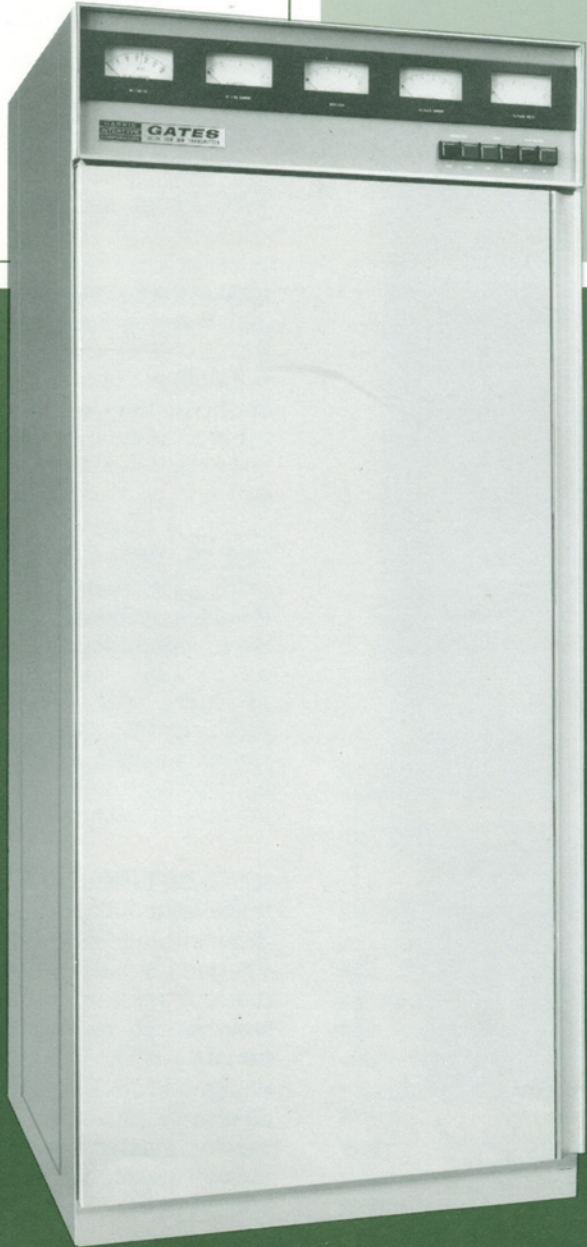




# BC-1H

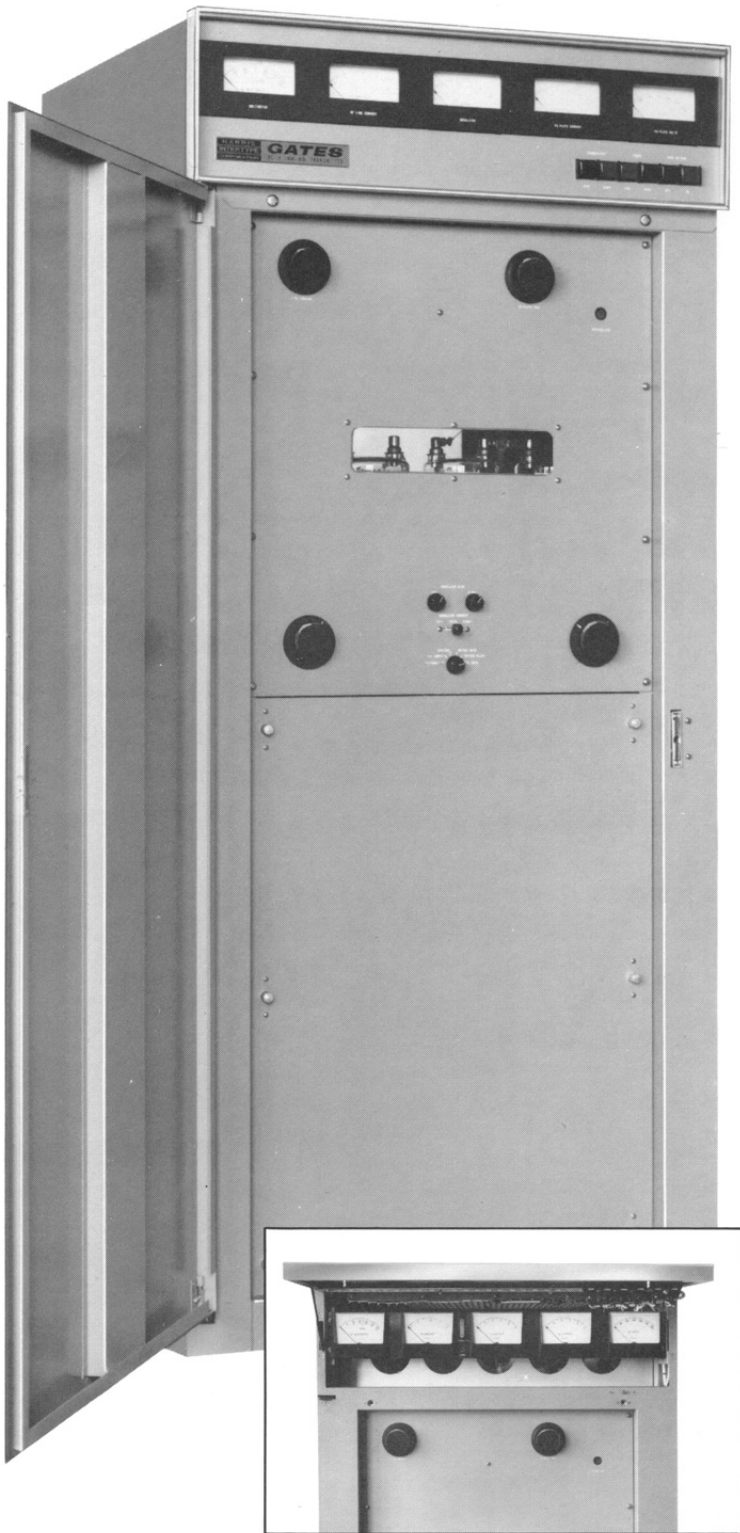
1000/500/250 WATT  
MEDIUM WAVE  
AM BROADCAST  
TRANSMITTER

# AM



# BC-1H--WHAT BROADCASTERS WANT

125% POSITIVE PEAK MODULATION CAPABILITY  
AND MODULATOR TUBES, SOLID-STATE AUDIO DRIVER



BC-1H front view, door removed. Hinged meter panel raises to allow easy access for inspection and maintenance. Meters are more convenient than ever as cabinet is only six feet high.

The accent is on performance and the emphasis is on reliability in this rugged 1000-watt medium wave broadcast transmitter. Beautifully styled, the BC-1H is a transmitter designed with the broadcaster in mind. Some major features are:

- 125% positive peak modulation capability.
- Highest reliability.
- Employs long-life 833A power amplifier and modulator tubes.
- Solid-state audio driver, solid-state oscillator.
- Power consumption at 1 kW is only 3150 watts at average modulation.
- Built-in dummy load rated for full 100% modulation.
- 100% accessibility from front and back.
- Modern styling in attractive, functional 72-inch cabinet.
- FCC type accepted.

**GENERAL:** The BC-1H is capable of providing the maximum positive modulation peaks allowed by the FCC (125%), with plenty of reserve for greater reliability. This 125% capability allows 2 dB more audio power in the positive peak, which can mean greater signal impact in your listening area. Other important features include a solid-state audio driver, and low power consumption.

