

"G_m 4200 . . . C_{gp} 4.5"

THIS NEW AMPEREX HF 100

delivers REAL POWER OUTPUT
down to 2 Meters



\$10

It is a PRACTICAL tube . . . Patterned after the Amperex HF 200 and HF 300, it takes its place as a leader in the ultra-high frequency field. The extraordinary performances of the HF 100 is due largely to the fact that it also possesses the HIGHEST RATIO OF TRANSCONDUCTANCE TO INTER-ELECTRODE CAPACITANCE.

CHARACTERISTICS

Filament: Voltage 10 Volts
Current 2 Amps.
Amplification Factor 23
Grid to Plate Transconductance at 100 ma, 4200
Direct Interelectrode Capacitances
Grid to Plate 4.5 μf
Grid to Filament 3.5 μf
Plate to Filament 1.4 μf

DIMENSIONS

Height overall . . . 7 1/2 inches
Bulb diameter . . . 2 1/16 inches
Base Standard UX-4 — Prong for filament connections only.
Plate Terminal . . Heat Radiating top cap Diameter .500 inches
Grid Terminal . . Side cap diameter .500 inches

MAXIMUM RATINGS

For operation at:	30 mc or lower	60-75 mc	120 mc
Plate Dissipation	75 Watts	60 Watts	50 Watts
D.C. Plate Voltage	1500 Volts	1200 Volts	1000 Volts
Modulated D.C. Plate Voltage	1250 Volts	1000 Volts	800 Volts
A.C. Plate Voltage	1500 Volts	1500 Volts	1250 Volts
D.C. Plate Current	150 Ma.	130 Ma.	120 Ma.
D.C. Grid Current	30 Ma.	30 Ma.	20 Ma.
Max. D.C. Grid Bias			
Voltage for Class C operation	300 Volts	225 Volts	150 Volts
Max. attainable Plate Power out-put	170 Watts	100 Watts	60 Watts

In June, the Bowdoin-Kent's Island Expedition sailed from Lubec, Maine for a scientific research program in the Bay of Fundy, under the auspices of Bowdoin College. They are based at their scientific station on Kent's Island, N. B., Canada where their main ultra high frequency station is using a high power concentric grid oscillator employing the Amperex HF 300. Thomas O. D. Gross is chief radio operator.

On July 24th, W2HBO picked up this message from their station, VE1N:

"We have been using Amperex HF 300 and 203 H tubes for some time on heavy loads and have had perfect performance. We are particularly impressed with the ease of excitation and ruggedness of these tubes."

On August 11th, W3BWT, a member of the Army Amateur Radio System, received this:

"We are even more enthusiastic about the HF 300 than when we spoke on July twenty-four . . ."

AMPEREX

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departments through the Interdepartment Radio Advisory Committee, and finally report to the Department of State. Thus the final decision is to be made by the government itself, dissociated from the commercial companies of the country. The League's dissenting report is now before them for this purpose, and we have also brought the matter formally to their attention. The Commission informs us that, in its examination, consideration will also be given to the evidence presented by us at the informal hearing before the Commission on June 15th. So we are QRX now, awaiting the final word.

Crystal Filter and Noise Silencer

(Continued from page 30)

pitch. Tune the main dial to the same pitch on the other side of zero beat, without touching anything else. This "other side" will be quite weak compared to the right setting. Now vary C_2 slowly until the beat note disappears, or reaches a very low minimum. This process eliminates the audio-frequency image and is an important setting in obtaining maximum selectivity. The selectivity can be further increased by tuning C_1 down in capacity from the resonance setting; maximum selectivity will be found with C_1 considerably on the high-frequency side of i.f. resonance. At maximum selectivity (C_1 all out) some decrease in signal strength results, although when the going is really tough the decrease is unimportant compared with the possibility of pulling the signal out of QRM. Should a strong interfering signal still cause trouble, it can often be pushed out of the picture by careful adjustment of C_2 , which moves the point of maximum rejection over a small frequency range. For tuning across the band, and for most communication, the selectivity will be sufficient with C_1 set for optimum selectivity — at or slightly higher than resonance — and with C_2 set for rejection of the a.f. image.

The operation of the noise silencer with a crystal filter already has been described.² The action of the silencer in taking out strong noise peaks of the auto-ignition type, plus the selectivity of the crystal in reducing noise of the more "solid" type, makes it possible to copy weak signals through a noise background which completely masks them with the ordinary superhet arrangement. In c.w. reception, it may be necessary to adjust R_3 occasionally to prevent a strong signal from blocking off the i.f. An extremely strong local signal may require opening Sw_2 to prevent blocking. On 'phone, the a.v.c. will hold it pretty well in line, although very strong carriers may make it necessary to back off on the threshold control. Since the selectivity is not great at the point where the noise amplifier gets its signal, a strong interfering signal near the desired one sometimes will cause blocking, mak-