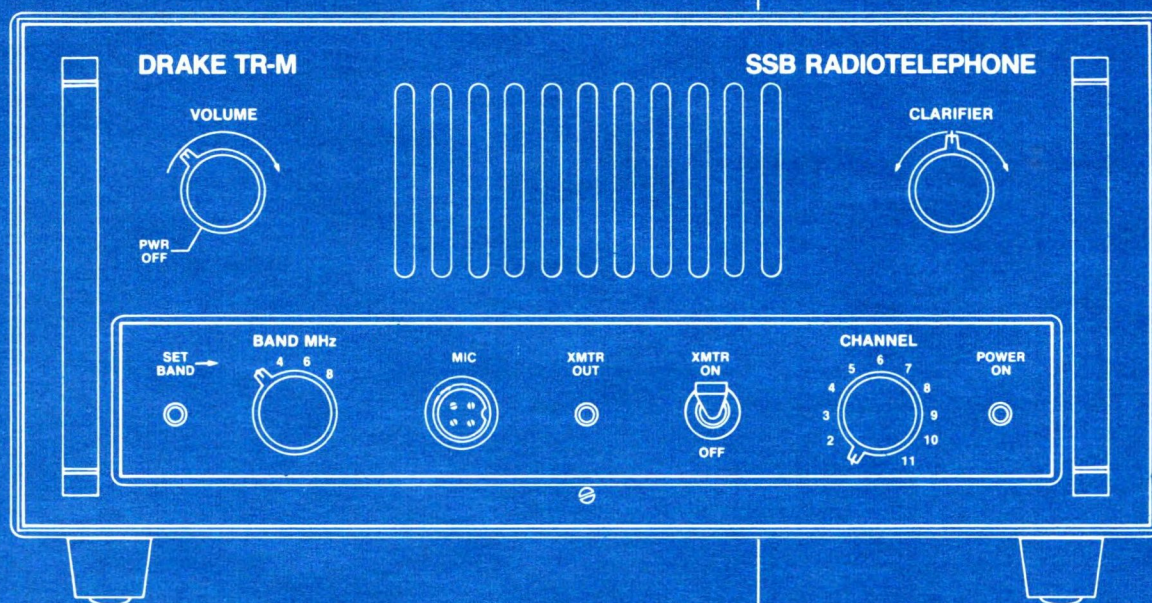




TR-M

**single sideband
radiotelephone**



150 watts PEP OUT

- Low cost
- Simple to operate
- Built in power supply
- Built in antenna coupler
- Environmental protection
- 11 programmable channels



TR-M

single sideband radiotelephone

THE USER ENJOYS:

Ease of Operation

The TR-M Radiotelephone requires a minimum of adjustment time prior to use. Just set two knobs (Band and Channel selectors) depress the push-to-talk switch on the microphone, and you're on the air. Interlock circuitry is built-in to prevent improper operation.

Low Cost

You profit from the *built-in* features of the TR-M. These include an antenna coupler, tuneable to suit marine antennas, a reliable power supply, your choice of 12 or 32 V-dc and a versatile mounting bracket.

Higher Power

The 150 watts PEP output available with the TR-M provides all the output power that the law allows. Transmitting "Automatic Gain Control" maintains full output even with lowered supply voltage or low audio and prevents overmodulation.

Built-in Antenna Coupler

This feature will match marine antennas such as 23-foot whips above 4 MHz and 35-foot whips and long wires up to 75 feet. In addition, it will match any 50-ohm antenna.

Antenna Mismatch Protection

Additional protection circuitry prevents damage to the power output stage in the event of an antenna mismatch.

Low Power Consumption

A front panel toggle switch turns off the transmitter filaments for reduced power consumption on receive. Switched on, the transmitter is ready in a matter of seconds. A front panel rf output lamp serves as an indicator that the transmitter is putting out rf power.

Ssb and True A-m Modes on Receive

The TR-M is easily programmed by the dealer to provide operation on ssb (A3A, A3J, A3H). A3H programming provides compatible operation with a-m transceivers.

Environmental Protection

Environmental protection of the TR-M was built-in as a design feature. It has gold plated switches, an iridited aluminum chassis, epoxy paint and all printed circuit assemblies are built on fiber glass filled epoxy boards and coated for maximum protection.

Reliability

All solid state construction except the final output stage (2 tubes).

Versatility

Factory outfitted for Distress and Calling frequency: Transmit and Receive on 2182 kHz. Ten additional channels are optional. They may be programmed for any mode: A3A, A3J and A3H and set to any frequency in the range of 2 to 2.9 MHz, 3.75 to 5.0 MHz and 6 to 9 MHz.

