

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DEPOT MAINTENANCE MANUAL MICROPHONES T-30, T-46, T-50, M-29/U, AND M-80(*)/GR

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	Paragraph	Page
Scope	1	1
Indexes of equipment publications.	2	1
Applicability of depot overhaul standards.	3	1
Applicable references.	4	1
Test facilities required.	5	1
Tests.	6	2
APPENDIX A REFERENCES.		5

1. Scope

a. This manual covers the inspection requirements to be used in determining the quality and acceptability of repaired Microphones T-30, T-45, T-50 and M-29/U and Microphone, Dynamic M-80/GR or M-80A/GR.

b. The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-ME-NMP-EM, Fort Monmouth, N.J. 07703.

2. Indexes of Publications

a. *DA Pam 310-4*. Refer to the *latest* issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. *DA Pam 310-7*. Refer to the latest issue of DA Pam 310-7 to determine whether there are modification work orders (MWO'S) pertaining to the equipment.

3. Applicability of Depot Overhaul Standards

The tests outlined in this manual are designed to measure the performance capability of a required equipment. Equipment that is to be returned to stock should meet the standards given in these tests.

4. Applicable References

a. *Technical Publications*. The following technical publications are applicable to this equipment:

Title	Number
Depot Inspection Standard for Repaired Signal Equipment	TB SIG 355-1
Test Seta I-142, I-142B and Telephone Test Net AN/PTM-6	TM 11-2062

b. *Modification Work Orders*. Perform all applicable MWO's pertaining to the equipment before making the specified data. DA Pam 310-7 lists all available MWO's.

5. Test Facilities Required

The following equipment, or suitable equipments will be used in determining compliance with the requirements of this specific standard. Connector-Receptacle U-79/U is required for testing Microphone M-29/U.

*This manual supersedes TM 5965-268-50, 4 November 1964.

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Equipment	Federal stock No.	Quantity required	Applicable literature
Telephone Test Set AN/PTM-6.	9825-230-1048	1	TM 11-3002
Connector-Receptacle U-79/U.	5835-440-2026	1	
Multimeter TS-352/U			

6. Tests

Use the following requirements to determine the acceptability of repaired microphones for return to stock of reissue.

a. Mechanical Requirements. The mechanical requirements are as follows:

(1) *Microphone T-30.* Neckband elastic webbing must return to its original length after being stretched approximately 2 inches, as judged by the eye.

(2) *Microphone T-45.* Earphone cords of face straps must be equipped with tips. Case assembly screws on the microphone must be sealed in place, and the front and back of the case must be cemented together.

(3) *Microphone T-50.*

(a) *Electro-Voice Model 600C.* The red transformer leads must be connected to the normally closed switch terminals on the cord side of the switch. The green transformer lead must be connected to the microphone terminals at the top of the front housing. The cord connectors must be connected to the switch terminals and cord connector pins as indicated in the chart below.

Cord conductor	Connector pin	Switch position normally	Switch side	Terminal position
Black	1	Open	Transformer	Center
Red	2	Open	Transformer	End
White	3	Closed	Cord	Center
Shield	1	Closed	Cord	End*

*Cord shielding must be soldered to the terminal under the switch mounting cover.

(b) *Electro-Voice Model 600D.* One of the yellow secondary leads must be connected to the end terminal of the terminal board opposite the cord side, and the other lead must go to the terminal under the transformer screw. The black primary transformer

leads must be connected to the microphone terminals. The cord conductors must be connected to the switch terminals and cord connector pins indicator in the chart below.

Cord conductor	Connector pin	Switch position normally	Switch terminal board	Terminal position
White	1	Open	Cord side	Center
Red	2	Open	Cord side	End
Slate	3	Closed	Opposite cord side	End
Shield	1	Closed	Opposite cord side	Center*

*Cord shielding must be soldered to the terminal under the transformer cover, and a yellow jumper must be connected between the shield terminal and the microphone retaining plate cover terminal.

