

SPECIFICATIONS

Carrier Power:
Rated 50 kW
Capability 60 kW
Power Reduction 25 kW or 10 kW

Modulation:
High-level screen-grid/impedance modulation

Emission:
A3

Frequency Range:
Any single frequency 535-1620 kHz

Frequency stability:
±5 Hz

Audio input:
150/600 ohms, +10 dbm, ± 2 db for 100% modulation

Audio response:
50-7500 Hz ±1.0 db
30-10,000 Hz ±1.5 db

Audio distortion:
50-10,000 Hz, less than 3% at 95% modulation

Carrier Shift:
2% or less at 100% modulation

Modulation capability:
100% continuous at any frequency 50-10,000 Hz
125% positive peak with asymmetrical input

Noise unweighted:
-60db at 100% modulation

Spurious & harmonic emissions:
-80db

Output impedance:
40 to 300 ohms as specified by customer

Power source:
460V, 3 phase, 50/60 Hz, other available by special order

Permissible combined voltage variation:

±5% voltage
±2.5% frequency

Power factor:
.9

Power consumption:
82 kW @ 0% modulation
92 kW @ 30% modulation
120 kW @ 100% modulation

Altitude:
7500 feet (2286 meters) higher by special order

Ambient temperature:
-4° to 122°F (-20° to 50°C)

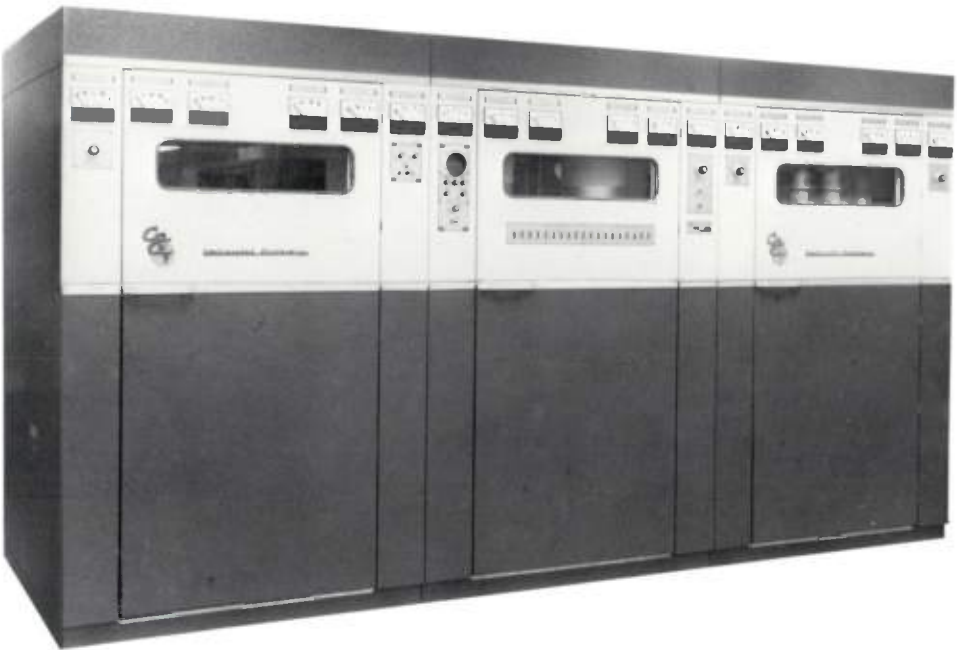
Cooling:
transmitter is air cooled

Size:
transmitter is 144" wide, 54" deep, 78" high (365.76 CM wide, 137.16 CM deep, 198.1 CM high); plate transformer is 24" wide, 46" deep, 67" high (60.96 CM wide, 116.84 CM deep, 170.18 CM high)

Floor space:
62 sq. ft. (5.8 sq. meters)

Net weight:
transmitter (total, all cabinets) weighs 5,011 lbs. (2,273 kilos); plate transformer weighs 1,600 lbs. (727 kilos)

Export shipping:
gross weight 9,700 lbs. (4,400 kilos); 800 cubic feet (22.65 cubic meters)



