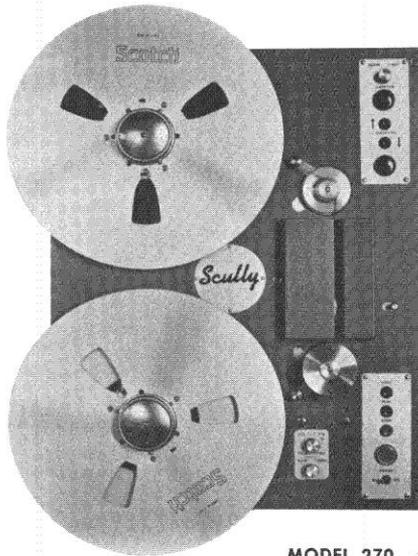
**POWER REQUIREMENTS:** For 117 volt operation 0.5 amperes. For 230 volt operation 0.3 amperes.

**WEIGHT:** Single channel: 28 lbs. portable. Dual channel 42 lbs. portable.

### ORDERING INFORMATION

AG-600-1 NAB equalization, full track, unmounted, 60 Hz, 117 Volt	730-1018
AG-600-1, as above in portable case	730-1019
AG-600-1, NAB equalization, half track, unmounted, 60 Hz, 117 Volt	730-1020
AG-600-1, as above in portable case	730-1021
AG-600-2, two-channel, two track, one-half track stereo, NAB equalization, unmounted, 60 Hz, 117 volts	730-1022
AG-600-2 same as above in portable case	730-1023
AG-600-4, two channel, four track, one-quarter track stereo, NAB equalization, unmounted, 60 Hz, 117 volt	730-1026
AG-600-4, Same as above in portable case	730-1027
AA-620 Portable speaker-amplifier for AG-600 and AG-500 series. 10" woofer, 3½" tweeter, 20 watt solid state amplifier in enclosure	730-1030

# Professional Tape Recorders



MODEL 270

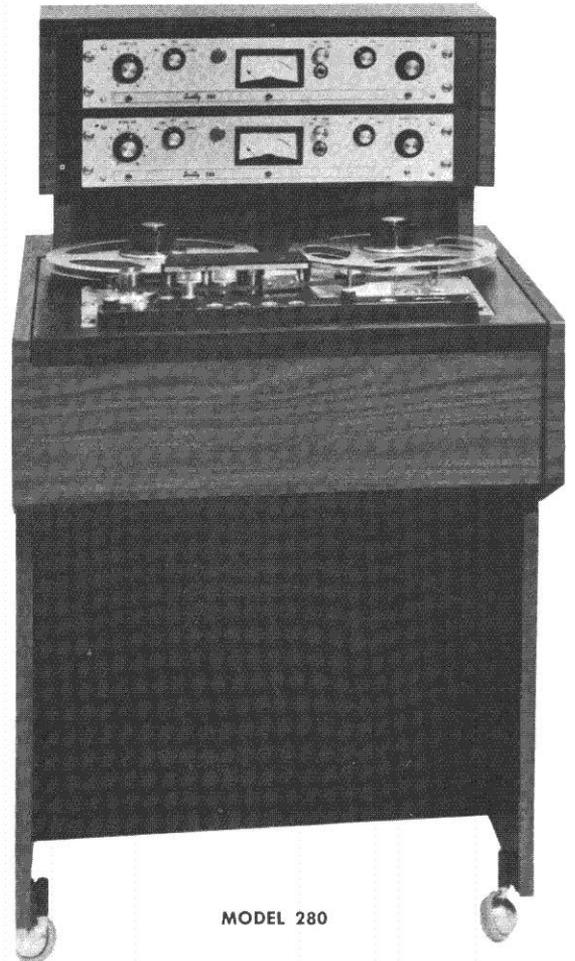
## SCULLY PRECISION TAPE EQUIPMENT

The portable Scully 270 Reproducer is intended for broadcasters, background music operators or any application where long life, reliability and exacting performance specifications in tape handling equipment are essential. The companion model 280 complete record/reproduce system has the same fine features plus quality all-transistor recording amplifier.