(4) *Microphone M-29/U.* Each microphone must be provided with a cover, and the windows must meet heat-sealed to the housing.

b. Electrical Requirements. (1) The following insulation resistance measurements will apply to all microphones included in this Depot Inspection Standard except Microphone T-50 ((2) end (3) below). The insulation resistance between cord conductors, between current-carrying parts of switches, between current-carrying parts of the plug, and between current-carrying parts of the microphone must be at least 200,000 ohms as measured on Test Set I-142. The points above must also withstand a dielectric test of 100 to 250 volts root mean square (rms).

(2) The insulation resistance for Microphone T-50 (Electro-Voice Model 600C), between the points and under the conditions listed in the chart below must be at least 200,000 ohms, and the same points must withstand a dielectric test of 100 to 250 volts rms. The transformer red leadout wire must be disconnected

from the switch terminal grounding to the housing for all tests.

From	Connector pins To	Conditions
1	2	Switch unoperated
1	3	Switch operated
1	Connector housing	Switch unoperated

(3) Insulation resistance for Microphone T-50 (Electro-Voice Model 600D), between the points and under conditions indicated in the chart below, will be at least 200,000 ohms. The points above must also withstand a dielectric test of 100 to 250 volts rms. The yellow secondary transformer lead connected to the end terminal of the terminal board opposite the cord must be disconnected for all tests.

From	Connector pins To	Conditions
1	2	Microphone unit open
1	3	Switch removed for all tests
1	Connector housing	
2	3	

Note—Reassemble the microphones and begin the next test.

c. Continuity. There must be continuity through the control section of the microphone switch when it is closed, when measured with the T8/352/U.

d. Test requirements. Test the microphones as indicated in the chart below. Use the AN/PTM-6. Refer to TM 11-2062 for operation instructions for the AN/PTM-6.

Equipment	Test	Test clip		Dial control setting					Equaliser	Key operation ^a					Meter indication	L - Left R - Right
		Com	Trans	D1	D2	D3	D4	D5		1	2	7	8	9		
T-30, T-32	Transmitting	Red	Black	3	.....	3	.....	1	IN	1BPE	RCT	AC	TRANS	OPR	R	-6 dB
T-45	Transmitting	C	T	3	.....	6	.....	1	IN	CBPE	RCT	AC	TRANS	OPR	R	-2 dB
	Noise cancellation ^b	C	T	3	.....	6	.....	1	IN	CBPE	RCT	AC	TRANS	OPR		
M-29/U	Transmitting	C	D	3	.....	6	.....		IN	CBPE	RCT	AC	TRANS	OPR	R	+1 dB
M-43/U	MIC EFF REC COM				1	.....	7	.....	OUT	CBPE	RCT	AC	REC	OPR	R	-10 dB
T-50	Transmitting	REC #3	COM #1	.....	6	.....	5	1	OUT	CBPE	RCT	AC	REC	OPR	R	-6 dB
M-80/U ^d	Transmitting	A	D	.....	5	.....	7	1	OUT	CBPE	RCT	AC	REC	OPR	R	-4 dB
	Noise cancellation ^b	A	D	.....	5	.....	7	1	OUT	CBPE	RCT	AC	REC	OPR		

^aKeys not listed remain in unoperated position

^bMeter indication at least 8 dB below transmitting efficiency test. Refer to TM 11-5082 for testing procedure.

^cThere must be continuity through the microphone when transmitting buttons are keyed.

^dMeter indication at least 10 dB below transmitting efficiency test. Place back of microphone against sound source screen for this test.

APPENDIX A REFERENCES

DA Pam 310-4	Index of Technical Manual Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	U.S. Army Index of Modification Work Orders.
TB SIG 355-1	Depot Inspection Standard for Repaired Signal Equipment.
TM 11-2062	Test Sets I-142, I-142A, I-142B, and Telephone Test Set AN/PTM-6.
TM 38-750	Army Equipment Record Procedures.

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