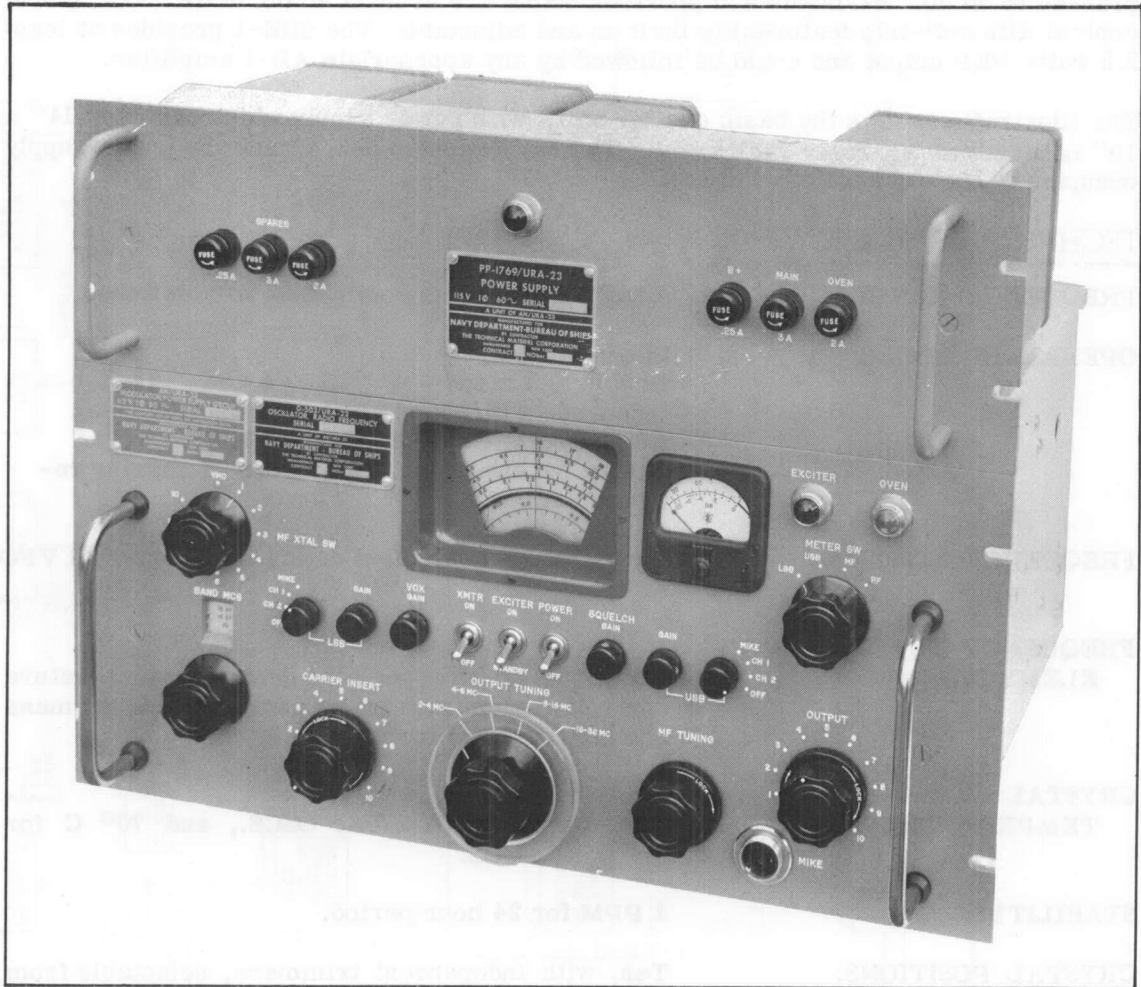


SALES SERVICE BULLETIN NUMBER 195B

Mode Selector, Transmitting, Model SBE-1
Modulator, Power Supply Group AN/URA-23

(Exciter, SSB, DSB, ISB, with or without Carrier)



The TMC Model SBE-1, Mode Selector, Transmitting, is a universal exciter permitting the transmission of any intelligence on Single or Double Sideband, with or without carrier.

The exciter may be used for simultaneous or independent transmission of intelligence on either upper or lower sideband. For example: A voice channel can be transmitted on the upper sideband while tone multiplex is being transmitted on the lower sideband.

The Model SBE-1 can be employed for double sideband suppressed carrier transmission commonly known as DSB. The carrier may be re-inserted at will to any degree required for the transmission involved.

The SBE-1 provides the following commonly known types of operation:

1. Conventional Double Sideband, AM, with the additional advantage of carrier level control.

2. Conventional Single Sideband with adjustable carrier insertion.
3. Conventional Interrupted Carrier, CW, or Sideband Tone CW.
4. Independent Sideband transmission with adjustable carrier insertion.

