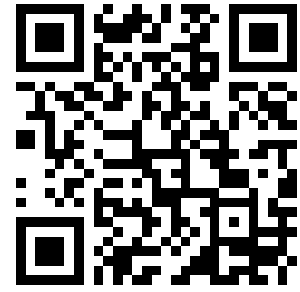


TM-11-5815-263-12

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

TELETYPEWRITER SETS AN/FGC-56 AND AN/FGC-58

This copy is a reprint which includes current pages from Changes 1 through 5.

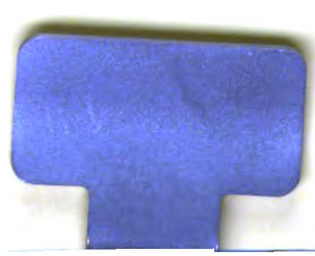
HEADQUARTERS, DEPARTMENT OF THE ARMY
APRIL 1960

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when performing maintenance within the cabinet. Serious injury or death may result from contact with the 115-volt circuits of the sets. Turn off the power before replacing any parts inside the cabinet.

DON'T TAKE CHANCES!



Changes in force: C1, C2, C3, C4 and C5.

TM 11-5815-263-12
C 5

CHANGE
NO. 5

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *22 August 1978*

Operator and Organizational Maintenance Manual
TELETYPEWRITER SETS
AN/FGC-56 (5815-00-755-0903), AN/FGC-56X (5815-00-868-8147), AN/FGC-58 (5815-00-745-6844), AN/FGC-58X (5815-00-738-6018), AN/UGC-13 (5815-00-064-5594), AN/UGC-13AX (5815-00-763-0196), AN/FGC-169 (5815-01-016-8455), AN/FGC-170 (5815-01-016-8456), AN/FGC-171 (5815-01-014-4573), AN/FGC-172 (5815-01-016-8455), AN/UGC-125 (5815-01-016-8455), AND AN/UGC-125AX (5815-01-015-1572)

TM 11-5815-263-12, 12 April 1960, is changed as follows to add information covering Teletypewriter Sets AN/FGC-56X, AN/UGC-13, AN/UGC-13AX, and low-level teletypewriter Sets AN/FGC-169, AN/FGC-170, AN/FGC-171, AN/UGC-125, and AN/UGC-125AX.

The title is changed as shown above.

Note. The parenthetical reference to a previous change (example: "page 1 of C1") indicates that pertinent material was published in that change.

WARNING

This equipment contains selinium rectifiers which immediately release poisonous fumes when they burn out. The fumes are very toxic and have a stong, unpleasant odor resembling the smell of rotten eggs. Whenever this odor is detected, IMMEDIATELY set the power switch to OFF and thoroughly ventilate the area. Do not handle the burned-out rectifier until it cools. PERMANENT INJURY OR DEATH MAY RESULT FROM PROLONGED BREATHING OF THE FUMES.

Page 3, paragraph 1. Delete paragraph 1 and substitute:

1. Scope

a. This technical manual describes the teletypewriter sets listed in *b* below and covers their operation and organizational maintenance.

b. The two major categories of teletypewriter sets covered in this manual (high-level sets and equivalent low-level sets) are listed below. Some of the sets also include a reperforator as indicated.

High-level sets	*Includes reperforator*	*Equivalent low-level sets*
AN/FGC-56 [a]	no	AN/FGC-169 [a]
AN/FGC-56 [b]	no	AN/FGC-170 [b]
AN/FGC-58 [a]	yes	AN/FGC-171 [a]
AN/FGC-58X [b]	yes	AN/FGC-172 [b]
AN/UGC-13 [a]	yes	AN/UGC-125 [a]
AN/UGC-13AX [b]	yes	AN/UGC-125AX [b]

[a] Includes synchronous motors.
[b] Includes series-governed motors.

c. All information in this manual applies to all equipments listed above unless specified otherwise.

Paragraph 2 (page 1 of C4). Delete subparagraphs *b* and *c* and substitute subparagraphs *b* through *e* below.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Packaging Improvement Report) as prescribed in AR 700-58 (Army)/NAVSUPINST 4030.29/AFT 71-13/MCO 4030.29A and DSR 4145.8.

c. Discrepancy in Shipment Report (DISREP) (SF361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR55-38/NAVSUPINST 4610.33A/AFR 75-18/MCO P4610.19B and DLAR 4500.15.

d. Administrative Storage. For procedures, forms and records, and inspection requirements during administrative storage of equipment, refer to TM 740-90.

e. Destruction to Prevent Enemy Use. When ordered by the commanding officer, proceed with destruction of the equipment in the order of priority according to the prescribed methods outlined in TM 750-244-2, Procedures for Destruction of Equipment to Prevent Enemy Use.

Paragraph 2.1 (page 1 of C4). In lines 6 and 7, delete "Electronics Command, ATTN: AMSEL-MA-C" and substitute: Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-MA-Q.

Paragraph 3, subparagraph *a*. Change the first sentence to: The teletypewriter sets covered in this manual permit the transmission, monitoring, and reception of teletypewriter messages. Change the

fourth sentence to: In addition, the reperforator-equipped sets (para 1*b*) can provide printed and perforated tape copy of messages.

Paragraph 4. Change "Signalling code" technical characteristics to:

Signalling code .. Five-unit, start-stop. Stop impulse length equals start impulse length multiplied by either 1.42 (7.42 unit code: (AN/FGC-56(*), AN/FGC-58(*), AN/FGC-169, AN/FGC-170, AN/FGC-171, and AN/FGC-172) or by 1 (7.00-unit code: AN/UGC-13(*) and AN/UGC-12(*).