Continental Electronics

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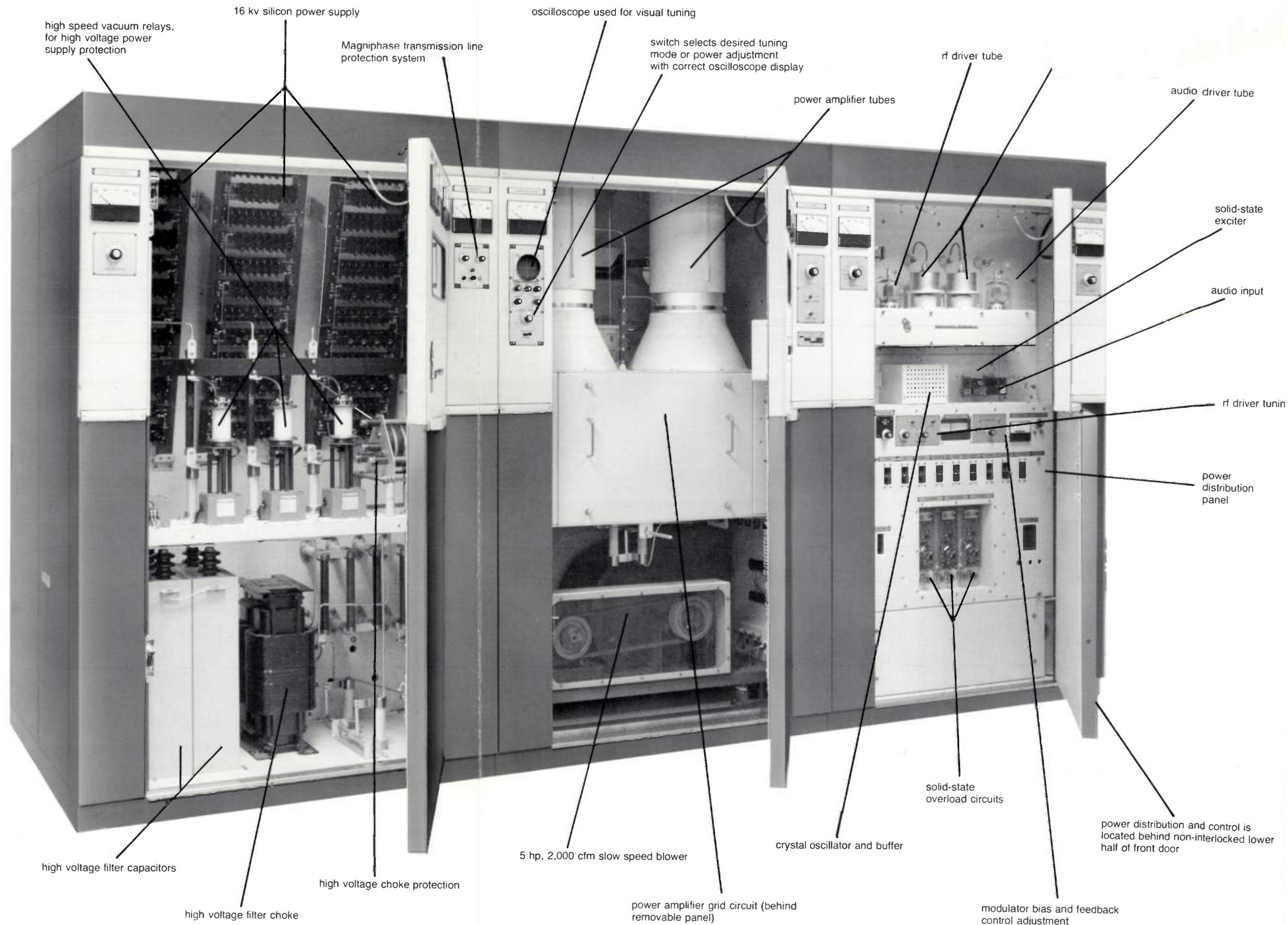


