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Continental Electronics
MANUFACTURING COMPANY
BOX 17040
DALLAS 17, TEXAS

Would you like more information concerning our broadcast transmitting equipment? Simply fill out the attached self-addressed and stamped card; it's ready to mail.

Continental Electronics
MANUFACTURING COMPANY
Mailing Address: Box 17040, Dallas 17, Texas, 4212 S. Buckner Blvd., EV 1-7161 LTV Subsidiary of Ling-Temco-Vought, Inc.
Designers and Builders of the World's Most Powerful Radio Transmitters

Printed in U.S.A.
CE 30-62

AM BROADCAST TRANSMITTING EQUIPMENT

Continental Electronics

Continental Electronics has designed, developed, manufactured, and installed a wide variety of specialized broadcast transmitting equipment for use throughout the world. Following is a partial listing of these transmitters by Type, Power, and Frequency. Additional details will be furnished on request.

	TYPE	POWER	FREQUENCY	DESCRIPTION
VLF	125A	2,000kw	14-30 kc	Communications CW, FSK
	123A	1,000kw	14-30 kc	Communications CW, FSK
	121A	600kw	14-30 kc	Communications CW, FSK
	119A	300kw	14-30 kc	Communications CW, FSK
LF	223A	1,000kw	150-500 kc	Broadcast AM, SSB
	220A	500kw	150-500 kc	Broadcast AM, SSB
	218A	100kw	50-150 kc	FSK, CW, SSB
MF	323B	1,000kw	535-1605 kc	Broadcast AM, SSB
	320B	500kw	535-1605 kc	Broadcast AM, SSB
	318A	100kw	535-1605 kc	Broadcast AM, SSB
	317B	50kw	535-1605 kc	Broadcast AM, SSB
	316B	10kw	535-1605 kc	Broadcast AM, SSB
	315B	5kw	535-1605 kc	Broadcast AM, SSB
	314D	1kw	535-1605 kc	Broadcast AM, SSB
HF	621A	600kw	4-30 Mc	Communications CW, FSK, SSB
	420A	500kw	4-27 Mc	SW Broadcast AM, SSB
	419A	250kw	4-27 Mc	SW Broadcast AM, SSB
	418A	100kw	3-30 Mc	SW Broadcast AM, SSB
	417B	50kw	3-30 Mc	SW Broadcast AM, SSB
	416B	10kw	3-30 Mc	SW Broadcast AM, SSB
	415B	5kw	3-30 Mc	SW Broadcast AM, SSB
	414D	1kw	4-22 Mc	SW Broadcast AM, SSB
VHF	PO-830A	10,000kw	40-42 Mc	Radar
	PO-828A	5,000kw	200 Mc	Linear Accelerator Pulsed Power
	821A	600kw	30-65 Mc	Communications CW, FSK, SSB
	820A	500kw	30-45 Mc	Communications CW, FSK, FM
	818A	100kw	30-65 Mc	Communications CW, FSK, SSB
	817A	32kw	30-65 Mc	Communications CW, FSK, SSB
	816A	10kw	35-60 Mc	Airborne Communication CW
	814B	3kw	30-50 Mc	Communications CW, SSB, FSK
	814A	1kw	20-65 Mc	Communications CW, SSB, FSK
UHF	PO-730	10,000kw	400-500 Mc	Radar
	PO-728	5,000kw	400-500 Mc	Radar
	PO-725	2,500kw	400-500 Mc	Radar
	718A	100kw	400-500 Mc	Communications CW, FSK
	714	1kw	470-890 Mc	TV FM AM
	712	250 w	470-890 Mc	TV FM AM
SHF	CE-900	150mw	5900-7425 Mc	Communications Multi-Channel FM

PLEASE FURNISH ADDITIONAL INFORMATION ON THE ITEMS CHECKED.

SHORT WAVE TRANSMITTERS
☐ 50 kw ☐ 5/10 kw ☐ 1 kw

MEDIUM WAVE TRANSMITTERS
☐ 50 kw ☐ 5/10 kw ☐ 1 kw

SUPER POWER TRANSMITTERS
☐ 1,000 kw ☐ 500 kw ☐ 250 kw

☐ SPECIAL EQUIPMENT (SPECIFY) _____

NAME _____

COMPANY _____

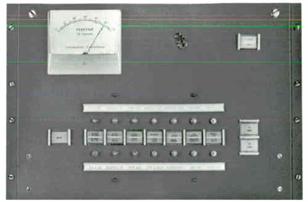
ADDRESS _____

Would you like more information concerning our broadcast transmitting equipment? Simply fill out the attached self-addressed and stamped card; it's ready to mail.

