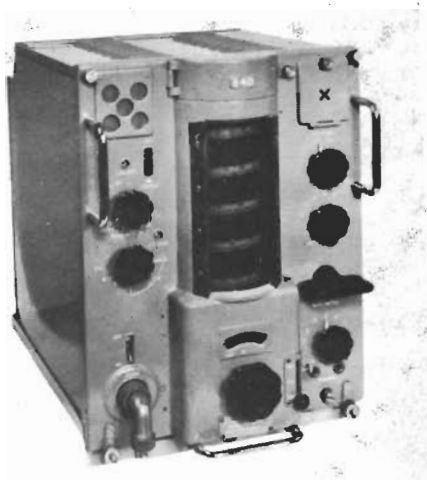
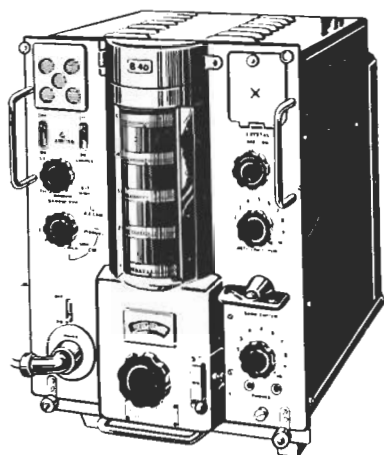


SUMMARY OF DATA

**PURPOSE**

Receiver B40 is the main unit in Receiver Outfits CDW and CAQ fitted in HM Ships and RN Shore Wireless Stations respectively. Five versions of the receiver are in service – Patterns 57140/A/B/C and D.

TYPE OF RECEPTION

CW and A.M. Voice.

Pattern 57140D is suitable for the reception of FST.

FREQUENCY RANGE

Five ranges, giving continuous coverage from 650 kHz to 30 MHz. Intermediate frequency – 500 kHz.

BRIEF TECHNICAL DESCRIPTION

The receiver is divided into three separate units as follows:-

R.F. Unit (All patterns)

- Stage 1 R.F. Amplifier, incorporating anti-cross-modulation control and harmonic frequency feed from the B.F.O. for calibration purposes.
- Stage 2 R.F. Amplifier, A.G.C. voltage applied.
- Stage 3 Mixer, employing a separate oscillator which can be crystal controlled. Fine adjustment of oscillator is provided in Pattern 57140D.

Note: Patterns 57140C/D has the input circuit modified for Common Aerial Working.

I.F. Unit (Patterns 57140/A)

- Stage 4 I.F. Amplifier
A.G.C. voltage applied
- Stage 5 I.F. Amplifier
A.G.C. voltage applied

Patterns 57140B/C/D

- I.F. Amplifier
A.G.C. voltage applied
- I.F. Amplifier, with crystal band-pass filter
(1 kHz)
A.G.C. voltage applied

Stage 6 I.F. Amplifier, second detector
noise limiter and B.F.O.

I.F. Amplifier, second detector, noise limiter
and B.F.O. In D Patterns, B.F.O. is modified
to give additional "high" and "low" positions
for FST working on "wide" position.

Note: The B.F.O. is crystal controlled for calibrating.

A three position bandwidth switch allows for I.F. passbands of 8 kHz (wide) and 3 kHz (narrow) in all patterns. The third position of this switch incorporates an audio note filter (band-pass 200 Hz, centre frequency 1000 Hz) in Patterns 57140/A; the 1 kHz crystal band-pass filter is substituted in Patterns 57140B/C/D.

I.F. and Power Unit

Stage 7 A.F. Amplifier

Stage 8 Output

PHYSICAL DATA

(Including resilient mounts and tray)	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Weight</u>
	19½ in.	13½ in.	16 in.	114 lb

ELECTRICAL CHARACTERISTICS

Sensitivity: Voice 2/μV for a 20 dB signal and noise to noise ratio.
CW 1/μV for a 20 dB signal and noise to noise ratio.

Selectivity: Wide-band ± 4 kHz for 6 dB
Narrow Band ± 1.5 kHz for 6 dB
Crystal Filter ± 0.5 kHz for 6 dB - Patterns 57140B/C/D only.

Image Rejection: @ 23 MHz: better than 40 dB
@ 1.05 MHz: better than 95 dB

A.G.C. Performance: For 77 dB change in input voltage, output change is less than 3.5 dB.

Noise Limiter: Effective between modulation depths of 10% and 60%.

Max. Power Output: Loudspeaker - 2.5 watts.
Ship's control system - 35 mw
Telephone - 14 mw

POWER REQUIREMENTS AND CONSUMPTION

Power Supply: 115/230 V 40/60 Hz a.c.
Power Consumption: 80 watts

AERIAL SYSTEM

Facilities are available for connecting both low impedance (80 ohms) and high impedance aerials to Patterns 57140/A/B and low impedance aerials to Patterns 57140C/D. The aerial system normally comprises standard wire or whip aerials.

REMARKS

Pattern 57140D contains later type valves replacing the obsolescent types fitted in the earlier patterns.

HANDBOOK

3P 1617

ESTABLISHMENT LIST

E935 (Ship) E995 (Shore)

INSTALLATION SPECIFICATION

P649 (Ship) J705 (Shore)