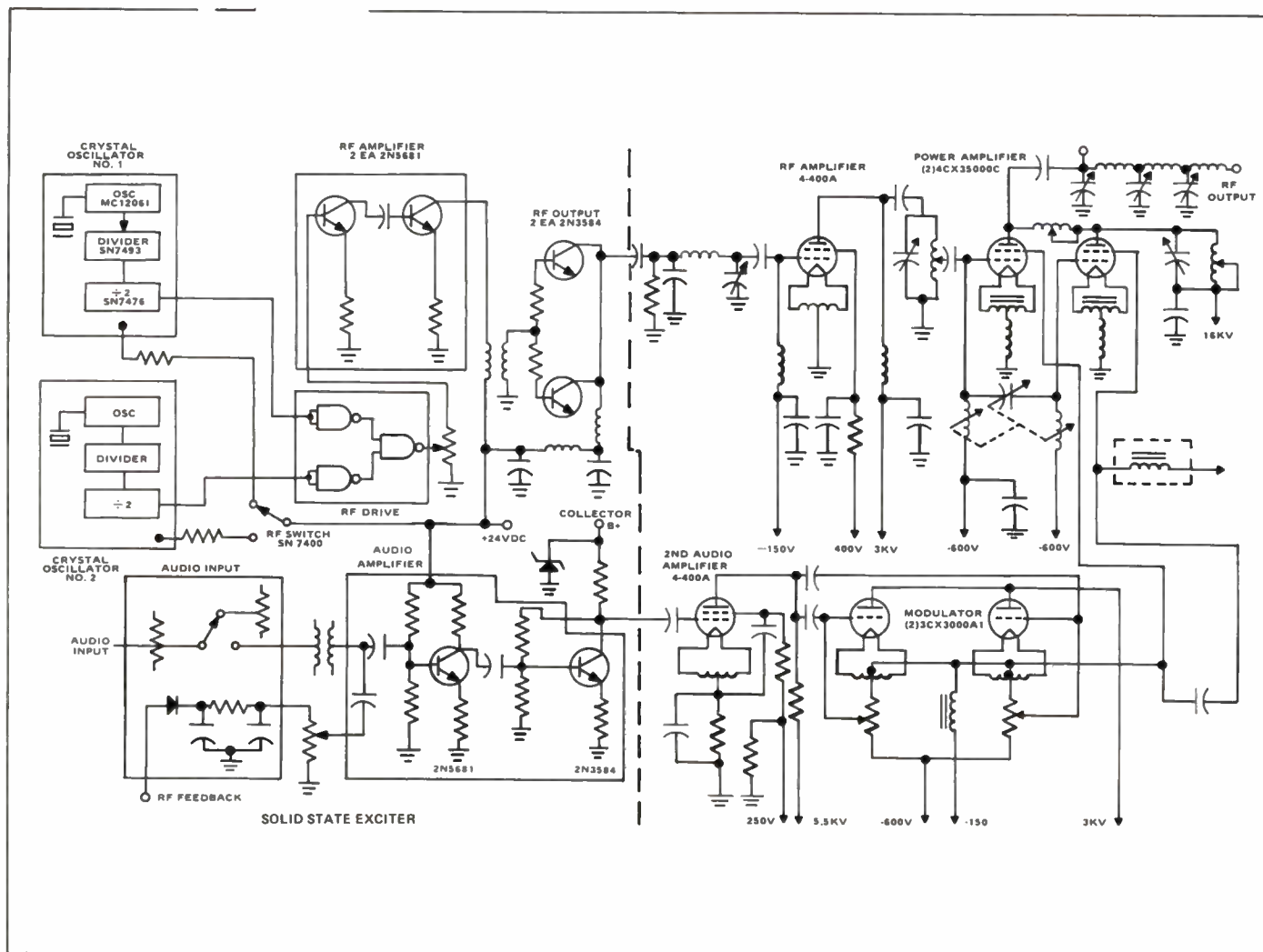
**CONTINENTAL
50,000 WATT
AM BROADCAST
TRANSMITTER**



QUALITY TALKS

- **High Efficiency**
Better than 60% overall efficiency.
- **No Modulation Transformer**
Screen modulation combined with impedance variation modulation gives efficient operation without excessive high-voltage.
- **High Reliability**
Quality workmanship, conservative design.
- **Customer Acceptance**
More in use than any other single design.
- **Excellent Performance**
Exceeds all FCC and CCIR specifications.
- **Loud Sound**
125% positive peak handling capability of asymmetrical audio processing.
- **Long Tube Life**
More than 40,000 hours for 4CX35000C PA tubes, typical for 317C transmitter.
- **No X-Ray Radiation Hazards**
Better than minimum OSHA-AEC Regulations — no monitoring or labeling required.
- **Simplicity — No Complex Circuitry**
Ease of installation, operation and maintenance.
- **Small Size and Weight**
Economical to ship and install. Minimum facility requirements.
- **Magniphase**
Provides transmission line, antenna, and tuning equipment protection.
- **Ease of Operation**
Motor driven tuning and power adjust. Designed for unattended operation by remote control. Complete instrumentation and maximum personnel protection.

