

**TRANSMITTER-RECEIVER RADAR 77A**

**77A**

SUMMARY OF DATA

**PURPOSE**

Panel 77A is a submarine X-band Radar Transmitter and Receiver for use in conjunction with a PPI and A-scan ranging display and the associated aerial outfits.

**BRIEF DESCRIPTION**

Panel 77A houses the transmitter and receiver which is used in the Radar Type 1000 series. It is connected either to the AKS or AZM Periscope aerials or to the AKJ, AKT or AKU Warning aerials, depending on the radar Type. The Periscope or Warning aerial is selected by the Waveguide Switch on the Control Unit. The waveguide system is entirely "pre-plumbed" and includes an echo-box for spectrum analysis, thermistor bridge for measuring mean output power, and a noise source for measuring the receiver noise factor. The receiver is fitted with AFC and Swept Gain.



**PERFORMANCE**

Frequency:

- Transmitter : 9650 MHz ± 50 MHz
- Local Oscillator : 30 MHz less than transmitter frequency
- Intermediate : 30 MHz
- Peak Power Output : 30 kW nominal, at outlet
- Pulse Repetition Frequency : 400-500 Hz or 2000-2500 Hz
- Pulse Duration : 1 microsecond or 0.2 microsecond

Receiver

- Narrow Bandwidth : 2 MHz at -3 dB
- Wide Bandwidth : 8 MHz at -3 dB
- Noise Factor : not greater than 12 dB

**MAJOR UNITS**

<u>Pattern No.</u>	<u>Description</u>
AP 62167	Cabinet Assembly Design 62, Control, containing:
AP 63694	Distribution Chassis Design 4
AP 62168A	Amplifier Chassis 45T, 1F
AP 62169A	RF Power Meter Chassis
AP 62170	Mount with Thermistor
AP 62171	Amplifier Chassis Design 15, Echo Box
AP 62172	Cabinet Assembly Design 63, RF two in number, containing:
AP 62173	R.F. Drawer
AP 65037	Control and Monitor Unit Design 2
AP 62174	Pulse Generator Chassis
AP 173287	Modulator Chassis
AP 62176	Rectifier Chassis 63BC, 15 kV
AP 62177	TR Chassis Design 2
AP 62178	AFC and Trigger Chassis
AP 62179	Timing Chassis
AP 62180	Pre-Amplifier Chassis
AP 62181	Cabinet Assembly Design 64, Rectifier, containing:
AP 62182	Power Supply Drawer Design 8
AP 62183	Rectifier Chassis 63BD
AP 62185	Waveguide Assembly Design 4
AP 62186	Cable Unit

**ASSOCIATED AERIAL OUTFITS**

- Type 1000(1) Aerial Outfit AKS and AKJ
- Type 1000(2) Aerial Outfit AKS and AKT
- Type 1001 Aerial Outfit AKS and AKU
- Type 1002 Aerial Outfit AKS(2) and AKU(3)
- Type 1003(1) Aerial Outfit AZM(1) and AKU(4)
- Type 1003(2)(3) Aerial Outfit AZM(2) and AKU(4)
- Type 1004 Aerial Outfit AKU(5)

BR 333(1)  
Original

## RESTRICTED

### PHYSICAL DATA

Height	Width	Depth	Weight
157.5 cm (62 in)	57 cm (22.5 in)	61 cm (24 in)	431 kg (950 lb)

### POWER REQUIREMENTS

180 V 500 Hz or 200 V 400 Hz 6 amps and either  
115 V 60 Hz or 230 V 50 Hz, maximum 0.5 amps  
220 V dc 1 amp

### HANDBOOK

BR 2942(1)(2)

### ESTABLISHMENT LIST

E 1133

### INSTALLATION SPECIFICATION

B 821