TYPE TRC-3
TRANSMITTER REMOTE CONTROL

Type TRC-S Studio Terminal

Human engineered for simplified, reliable control by the busy studio operator, Continental's Transmitter Remote Control system has color-illuminated push buttons individually designated for each function. It offers simplified monitoring and logging by use of a single meter which reads in "Percent of Normal." Using direct all-relay control, Continental's Type TRC-3 has no dials, stepping relays, tone



Type TRC-T Transmitter Terminal

channels, or marginal relays. Fail-safe circuitry is used throughout, and the system meets all FCC requirements for unattended operation. Continental's Type TRC-3 Transmitter Remote Control System has been specified by major networks and the majority of unattended 50kw stations in the U. S.

special equipment

TYPE MR1C MONITOR RECEIVER

Continental's Monitor Receiver is a high-quality, fixed-tuned TRF unit used for monitoring transmitter operation at the studio location. Off-the-air signals are picked up by a shielded loop antenna, amplified by the receiver, and fed to the station's modulation and frequency monitors. A warning lamp and buzzer provides an indication of presence of carrier, and an alarm on loss of carrier.

TYPE TRC-FA3 FAULT ALARM SYSTEM

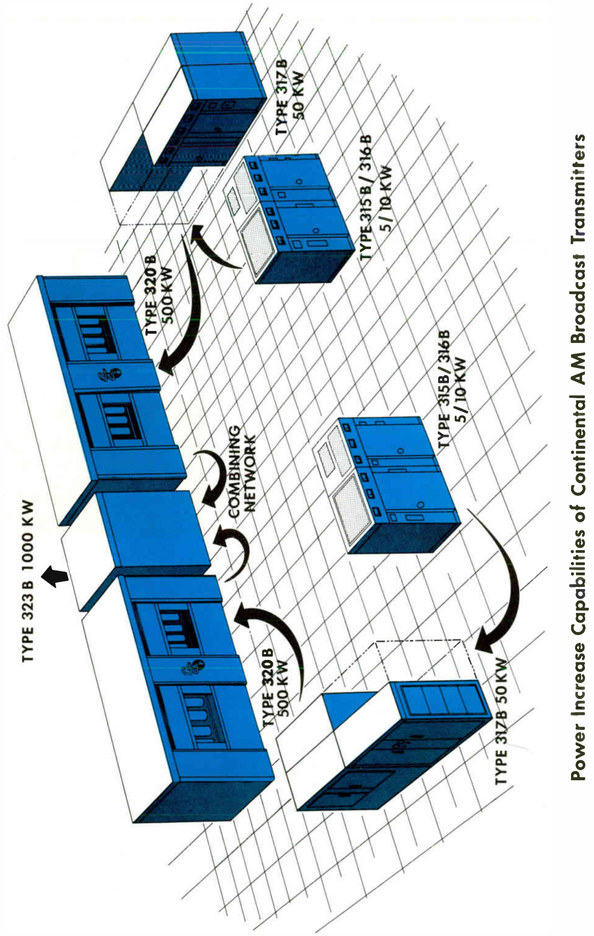
Type TRC-FA3-S Studio Terminal

Continental's Fault Alarm System is a monitoring device for use at unattended transmitting stations. It automatically provides remote alarm and indication in the event of a change of status in any one of 10 or 15 monitored conditions.
Any function such as fire, building entry, heating system failure, etc., which can be reduced to a normally-closed circuit in its normal conditions,