**SOLID STATE AUDIO:** A solid-state amplifier utilizing 8 transistors drives the long-life 833A high level modulator tubes, providing reserve performance capability to achieve modulation percentages up to 125% on positive peaks . . . with distortion products still within FCC specifications. Conservative circuit design has achieved excellent audio response with minimum audio distortion. Distortion is typically under 2% from 50 to 16,000 Hz under normal programming conditions.

**RF SECTION:** Dual vacuum-type ovenless crystal units and solid state components in the frequency determining stages generate a very stable signal. Frequency adjustment and crystal changeover are made from the front panel. Four RF stages provide isolation to assure better frequency stability. Two long-life 833A tubes feed 1000 watts into a newly designed full "T" output network with excellent tuning characteristics. A second harmonic filter helps provide an unsurpassed RF signal. The final amplifier and output network are tuned by large, variable edge-wound coils.



# NT IN A 1000 WATT AM TRANSMITTER

## LONG LIFE TYPE 833A POWER AMPLIFIER UNUSUALLY LOW OPERATING COST

**POWER REDUCTION:** Quick and efficient power reduction to 500 or 250 watts is another important feature of the BC-1H. Switching in the primary of the main plate transformer eliminates power consuming, voltage dropping resistors. Plate voltage is reduced on both the power amplifier and modulator tubes, resulting in added tube life, as well as savings in power costs.

**POWER AMPLIFIER TUBES:** Chosen for performance, reliability and low cost per hour, 833A tubes are employed for both RF power amplifier and modulator output circuits. The 833A provides a combined hourly tube cost of approximately 2¢, and has worldwide availability. Also, as a husky triode, it is free of spurious emissions and tolerant of changing operating conditions caused by variances in load or fluctuations in cooling.

