



# M.F Broadcasting Transmitter (1 kW) Type B 6023

THE B 6023 is a very inexpensive transmitter specifically designed for the low-budget operator. No unnecessary circuitry has been introduced into this equipment, the object being to make available a simple, very reliable, a.m. transmitter capable of high-quality transmission. This is one of the few transmitters of this power in the world to utilize solid-state techniques to such an extent that only one valve is required and that in the output stage.

## Features

- Only one valve used.
- All other circuits fully transistorized.
- Cabinet occupies floor space of only 30 inches (76 cm) square.
- Front access only required. Equipment can stand against wall or even in corner of building.
- Power supplies use silicon rectifiers.
- All dangerous voltages protected by interlocks for personnel safety. Earthing switch has visible contacts.
- Unattended operation requires single-contact switching only. Three-shot overload system and mains failure restoration guard against transient fault conditions.
- No bias or screen supplies required for final amplifier thus improving reliability.
- No modulation transformer.
- No moving coil contacts.

## CONSTRUCTION

The transmitter is housed in a single cabinet, 85 in.  $\times$  30 in.  $\times$  30 in. (216 cm  $\times$  76 cm  $\times$  76 cm) in dimensions, which contains the power supplies at the base, a removable drive and modulator unit, cooling fan, r.f. amplifier and mains isolator.

All external connections are made at the top, access for maintenance is entirely from the front. The air intake is at the front and outlet at the top. As a result, the equipment can stand against a wall or even in a corner.

The equipment is fully interlocked for personnel safety.

## CIRCUIT

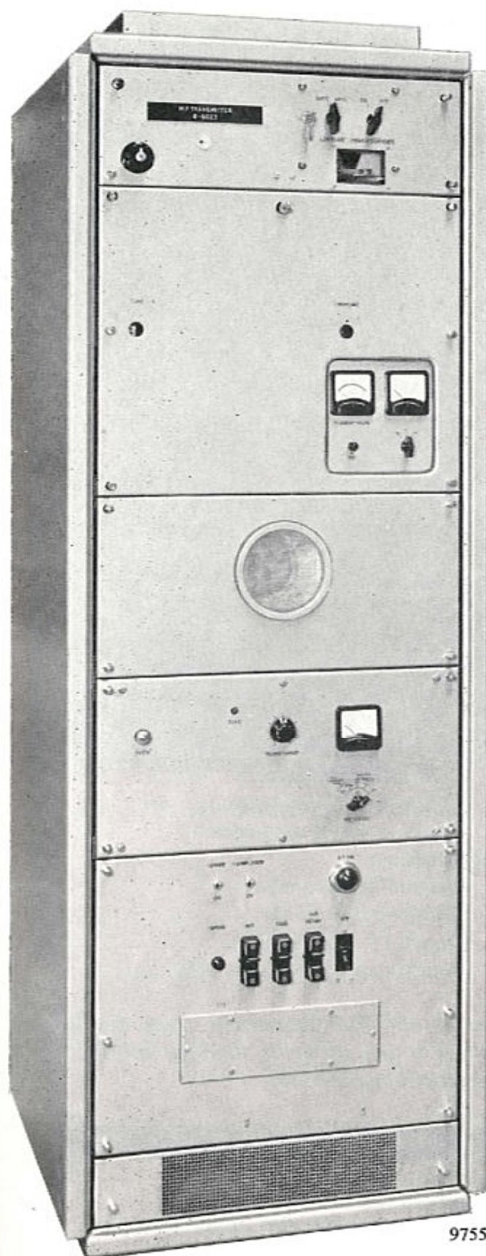
Basically, the equipment consists of a single triode power amplifier driven by a transistorized drive and modulator unit.

The drive contains a single, ovened, high-stability crystal oscillator and the associated transistorized circuitry incorporates self-protective features making transistor overloading virtually impossible. A sub-modulator modulates the two final transistor amplifiers, the last of which operates in a circuit employing the patented Marconi high-efficiency circuit and delivers modulated r.f. power to the triode power amplifier.

The triode power amplifier operates with a zero bias and requiring no screen supply, thus increases the reliability of the transmitter. The output circuit is a  $\pi$  network giving minimum harmonic and spurious radiation.

## Data Summary

- Power output:** 1 kW carrier, at nominal mains voltage.
  - Frequency range:** 525 to 1605 kc/s.
  - Frequency stability:**  $\pm 10$  c/s.
  - Modulation:** Low level.
  - Modulation rating:** 100% continuously.
  - Output impedance:** 50  $\Omega$  nominal, with max. v.s.w.r. of 1.4:1.
  - A.F. response:**  $\pm 1.5$  dB from 30 c/s to 10 kc/s.
  - A.F. input level:** 1 mW into 600  $\Omega$  for 100% modulation.
  - Noise level:** -54 dB, unweighted, relative to 100% modulation.
  - Maximum ambient temperature:** +45°C.
  - Power supplies:** 200-250 V  $\pm 5\%$  50 c/s (or 60 c/s to order)  $\pm 2\%$  a.c. single phase.
  - Power consumption:** 4.4 kW at 100% modulation, 0.9 power factor.
  - Dimensions:**
- | Height                 | Width                 | Depth                 | Weight (approx.)    |
|------------------------|-----------------------|-----------------------|---------------------|
| 7 ft 1 in.<br>(216 cm) | 2 ft 6 in.<br>(76 cm) | 2 ft 6 in.<br>(76 cm) | 1000 lb<br>(455 kg) |



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