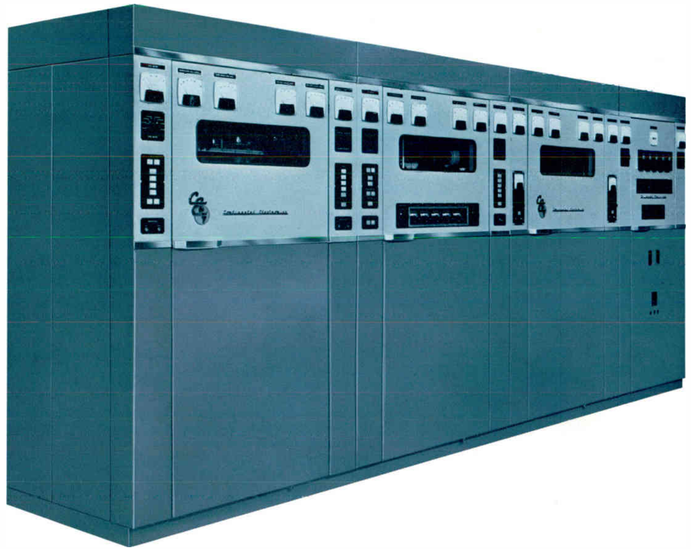
Type TRC-FA3-T Transmitter Terminal

may be presented as a fault indication at the studio.

Through the use of contact-making meters installed at the transmitter location, circuits can be established for above and below normal values of critical transmitter parameters. When assigned to inputs on the Fault Alarm System, this arrangement becomes a type of automatic logging if used with inexpensive recorders installed at the transmitter.



Power Increase Capabilities of Continental AM Broadcast Transmitters



Type 417B 50,000 watt AM short wave transmitter

Continental's Type 417B 50,000 watt short wave transmitter is designed for operation in the International short wave broadcast band, and for communication service with frequency shift keying. Frequency change to any frequency within its specified range of 3 to 30 megacycles can be accomplished in approximately three minutes for change within the same band, and approximately five minutes for band switching using plug in coils in the final amplifier, with ten minutes for final adjustment.

Utilizing high-level plate modulation, the Type 417B is designed as two separate units: the audio modulator system, and a complete radio frequency system which may also be operated as a FSK communication transmitter. The Type 417B uses light weight, low cost, field-proven power tubes which operate at 50% or less of their maximum ratings for economy and reliability.

Silicon rectifiers are used in all power supplies, eliminating warm up time and improving transmitter operation in areas of temperature extremes.

Also available are 25,000 watt and 100,000 watt short wave broadcast transmitters.

Type 415B/416B 5,000/10,000 watt AM short wave transmitter

Continental's Type 415B/416B 5,000/10,000 watt short wave transmitter is designed for operation in the International short wave broadcast band. It utilizes Continental's field-proven screen modulation system which makes possible an excellent degree of performance while maintaining high overall efficiency.
Frequency change within the specified range of 3 to 30 megacycles is accomplished through use of plug-in coils in the final amplifier. These transmitters are also available for continuous coverage operation.
The Type 415B/416B are identical with the exception of an additional power amplifier tube and its associated filament and plate transformer used in the Type 416B 10,000 watt transmitter.
Silicon rectifiers are used in the HV power supply for maximum reliability and minimum maintenance.

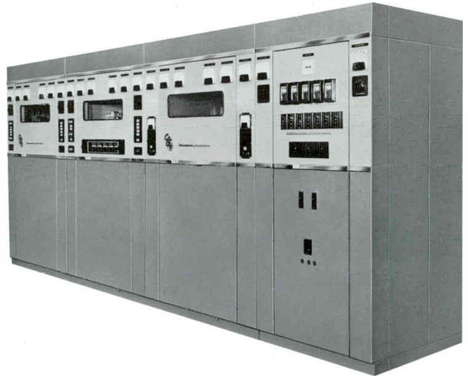
Type 414D 1,000 watt AM short wave transmitter

Continental's Type 414D 1,000 watt short wave broadcast transmitter is designed for operation in the International short wave broadcast band. It utilizes Continental's field-proven screen modulation system which makes possible an excellent degree of performance while maintaining high overall efficiency. Frequency change within the specified range of 4-22 megacycles is accomplished by using plug-in coils in the final amplifier. The Type 414D is also available for continuous coverage operation.

Type 414D 1,000 watt
AM short wave transmitter

Type 415B/416B 5,000/10,000 watt
AM short wave transmitter

short wave



Type 417B 50,000 watt AM short wave transmitter

Type 315B/316B
5,000/10,000 Watt
AM Transmitter

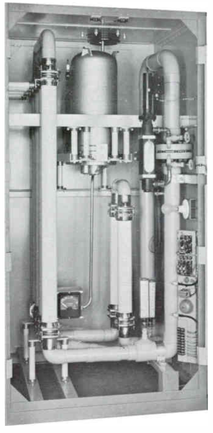
Continental's Type 315B/316B medium wave AM broadcast transmitters utilize high-level screen modulation of the RF power amplifier, making possible an excellent degree of performance. Modulation of final amplifiers is accomplished by Continental's Regulinear* cathode-follower screen modulation circuit. This exclusive feature eliminates iron-core transformers from any stage of the modulation system. Unusually low values of distortion are obtained, at the same time maintaining high overall efficiency.