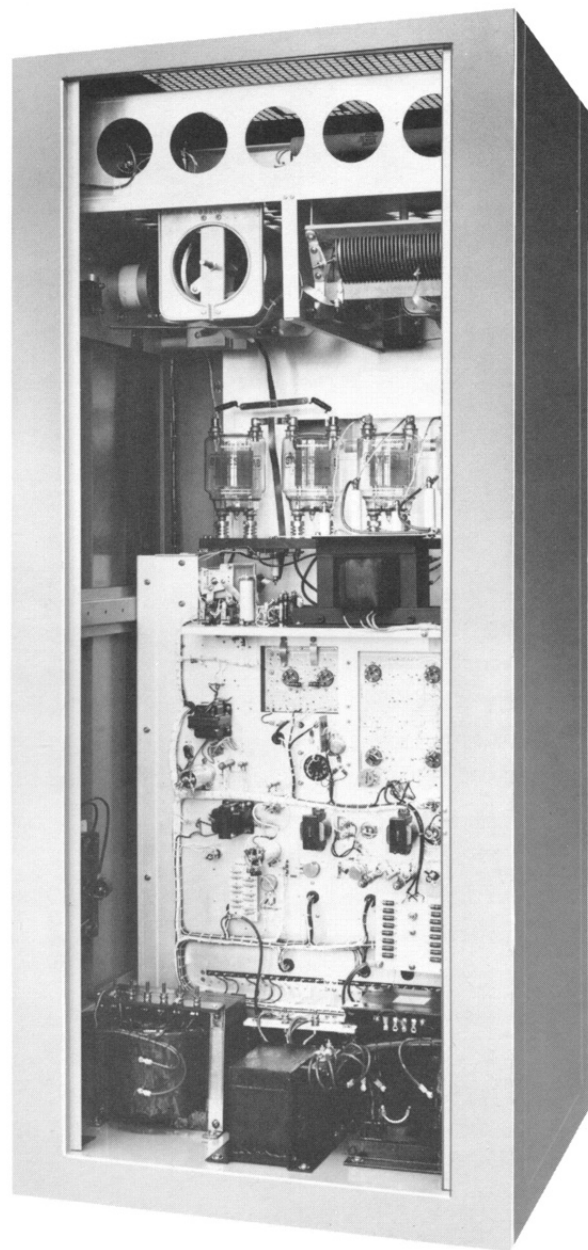
**REMOTE CONTROL:** Designed for remote control operation, the BC-1H features built-in metering kits for both plate voltage and plate current. Advance-design control circuitry permits almost instantaneous adaptation to remote control, and eliminates the need for outboard attachments. All electrical connections for remote control are brought out to appropriate terminal boards.

**RECTIFIER SYSTEM:** The BC-1H has three separate power supplies, all with large silicon rectifiers for lower power consumption and lifetime reliability. The three are: (1) main HV supply, (2) intermediate supply, and (3) bias supply.

**BUILT-IN DUMMY LOAD:** The BC-1H may be tested at a full kilowatt output with 100% modulation, using this built-in feature.

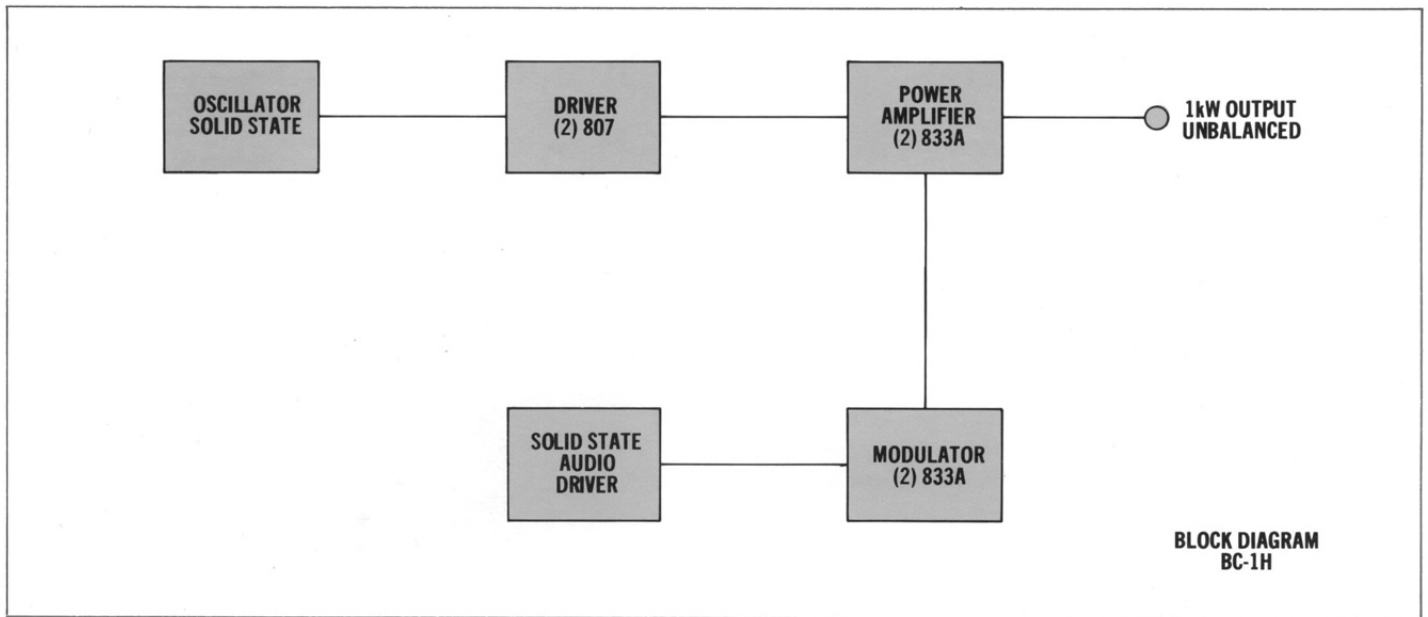
**RECYCLING:** In the event of an overload, the transmitter will recycle up to three times and then shut down if the overload has not been removed.