From the above paragraphs, it should be apparent that the SBE-1 provides transmission which is compatible with any of the current "controversial" systems.

The SBE-1 is continuously tuneable in the range of 2 to 32 megacycles and is frequency controlled by means of temperature controlled crystals or external VFO. Sideband selection is accomplished by a specially designed filter. The carrier may be suppressed to 55 db. Harmonic and spurious output are at least 40 db. down. VOX (voice control with anti-trip features) is built-in and adjustable. The SBE-1 provides at least 2.5 watts PEP output and could be followed by any appropriate AB-1 amplifier.

The illustration shows the basic exciter unit, with power supply which occupies 14" x 19" of standard WE relay rack space. The unit occupies 8-3/4" and the power supply occupies 5-1/4" of additional space.

TECHNICAL SPECIFICATIONS:

FREQUENCY RANGE:	2 to 32 megacycles continuous, bandswitched.
OPERATING MODES:	Single Sideband* Double Sideband* Independent Sideband* (separate intelligence) Amplitude Modulation, CW or MCW. * May be used with any degree of carrier re-insertion.
FREQUENCY CONTROL:	Temperature controlled crystals, or external VFO or synthesizer.
FREQUENCY DETERMINING ELEMENTS:	Contained in two specially designed temperature controlled aluminum ovens providing a large mass and high thermal inertia.
CRYSTAL OVEN TEMPERATURES:	75°C for 17 Kc & 270Kc OSCS., and 70° C for MF & HF OSCS.
STABILITY:	1 PPM for 24 hour period.
CRYSTAL POSITIONS:	Ten, with independent trimmers, selectable from front panel switch.
CRYSTAL SOCKETS:	For HC-6/U Holders. (CR-27/U crystal)
TUNING CONTROLS:	Directly calibrated in frequency.
OUTPUT POWER:	Continuously adjustable from zero to a maximum of 2.5 to 3 watts PEP.
OUTPUT IMPEDANCE:	72 ohms, nominal.
CARRIER SUPPRESSION:	At least 55 db. down from PEP level.
CARRIER RE-INSERTION:	Adjustable.
DISTORTION PRODUCTS:	At full PEP output, 3rd order distortion products

are at least 45 db below either tone of a standard two tone test.

SPURIOUS SIGNALS:

At least 60 db below PEP output.

HARMONIC RADIATION:

Second harmonic at least 40 db below PEP output. All other harmonics at least 50 db below PEP output.

UNWANTED SIDEBAND REJECTION:

500 cps single tone at 60 db down.

AUDIO INPUT:

500 K ohms for high impedance crystal or dynamic mike, -50 db. for full RF output. Two independent 600 ohm channels, balanced or unbalanced. -20 db. level for full RF output.

AUDIO RESPONSE:

Within 3 db. 350 to 3300 cps.

VOX OPERATION:

Voice control with anti - trip features, adjustable gain and squelch.

METERING:

Audio frequency monitors audio level of either upper or lower sideband. MF (mid frequency) monitors level of mid frequency channel. RF Output.

FRONT PANEL CONTROLS:

MF XTAL SW	EXCITER ON/STANDBY
BAND MCS	LSB MIKE/REMOTE
CARRIER INSERT	XMITR ON/OFF
OUTPUT TUNING	VOX GAIN
MF TUNING	SQUELCH GAIN
OUTPUT	METER SW
USB AUDIO GAIN	Indicator lamps for
LSB AUDIO GAIN	OVEN, EXCITER
USB MIKE/REMOTE	

INPUT POWER:

110/220 volts, 50/60 cycles, 120 watts average. 140 watts at momentary intervals as oven cycles.

TUBE COMPLEMENT:

		EXCITER
3 each 6AB4	-	Audio Amplifier
3 each 6U8	-	Amplifiers, Oscillators
4 each 12AT7	-	Combining Amplifier, Mixer VOX, Squelch Amplifier
3 each 12AU7	-	Oscillator, Relay Tube
1 each 6BA6	-	Amplifier
2 each 6CL6	-	Amplifier
1 each 6146	-	Power Amplifier
1 each 6AH6	-	Amplifier
3 each CK711	-	Modulators
1 each OA2	-	Voltage Regulator
1 each 6AL5	-	Squelch and VOX Rectifier

POWER SUPPLY

1 each 5R4	-	Rectifier
1 each OA2	-	Voltage Regulator

MOUNTING DATA:

Standard WE Relay Rack.

SIZE:

Exciter 19" wide x 15" deep x 8-3/4" high
 P/S 19" wide x 8-5/8" deep x 5-1/4" high
 Approx. 6 cu. ft. domestic pack
 Approx. 9 cu. ft. export pack

WEIGHT:

	NET	GROSS
Exciter	30 lbs.	130 lbs. domestic
P/S	36 lbs.	
Exciter	30 lbs.	140 lbs. export
P/S	36 lbs.	