*Pat. No. 2,918,631

The 5,000 watt 315B and the 10,000 watt 316B Transmitters are essentially identical, mechanically and electrically. The 315B can be converted to 10,000 watts in one maintenance night, with the addition of one final amplifier tube and its associated filament and plate transformer used in the 316B. Dry rectifiers are used in all power supplies, and the HV rectifier uses a silicon power supply for minimum warmup time. The 315B/316B may be factory equipped for instantaneous power cut-back to 1,000 or 5,000 watts.

Type 314D 1,000 Watt AM Transmitter

Continental's Type 314 D 1,000 watt medium wave AM broadcast transmitter utilizes Continental's field-proven screen modulation and does not have a modulation transformer. Cabinet design provides maximum accessibility with front and rear doors. RF components are completely shielded in an aluminum enclosure. An optional feature provides power cut-back to 500 or 250 watts. All low-level stages are mounted on pull-out chassis, and may be serviced in transmitter. Tuning and loading controls are mounted externally, with separate adjustment of output power. The 314D has a built-in phantom antenna.



Continental Type 520B 500kw
Medium Wave Water Cooled Dummy Load.

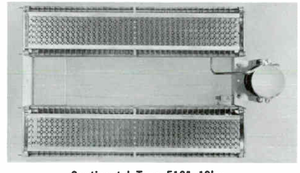
DUMMY LOADS

Continental manufactures broadcast transmitter dummy loads that are designed and engineered to dissipate any power level and frequency range. Typical dummy loads are shown below.

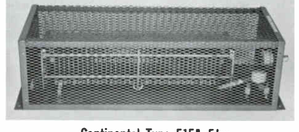
Continental Type 519A
300kw Short Wave
Water Cooled Dummy Load. →

Continental Type 517C 50kw
Medium Wave Air Cooled Dummy Load.

← Continental Type 517B 50kw
Medium Wave Water Cooled Dummy Load.
(cover removed)



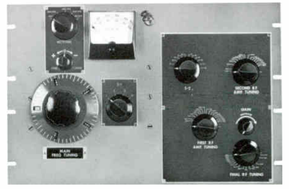
Continental Type 516A 10kw
Medium Wave Air Cooled Dummy Load.
(without enclosure)



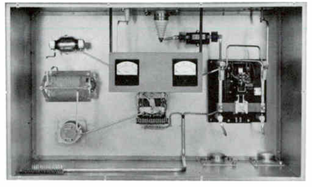
Continental Type 515A 5kw
Medium Wave Air Cooled Dummy Load.

CUSTOM EQUIPMENT

Continental designs and manufactures broadcast equipment to meet specific customer requirements.



Variable Frequency Oscillator
For MF Broadcast Transmitter



Antenna Switching Cabinet
and Conelrad Network

Transmitter Console Control Panel

MAGNIPHASE LINE PROTECTION SYSTEM

Originally developed for Continental's super power transmitters, Magniphase is an electronic device used to protect the antenna system from damage due to arcing. Whether an arc is caused by static discharge or a line fault, the Magniphase system will instantaneously squelch the transmitter output. This prevents the arc from being sustained by RF energy. Immediately self-restoring, the transmitter interruption is unnoticed on the air.

5/10kw Line Coupler

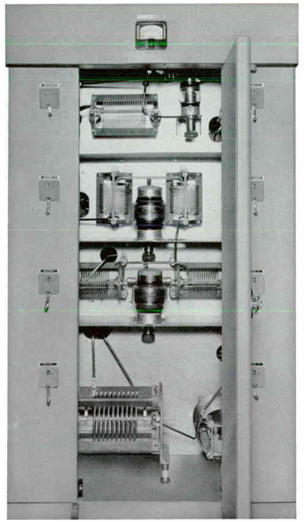
50kw Line Coupler

Since its founding more than 15 years ago, Continental Electronics has specialized in the design, development, and manufacture of super power transmitting equipment.