### SPECIFICATIONS

#### Model 270

- TAPE SPEEDS:** 3¾ ips-7½ ips or 7½-15 ips.
- TAPE SIZE:** ¼" or ½".
- HEAD CONFIGURATION:** Monophonic half or full track; stereo 2, 3, or 4 channel.
- REEL SIZE:** Up to 14".
- REEL HUBS:** NAB, CCIR.
- STARTING TIME:** 1/10th second.
- STOPPING TIME:** 1/5th second.
- FAST WIND TIME:** 4800 foot reel—105 seconds.
- PLAYING TIME:** 14" reel, 4800 feet 1½ mil tape @ 3¾ ips—8 hrs. 7½ ips—4 hrs; 14" reel, 9600 feet ½ mil tape @ 3¾ ips—16 hours; @ 7½ ips—8 hours.
- FREQUENCY RESPONSE:** ±2 dB 50-7500 Hz @ 3¾ ips. ±2 dB 50-15,000 Hz @ 7½ ips. ±1½ dB 50-15,000 Hz @ 15 ips.
- FLUTTER AND WOW:** 0.2% RMS @ 3¾ ips. 0.1% RMS @ 7½ ips. .08% RMS @ 15 ips.
- SIGNAL TO NOISE RATIO (FULL TRACK):** -60 dB @ 7½ and 15 ips.
- TIMING ACCURACY:** Better than 99.8% (30 minute reel).
- AMPLIFIER:** Solid State, plug-in.
- AMPLIFIER EQUALIZATION:** Front panel switch.
- AMPLIFIER OUTPUT:** +18 dBm 600 ohms balanced line.
- AMPLIFIER DISTORTION:** Less than 0.5% total HD at +18 dBm.
- OPERATING CONTROLS:** Play, fast, Direction Change, Stop, Speed Selector, Equalization.
- REMOTE FEATURES:** All controls except motor speed change.
- REVERSING:** Foil using low current transistor switching, with mechanical memory.
- MOTORS:** Two torque and one hysteresis synchronous speed reversible capstan motor.
- POWER REQUIREMENTS:** 117 V, 50/60 Hz, 275 watts.



MODEL 280

- CONTROL SYSTEM:** All relays and solenoids 24 volts DC; plug-in relays.
- CHASSIS FRAME:** ¾" cast aluminum 2" depth.
- MAIN PANEL:** Precision aluminum plate.
- FACE PLATE:** Easily removable, permitting continuous operation.
- BREAKING SYSTEM:** Disc Type.
- TAPE TENSION:** Continuous adjustable electrical controls system.
- WEIGHT:** 79 lbs.
- SHIPPING WEIGHT:** 90 lbs.
- SIZE:** 19" x 24½" x 8¾".

## ORDERING INFORMATION

- Model 270-1 Rack mount reproducer, ½ track monophonic, 14" reel capacity. 7.5/15 ips.....730-0927
- Model 270-2 As above, except for stereophonic reproduction.....730-0928
- Model 280-1 Rack mount record/reproduce. ½ track monophonic, 10½ reel capacity. 7½-15 ips.....730-0923
- Model 280-2 As above, except for stereophonic.....730-0924
- Model 280-1 (SP-14) Rack mount model 280 monophonic recorder with 14" reel capacity.....730-0925
- Model 280-2 (SP-14) As above, except for stereo.....730-0926

# Professional Tape Recorders



750.00

**MAGNECORD MODEL 1022  
TRANSISTORIZED DUAL CHANNEL  
RECORDER/REPRODUCER**

Model 1022 is a dual channel recorder/reproducer designed for professional applications requiring the ultimate in quality and reliability from a tape transport system. The two-channel amplifier is completely transistorized, equipped with a zener regulated power supply, and furnishes all the electronic functions of record, playback, high frequency bias and erase. Separate record and reproduce amplifiers allow simultaneous record and playback.