**COMPONENTS &
CONSTRUCTION:**

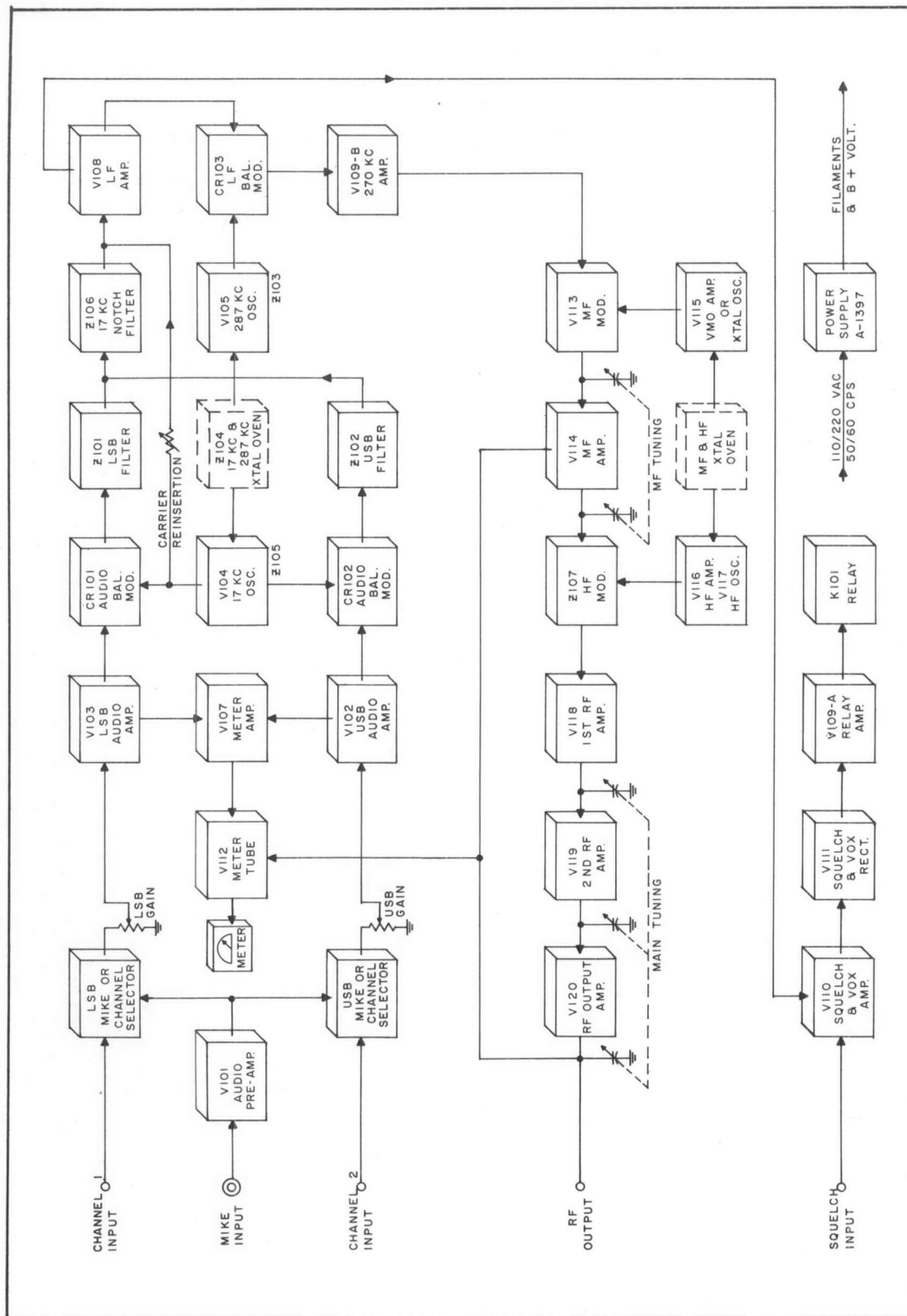
Equipment is manufactured in accordance with
 JAN/MIL Specifications wherever practicable.