Continental designed and built the first super power transmitters for the Voice of America. Three of these 1,000,000 watt broadcast transmitters have been in continuous operation for more than eight years.

The output power of the AM broadcast transmitters manufactured by Continental Electronics within the past ten years is greater than the total combined power of all the AM broadcast stations in the United States.

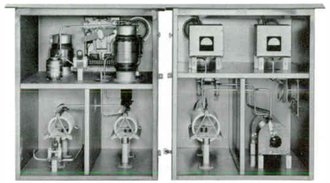
super power

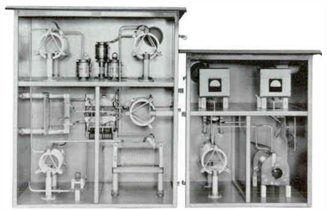


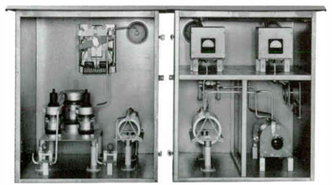
Typical Phasor in Matching Cabinet

PHASING AND COUPLING EQUIPMENT

Continental's phasing and coupling equipment for directional antenna systems is custom designed and manufactured for all power levels to meet specific customer requirements. Each installation is engineered to provide easily adjustable networks, highest stability, and adequate voltage and safety factors with a minimum of maintenance and adjustment.







Typical Antenna Coupling Equipment with Filter Networks

Type 317B 50,000 Watt AM Transmitter

Continental's Type 317B Transmitter is a medium wave broadcast transmitter with a power output of 50,000 watts. High-level screen modulation of the 5,000 watt RF driver stage makes possible its excellent performance. The 50,000 watt amplifier is a high efficiency linear stage using the "Weldon Grounded Grid"* circuit. The advantages of this circuit include high overall efficiency, extreme stability, and the absence of critical neutralizing and tuning adjustments. Compactness and accessibility coupled with ease of installation are features of the Type 317B Transmitter, which requires only 72 square feet of floor space. Silicon rectifiers are used in the HV power supply, and selenium types are used in the bias and low voltage circuits. All transformers and rectifiers are housed within the equipment cabinet.

Either the Type 315B 5kw or the Type 316B 10kw transmitter may be used without major changes of circuitry as the 317B driver stage. The control circuits are integrated with those of the 50kw amplifier, and provision is made for instantaneous cutback to the driver stage with operation completely independent of the 50kw final and its associated auxiliaries. The cutback is an optional feature designed for those stations needing reduced power for nighttime operation, or desiring this feature for emergency protection.

