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**TRANSMITTER-RECEIVER, RADIO, A40**

**TECHNICAL HANDBOOK—INSPECTION STANDARDS**

**INTRODUCTION**

1. This regulation details the inspection standards to be observed during field inspection and after field or base repair.

2. Departure from these standards will not be permitted unless authorized by War Office or DEME of the overseas theatre concerned.

3. These standards cover the following aspects of inspection:—

- (a) **Field inspection schedule.** This details the standards to be observed when inspecting equipment in the hands of troops. The limits and tolerance quoted will also be observed as minimum field repair standards.
- (b) **Field inspection record.** This is for the use of an examiner when inspecting equipment in the hands of troops, or after field repair.
- (c) **Base inspection schedule.** To avoid repetition this

schedule has been omitted. Where necessary direct reference to the equipment EMERs is included in the base inspection record.

- (d) **Base inspection record.** This details the standards observed during base repair and subsequent inspection of equipment. The standards will apply to all shops, and will be used as a guide by other troops engaged in repair, and during the inspection of stocks.

**References**

4. Tels —Tels inspection standards
- Tels —Repainting of electronic equipment
- Tels —General standard for the overhaul of electronic equipment.
- Tels -469—Transmitter-receiver, radio, A40.

**FIELD INSPECTION SCHEDULE**

**Introduction**

5. (a) This part of the Inspection Standard is to be used when inspecting equipment in the hands of troops. The field inspection record gives the condemnation limits beyond which the equipment will not carry out its task efficiently.

(b) Using these condemnation limits as the standard, examiners should classify the equipment in accordance with the latest ACI. When the equipment is serviceable but barely satisfies the minimum standards in the field inspection record the symbol 'O' must be used to indicate that the equipment should be kept under observation with facilities available. If the facilities are not available to the unit the equipment may have to be downgraded. In borderline cases, particularly where quantitative measurements are not given, the final assessment must be based on the

examiner's experience and judgement using the record as a guide.

- (c) When inspecting sealed equipment, inspection is restricted to the examination of external components and those tests which can be applied to input and connections.

**General conditions**

6. (a) Equipment and all accessories will be inspected for general cleanliness and will be free from moisture and mould growth.
- (b) Work will be free from cracking, chipping or corrosion. Where patch painting has been carried out, uniformity of colour need not be considered.
- (c) Panel components and controls will be securely mounted and functional.

- (d) Accessories and station spares will be complete and serviceable. alternatives see Tels F 464 Table 1):—  
Signal generator No 18  
Voltmeter, valve, No 3  
Wattmeter, absorption, a.f., No 1  
Wattmeter, absorption, h.f., No 2  
Test set, deviation, f.m., No 2  
Frequency meter, SCR 211  
Oscillator, b.f., No 8
- (e) Outstanding modifications will be recorded.

**Electrical tests**

7. The electrical tests are detailed in the field inspection record. Further information regarding method and test conditions is given in Tels F 464.

**Test equipment**

8. The following test equipment will be required. (For A.C. p.s.u. for manpack radio sets.

**FIELD INSPECTION RECORD**

9. In the following particulars, paragraph numbers refer to Tels F 464.

Item	Test	Specification limits			Result
		Min	Max	Unit	
<b>General</b>					
1	Cleanliness	—	—	—	
2	Paintwork	—	—	—	
3	Components and controls	—	—	—	
4	Accessories and station spares	—	—	—	
5	Modifications	—	—	—	
<b>RECEIVER</b>					
<b>Battery consumption (para 22)</b>					
6	1.25V	—	600	mA	
7	45V	—	15.5	mA	
8	90V	—	3.5	mA	
<b>Sensitivity (para 30)</b>					
9	All channels, input 3μV modulated	20	—	dB	
<b>Frequency error (para 27)</b>					
Input 10μV adjusted for maximum quieting.					
10	Frequency error on all channels	—	8	kc/s	
<b>A.F. power output (para 34)</b>					
Input 1mV modulated					
11	At NORMAL	2.5	—	mW	
12	At WHISPER: reduction of NORMAL	12	18	dB	