**EFFICIENT COOLING:** One low speed blower provides quiet, efficient cooling of all tubes. An air exhaust on the top of the transmitter vents heat to the exterior of the cabinet. The blower, located at the rear of the transmitter, is interlocked with the rear door, so that when the door is opened the blower shuts off automatically.



BC-1H, rear view, with rear door removed. Note easy accessibility to all transmitter components, made even easier by the lower seventy-two inch cabinet height.

**GENERAL DESIGN:** The BC-1H is completely self-contained in a modern, low profile, sturdy steel cabinet. The front door is hinged on the left, and opens to reveal all tuning controls. Color-coded switches for start-stop and power change functions are accessible from the front when the door is closed. These switches illuminate to show the transmitter operating status at a glance. The lift-up meter panel raises for easy access to allow inspection and maintenance. The rear door is also hinged, and offers instant accessibility to all transmitter components.



## SPECIFICATIONS

**POWER OUTPUT:** 1000/500/250 watts. Capable output to accommodate phasor loss, etc., 1100 watts.

**FREQUENCY RANGE:** 535-1620 kHz (supplied to one frequency as ordered).

**OUTPUT IMPEDANCE:** 50 ohms. Other output impedances available on special order.

**RF HARMONICS:** Exceeds FCC requirements.

**FREQUENCY STABILITY:**  $\pm 2$  Hz or better.

**CARRIER SHIFT:** 3% or less with adequate power mains. Typical is 2%.

**MODULATION:** High level.

**MODULATION CAPABILITY:** Positive peaks 125%, negative peaks 100%.

**AUDIO RESPONSE:**  $\pm 1$  dB 50-10,000 Hz,  $\pm 1.5$  dB 30-12,000 Hz.

**AUDIO DISTORTION:** 2.5% or less 50-10,000 Hz, 95% modulation. Under practical programming conditions, 2% or less 50-16,000 Hz.

**NOISE:** (1000 watts) 60 dB or better below 100% modulation.

**AUDIO INPUT IMPEDANCE:** 150 or 600 ohms at  $+10$  dBm  $\pm 2$  dB.

**POWER CONSUMPTION:** (1 kW) unmodulated, 2650 watts; average modulation, 3150 watts; 100% modulation, 3850 watts.

**POWER INPUT:** 208/230 volts, 1 phase, 3 wire, 50/60 Hz.

**DUMMY ANTENNA:** 50 ohms. Capable of dissipating full modulated output.

**TEMPERATURE:**  $-20$  degrees to  $+50$  degrees C.

**SIZE:** 72" high, 31½" wide, 31½" deep. Front and rear door swing, 32".

**WEIGHT:** Net, 770 lbs. Domestic packed, 950 lbs. Export packed, 1,075 lbs. Cubage: 68.7 cubic feet.

**TUBES:** (2) 807 intermediate driver amplifiers, (2) 833A RF power amplifiers, (2) 833A modulators.

## ORDERING INFORMATION

|   |          |
|---|----------|
| BC-1H transmitter, 1000/500/250 watts ..... | 994-6813 |
| Spare 100% tube complement for BC-1H .....  | 990-0703 |

**NOTE:** Be sure to specify carrier frequency when ordering.

**GATES DIVISION  
HARRIS-INTERTYPE CORPORATION  
123 HAMPSHIRE STREET • QUINCY, ILLINOIS 62301 U.S.A.**