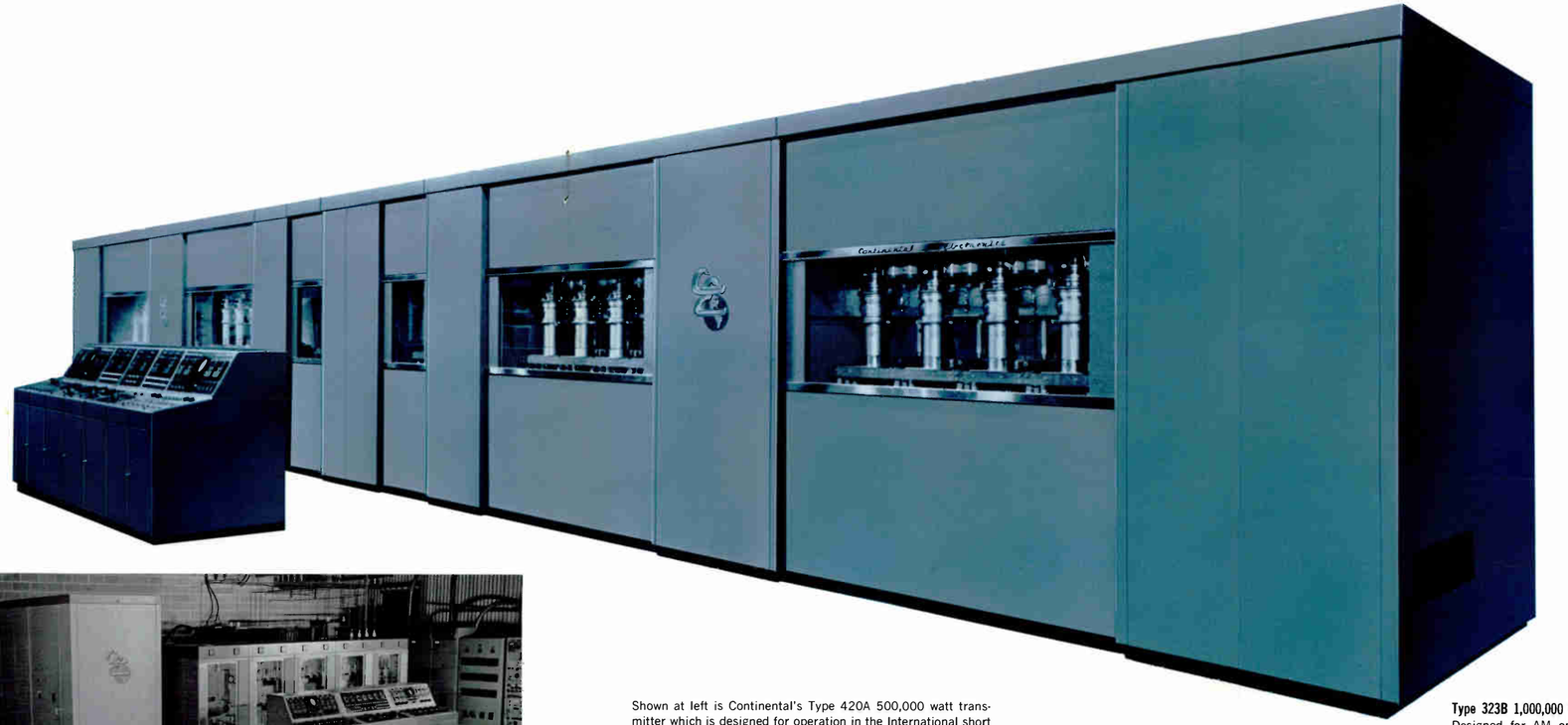
*Pat. No. 2,836,665

Type 315B/316B 5,000/10,000 Watt AM Transmitter

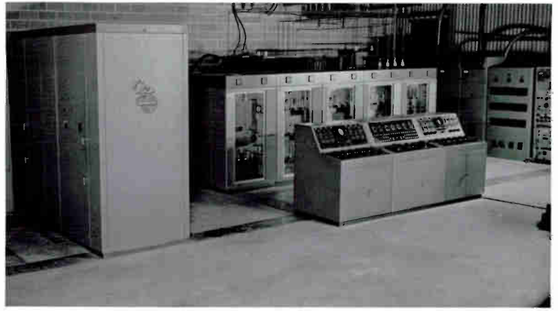
Type 314D 1,000 Watt AM Transmitter

medium wave

Type 317B 50,000 Watt AM Transmitter



This million-watt transmitter consists of two independent 500,000 watt transmitters which are combined through a network to deliver one million watts of continuous carrier power into a single antenna system. These were the first super power transmitters built for the Voice of America. Designed, developed and built by Continental Electronics, they were installed at Munich, Okinawa, and Manila in 1953.



Shown at left is Continental's Type 420A 500,000 watt transmitter which is designed for operation in the International short wave broadcast band. It consists of two Continental Type 419A 250,000 watt transmitters which are combined to provide 500,000 watts of fully modulated output power. Six of these transmitters are used in the United States Information Agency's Consolidated East Coast Facilities for the Volce of America near Greenville, North Carolina. It is possible to combine two Type 420A 500,000 watt transmitters as Continental's Type 423A 1,000,000 watt AM short wave broadcast transmitter.

Type 323B 1,000,000 Watt AM Transmitter

Designed for AM operation in the standard broadcast band, Continental's Type 323B has a power output of 1,000,000 watts which can be fully modulated. The transmitter consists of two Continental Type 320B 500,000 watt transmitters which are combined to provide a power output of 1,000,000 watts. Continental's Type 317B 50,000 watt transmitter is the driver stage for the Type 320B, and Continental's Type 315B 5,000 watt transmitter is the driver stage for the Type 317B. It would be feasible to begin initially with Continental's Type 315B 5,000 watt AM transmitter and eventually have the Type 323B 1,000,000 watt AM transmitter simply by adding the various power groups. Continental also manufactures the Type 223B 1,000,000 watt transmitter for Low Frequency operation.