LOGISTIC DATA:

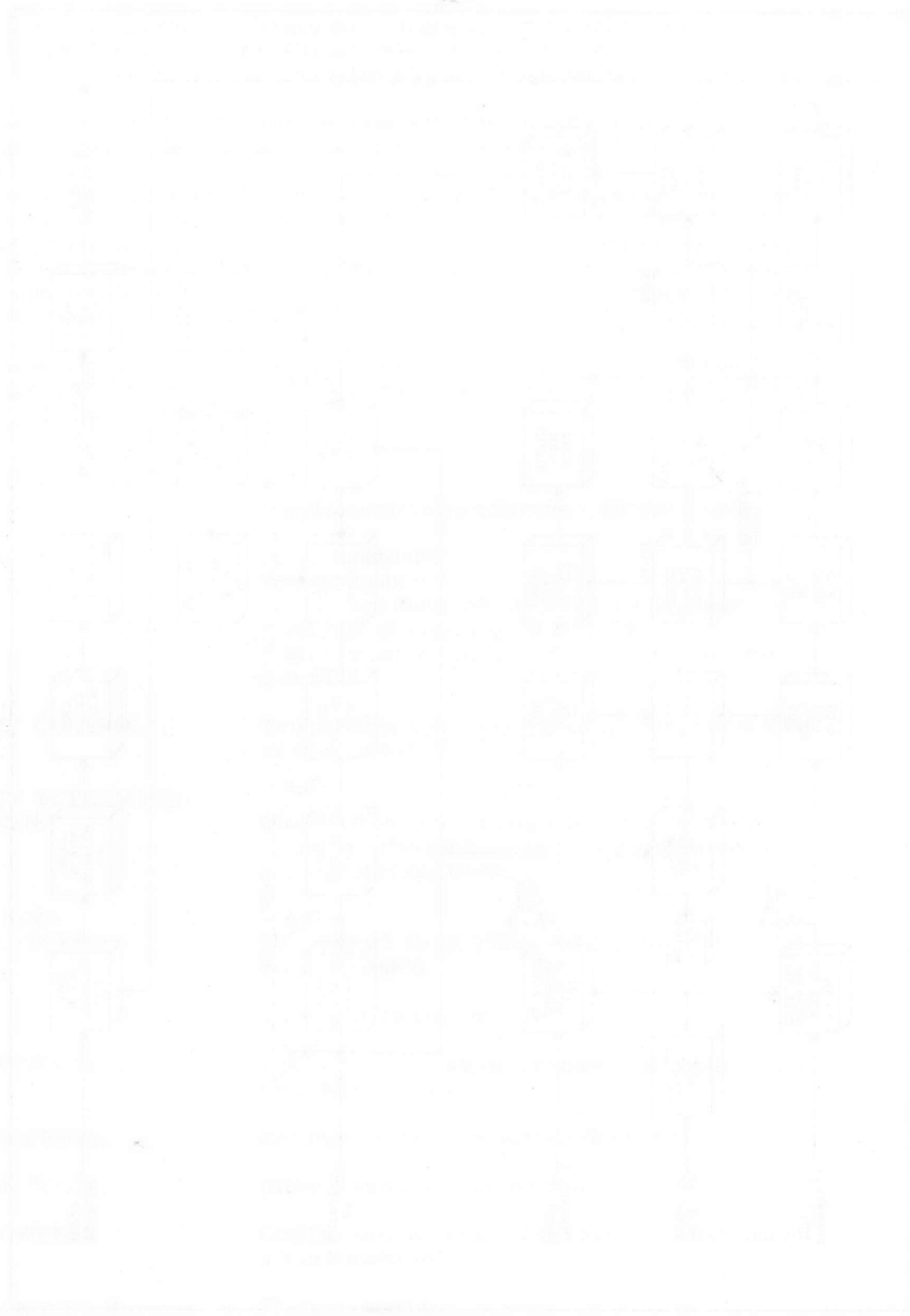
NOMENCLATURE	DESCRIPTION	TMC MODEL NO.	FSN
AN/URA-23	Modulator, Power Supply Group	SBE-1	F5820-543-1215
0-503/URA-23	Oscillator, Radio Frequency	A-1396	
PP-1796/URA-23	Power Supply	A-1397	
MT-1855/URT-17	Drawer, Electrical Equipment Cabinet Mounted	A-1279	

COMBINATION	CONSISTING OF	NOMENCLATURE	TYPE EMISSION
SBE-1	A-1396 A-1397	0-503/URA-23 PP-1796/URA-23	
*GPT-750(D)	Model RTF Model SBE-1 Model RTP A-1279 A-958 CAB/FRAME	AM-1703/URT-17 AN/URA-23 PP-1768/URT-17 MT-1855/URT-17 CY-2190/URT-17	CW, FS, SSB, DSB, ISB, LOW LEVEL AM

*Applicable Sales Service Bulletin SSB Number 174



Block Diagram Model SBE-1

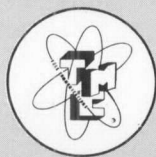


THE TECHNICAL MATERIEL CORPORATION

700 FENIMORE ROAD

MAMARONECK, NEW YORK

CABLE
TEPEI
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COMMUNICATION ENGINEERS

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