TR-M Avoids Obsolescence

An old a-m radiotelephone can be replaced with a TR-M, use the same frequencies with the new compatible a-m and have a sideband power (modulation) the same as one sideband provided with 150 watts old a-m carrier. Excellent a-m performance for now and be ready for much more effective ssb when needed. New channels can be added easily with crystals only—no strips—no tuning except crystal and antenna.

THE DEALER'S ADVANTAGES ARE:

Simple Crystal Installation

Simply insert the proper crystals in the easily accessible crystal sockets and adjust the associated trimming capacitors to set the crystals on frequency. That's all. No other tuning and no soldering required.

Simple Programming

Programming the TR-M is simple. Insert screws in the program matrix board for any mode: A3A, A3J and A3H, on any of 11 channels. No soldering required.

Ease of Installation

The built-in antenna coupler will match marine antennas such as 23-foot whips (above 4 MHz) or 35-foot whips, long wires up to 75 feet long, as well as 50-ohm antennas and loaded whips. Separate antennas can be used for mf and hf. The coupler is easily tuned by selecting coil taps and adjusting the trimming capacitors using test jacks located on the

rear panel (the reflected power meter element is built-in). Charts and instructions are available, in the instruction manual, for quickly and easily determining which coil taps to use for various antennas. The units are shipped assembled, ready to program and install, factory assembled for 12 or 32 V-dc. The built-in power supply module, crystal ovens and final output tubes are simple to exchange to convert units from one voltage to another if required.

Simple Maintenance

High reliability is built into the TR-M. All solid state except 2 final output tubes. The fiber glass filled epoxy printed circuit boards are all easily accessible from both sides for ease of maintenance without removal. The transmit/receive relay is a plug-in module. The comprehensive instruction manual which accompanies each unit outlines installation, tuning and maintenance in easy to follow step-by-step procedures.

specifications

GENERAL

Frequency Range	2, 4, 6 and 8 MHz Marine Bands*		
Channels	Eleven (semi-duplex or simplex) programmable on any band.		
Input Voltage	12.9 or 35 volts dc $\pm$ 15% models available.		
Operating Modes	A3A, A3J, A3H.		
Temperature Range	-30°C to 50°C.		
Weight	22 lbs (10 kg)		
Size	5.4"H x 12"W x 15.5"D (13.8 x 30.8 x 39.8 cm)		
Certification	Type accepted by FCC under parts 81, 83, 89, and 91.		
Power Consumption		12.9 volt operation	35 volt operation
	Receiver (oven warm-up)	1.5 ampere	0.7 ampere
	Receiver (after warm-up)	0.7 ampere	0.45 ampere
	Transmitter (150 watts PEP)	25 amperes	10 amperes

(continued)

specifications continued

RECEIVER

Sensitivity	0.5 microvolts produces 1 watt audio with 10 dB S + N/N ratio.
Agc	Fast attack (1 m sec.), slow release (750 m sec.) Less than 10 dB change in audio for 100 dB change in rf.
Clarifier	Not less than ± 250 Hz.
Selectivity	A3A, A3J, 2.2 kHz at -6 dB, 5.5 kHz at -60 dB. A3H: 4.0 kHz at -6 dB, 10 kHz at -60 dB.
Modes	A3A, A3J—product detector. A3H—True a-m detection with diode detector.
Spurious Response	Internally generated spurious responses are less than 0.1 μ V equivalent level.
Image Rejection	Greater than 60 dB.
I-f Rejection	Greater than 90 dB on 2 and 4 MHz band. Greater than 60 dB on 6 MHz band. Greater than 50 dB on 8 MHz band.
Audio Output	4 Watts with less than 10% THD.

TRANSMITTER

Power Output	A3A, A3J—150 watts PEP usb. A3H—150 watts PEP, Carrier 3-6 dB down.
Spurious Emission	Exceeds FCC requirements under parts 81, 83, 89 and 91. Third order intermodulation better than -25 dB. Fifth order intermodulation better than -35 dB. Harmonics and others better than -65 dB.
Frequency Stability	± 20 Hz maximum drift.
Antenna Coupler	Built-in coupler that will match marine antennas normally used including 23-ft. whips above 4 MHz, 35-ft. whips and long wire antennas up to 75 ft. long, as well as 50-ohm antennas.
Microphone	Ruggedized Hand-Held Carbon, high impact case.

*Actual frequency range of 2 to 2.9 MHz, 3.75 to 5 MHz and 6 to 9 MHz.

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