## SPECIFICATIONS

- TAPE SPEEDS:** 7½ and 15 ips.
- FLUTTER AND WOW:** 0.17% rms at 7½ ips. 0.15% rms at 15 ips.
- PLAYBACK TIMING ACCURACY:** ±0.2%
- FREQUENCY RESPONSE—OVER-ALL RECORD/REPRODUCE:** ±2 dB 30 Hz to 16 kHz at 7.5 ips; ±2 dB 35 Hz to 22 kHz at 15 ips.
- SIGNAL-TO-NOISE RATIO:** 53 dB at 7.5 and 15 ips.
- OUTPUTS:** 150/600 ohm balanced (+4 dBm) auxiliary A and auxiliary B unbalanced.
- HEADS:** Erase head—half-track. Record head—half-track. Play head—half-track and quarter-track.
- WEIGHT:** Transport 33 pounds. Amplifier 14 pounds.
- DIMENSIONS:** Transport 19" wide, 10½" high, 7¼" deep; Amplifier 19" wide, 5¼" high, 12½" deep. Transport Reel Overhang, 1¾" (7-inch reel).
- POWER REQUIREMENTS:** 110/130 V, 60 Hz, 180 watts.

## ORDERING INFORMATION

- 1022-X—Fully transistorized, stereo, 7.5/15 ips, half track with extra quarter track playback head, rack mounting, manual operation ..... 730-0419
- 1022-RX—As above, with provisions for remote control ..... 730-0829
- Remote Control Box, may be used with "RX" model above ..... 730-0831
- A81D128-2 Transport Case ..... 730-0425
- A81D129-2 Electronics Case ..... 730-0426



495.00

**MAGNECORD MODEL 1021  
TRANSISTORIZED MONOPHONIC  
RECORDER/REPRODUCER**

Fully transistorized with a regulated power supply, the Magnecord 1021 offers the stability of a two-speed hysteresis synchronous capstan motor plus separate reel drive motors. Equalization meets NAB standards. Input and output impedances are all balanced for broadcast equipment.

## SPECIFICATIONS

- TAPE SPEEDS:** 3.75 and 7.5 ips.
- FLUTTER AND WOW:** 0.25% at 3.75 ips; 0.17% at 7.5 ips.
- TIMING ACCURACY:** ±0.2%.
- FREQUENCY RESPONSE—OVER-ALL RECORD/REPRODUCE:** 35 to 8000 Hz ±2 dB at 3.75 ips; 45 to 18,000 Hz ±2 dB at 7.5 ips.
- SIGNAL-TO-NOISE RATIO:** 53 dB, both speeds.
- INPUTS—SWITCH SELECTED:** Microphone, 150 ohms; Balanced Bridge; Unbalanced Bridge; Unbalanced Auxiliary.
- OUTPUTS:** 150/600-ohm balanced (+4 dBm), auxiliary A and auxiliary B unbalanced.
- HEADS:** Erase head—full-track. Record head—full-track. Play head—half-track.
- WEIGHT:** Transport 33 pounds. Amplifier 14 pounds.
- DIMENSIONS:** Transport, 19" wide, 10½" high, 7¼" deep; Amplifier, 19" wide, 5¼" high, 12" deep; Transport Reel Overhang, 1¾" (7-inch reel).
- POWER REQUIREMENTS:** 110/130 V, 60 Hz, 180 watts.

## ORDERING INFORMATION

- 1021-X—Fully transistorized, monaural, 3.75/7.5 ips, full track erase and record, half track playback, rack mounting, manual operation ..... 730-0418
- 1021-RX—As above, with provisions for remote control ..... 730-0828
- Remote Control Box, may be used with "RX" model above ..... 730-0831
- A81D128-2 Transport Case ..... 730-0425
- A81D129-2 Electronics Case ..... 730-0426