## Field inspection record—(cont)

Item	Test	Specification limits			Result
		Min	Max	Unit	
<b>TRANSMITTER</b>					
<b>Battery consumption (para 22)</b>					
13	1.25V	—	975	mA	
14	45V	—	10	mA	
15	90V	—	37	mA	
<b>R.F. power output (para 36)</b>					
16	Normal voltage: channels 1-6, SKTX	250	—	mW	
17	Low voltage: channels 1 and 6, SKTX	100	—	mW	
<b>A.F.C. operation</b>					
18	Sidetone present on all channels	—	—	—	
<b>Modulation sensitivity (para 42)</b>					
19	At NORMAL: 250mV at 1kc/s to give deviation of	5	11	kc/s	
20	At WHISPER: 25mV at 1kc/s to give deviation of	5	11	kc/s	
<b>Sidetone (para 44)</b>					
A.F. output with input as in items 19 and 20					
21	At NORMAL	1	—	mW	
22	At WHISPER	1	—	mW	
<b>Frequency error (para 48)</b>					
23	Error on all channels	—	9	kc s	

BASE INSPECTION RECORD

**Specification**

12. The figures quoted are based on measurements made using the test equipment detailed in Tels F 464 Table 1.

13. In the following particulars paragraph numbers refer to Tels F 464; test conditions are detailed in para 16-18.

Item	Test	Specification limits			Result
		Min	Max	Unit	
	<b>General</b>				
1	General condition will be in accordance with Tels A 779	—	—	—	
	<b>RECEIVER</b>				
	<b>Battery consumption (para 22)</b>				
2	1.25V	—	600	mA	
3	45V	—	15.5	mA	
4	90V	—	3.5	mA	
	<b>Selectivity (para 25)</b>				
5	At -6dB	65	85	kc/s	
6	At -60dB	—	250	kc/s	
7	Centre frequency at -6dB	4.295	4.305	Mc/s	
	<b>Frequency error (para 27)</b>				
	Input 10 $\mu$ V c.w.				
8	Error on all channels	—	7	kc/s	
	<b>Sensitivity (para 30)</b>				
9	Normal voltage: All channels, input 2 $\mu$ V	20	—	dB	
10	Low voltage: All channels, input 4 $\mu$ V	20	—	dB	
	<b>Limiting characteristic (para 32)</b>				
	Input 5 $\mu$ V—1mV modulated				
11	Change in output	—	3	dB	
	<b>A.F. power output (para 34)</b>				
12	At NORMAL: Input 1mV modulated	3	—	mW	
13	At WHISPER: reduction of NORMAL	12	18	dB	
	<b>TRANSMITTER</b>				
	<b>Battery consumption (para 22)</b>				
14	1.25V	—	975	mA	
15	45V	—	10	mA	
16	90V	—	37	mA	

## Base inspection record—(cont)

Item	Test	Specification limits			Result
		Min	Max	Unit	
	<b>R.F. power output (para 36)</b>				
17	Normal voltage: channels 1-6, SKTX	275	—	mW	
	channel 1 SKTW	3	—	V	
19	Low voltage: channel 1 and 6, SKTX	100	—	mW	
	<b>A.F.C. operation (para 38)</b>				
20	Error of $\pm 250$ kc/s to be corrected by a.f.c. to within	—	7	kc/s	
	<b>Neutralising (para 40)</b>				
21	Frequency shift with SKTX short circuited (a.f.c. inoperative)	—	40	kc/s	
	<b>Modulation sensitivity (para 42)</b>				
22	At NORMAL: 250mV at 1kc/s to give deviation of	5	11	kc/s	
23	At WHISPER: 25mV at 1kc/s to give deviation of	5	11	kc/s	
	<b>Modulation frequency characteristic (para 46)</b>				
24	Input to produce deviation obtained in item 12 over frequency range 400c/s to 3kc/s	150	350	mV	
	<b>Sidetone (para 44)</b>				
	A.F. output with input as in item 12				
25	At NORMAL	1	—	mW	
26	At WHISPER	1	—	mW	
	<b>Frequency error (para 48)</b>				
27	All channels; from nominal frequency	—	9	kc/s	
	<b>Seal testing (para 50)</b>				
28	Initial pressure 10 lb/sq. in. Time constant	35	—	hr	

EME/8c/650

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