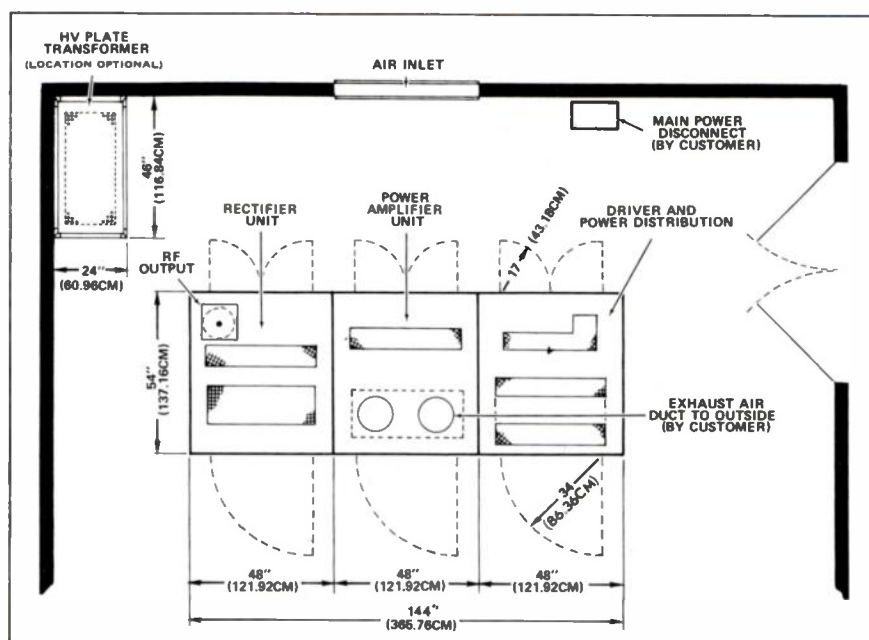




SIMPLIFIED SCHEMATIC

FLOOR PLAN

Continental's Type 317C-1 is all self-contained except for the plate transformer which is in a separate enclosure. A 5 hp. 2,000 cfm blower housed inside the transmitter cabinet provides cooling; and at a low noise level. Wide doors give easy access to all cabinets, with walk-in access to the driver and power distribution cabinet.



QUALITY DESIGN PUTS CONTINENTAL FIRST

Recognizing the limitations of performance and operation of heavy audio iron core components in AM transmitters, Continental's original 50 kW design eliminated these modulation components in 1946, and competitive transmitter designs did not achieve this until 15-20 years later.

Continuing to improve its product design, Continental was the first to supply silicon solid state rectifiers in the high voltage power supply of a 50 kW AM transmitter.

With availability of high power tetrode tubes, Continental was able to improve its original design concept and offer a 50 kW transmitter that achieved greater than 60% overall efficiency 8-10 years ahead of competitive designs.

Truly the 317C is a transmitter design ahead of its time, offering proven performance, reliability and simplicity that other designs are only beginning to approach.

QUALITY MODULATION

Screen modulation of modern tetrode tubes combined with impedance variation modulation achieves lowest distortion with highest efficiency.

High-level screen modulation requires only power to swing the screen voltage loaded only by the screen current. The power required by the modulator is very small, which adds to the overall efficiency of the transmitter and is adaptable for overall feedback, resulting in greater stability and further reduction of noise and distortion.

Continental Electronics holds patents for the "High Efficiency Screen Modulated Amplifier". U.S. 3,314,024; Canada 764,605, Great Britain 1,044,479; France 1,432,543.

QUALITY SOUND WITH SIMPLE CIRCUITRY

The final, or modulated amplifier, consists of two type 4CX35000C ceramic tetrodes. One tube generates the "carrier" power. The other tube supplies the required additional energy during positive modulation "peaks". Both tubes have high control grid bias and saturation drive, typical of Class C operation. A nominal positive voltage is applied to the

screen of the carrier tube and a small negative voltage to the screen of the peak tube. Modulation is applied to the screens of both tubes. During the negative half cycle the "peak" tube remains cut off, and the output of the "carrier" tube follows linearly the audio signal applied to its screen. During the positive half cycle the screen of the "peak" tube swings in a positive direction so that its output increases according to the signal applied. At the 100% level both tubes are contributing equally to the power output. An impedance inverting network varies the load to the tubes during modulation to provide high efficiency without high voltage.

With the inherent design quality of this modulating technique, positive peaks above 100% are readily achieved with asymmetrical audio-inputs. The separate carrier tube provides stable carrier level with heavy modulation for minimum carrier shift. The plate voltage swing does not increase with positive modulation. At 16 kvdc, the power amplifier achieves a plate efficiency of 80% or higher. Screen-grid modulation isolates the modulation source from the rf driving source. The driving power required for the two final amplifier tubes is only a few hundred watts.

Another factor contributing to high efficiency is the greatly reduced cooling requirement. Since there is very little heat to be removed, the 317C is cooled by a single 5 hp blower housed within the transmitter cabinets.