Change the "Type of signals technical characteristic to:

Type of signals (transmit and receive) ..... Neutral (20- or 60-ma) for high-level sets (para 1*b*). Polar (±6 volts) for low-level sets.

Page 5, paragraph 4*a*. Change the "Total weight" technical characteristic to:

Total weight (installed):
Sets without typing reperforator (para 5*a*)... Approximately 260 lb.
Sets with typing reperforator ..... Approximately 300 lb.

Subparagraph *e*, title. Change the title to:

e. Typing Reperforator (para 5a).

Paragraph 5. Delete subparagraph *a* and substitute:

a. Major Components and Dimensions.

Item	*Equipment marking*	*Quantity (ea)*	*Height (in.)*	*Depth (in.)*	*Width (in.)*	*Weight (lb)*
Typing unit (fig. 4)	LP59WY/AFK [a thru h]	1	10	15½	10½	19
	LP77YD/AGM [i, j, k, l]	1	"	"	"	"
Keyboard base (fig. 5)	LAK11BRE [a thru h]	1	5	20	21½	20
	LAK21BRW [i, j, k, l]	1	"	"	"	"
Typing perforator (fig. 4)	LTPE1AWA [a thru h]	1	8	7	8	7
	LPR36BWA [i, j, k, l]	1	"	"	"	"
Transmitter distributor (fig. 9)	LXD7 [a thru h]	1	5	4	7	7
	LXD11 [i, j, k, l]	1	"	"	"	"
Base, transmitter distributor	LXCB8 [a thru h]	1	4½	11½	7	6
	LCXB13 [i, j, k, l]	1	"	"	"	"
Motor Unit	LMU3 [c, h, i, k]	1	6	4	8½	10
	LMU12 [a, c, e, g, i]	1	"	"	"	"
	LMU39 [b, d, f, h, j, l]	1	"	"	"	"
	LMU41 [j, l]	1	"	"	"	"
Electrical service unit	LESU12 [c, d]	1	8½	5	15½	9
	LESU37 [a, b, c, d]	1	"	"	"	"
	173824 [i, j]	1	"	"	"	"
	323811 [g, h]	1	"	"	"	"
	323812 [e, f, g, h, k, l]	1	"	"	"	"
	323815 [k, l]	1	"	"	"	"
	323825 [e, f, k, l]	"	"	"	"	"
Cabinet	LAAC214BR [a thru h]	1	39	18½	36	140
	LAAC229BR [i, j, k, l]	1	"	"	"	"
Typing Reperforator	LPR15AWA [c, d, g, h]	1	8	6½	7½	7½
	LPR35BWA [i, j, k, l]	1	"	"	"	"
Base, typing reperforator	LRB20 [c, d, g, h]	1	9	13½	13	12
	LRB32 [i, j, k, l]	1	"	"	"	"

[a] Part of AN/FGC-56
[b] Part of AN/FGC-56X
[c] Part of AN/FGC-56
[d] Part of AN/FGC-58X
[e] Part of AN/FGC-169
[f] Part of AN/FGC-170
[g] Part of AN/FGC-171
[h] Part of AN/FGC-172
[i] Part of AN/UGC-13
[j] Part of AN/UGC-13AX
[k] Part of AN/UGC-125
[l] Part of AN/UGC-125AX

Page 11, paragraph 8*a*. Make the following changes:

In the "Control" column, after "Keyboard control knob (fig. 6)", add: (high-level sets only).

Add the following at the end of subparagraphs *a*:

Control	Control position	Function
Keyboard control knob (fig. 6) (low-level sets only)	K	Permits keyboard or tape transmission with page copy of messages transmitted. Permits page or tape reception.
	K-T	Permits keyboard preparation of tape with page copy while receiving incoming messages on reperforator (reperforator-equipped sets only).
	T	Permits tape transmission to external signal circuit with page copy of transmitted and received messages. Permits keyboard preparation of tape with page monitor copy.

Page 24, paragraph 17. Make the following changes:

In subparagraph *a*, change the "Operation desired" column heading to: (high-level sets) (See para 8*a* for low-level sets).

Change subparagraph *b*(1)(*b*) to:

(*b*) Upon completion of all transmission to the selected station(s), press the blank key three times to restore all teletypewriter sets in the circuit to the original standby condition.

Page 25. Add the following note after paragraph 18:

NOTE

Low-level teletypewriter sets cannot be started by a remote station and returned to the stand-by condition as described in paragraphs 16, 17, and 18 above. The motors of low-level sets must be turned on and off at each site.

Page 33. Delete Chapter 4.

By Order of the Secretary of the Army:

BERNARD W. ROGERS
General, United States Army
Chief of Staff

Official:

J. C. PENNINGTON
Brigadier General, United States Army
The Adjutant General

Distribution:

Active Army:

USAINSCOM (2)
COE (1)
TSG (1)
USAARENBD (1)
DARCOM (1)
TRADOC (2)
OS Maj Comd (4)
TECOM (2)
USACC (4)
MDW (1)
Armies (2)
Corps (2)
HQ, 7th Sig Comd (2)
USACC-SO (2)
Svc Colleges (1)
USASIGS (5)
USAADS (2)
USAFAS (2)
USAARMS (2)
USAIS (2)
USAES (2)
USAICS (3)
MAAG (1)
USARMIS (1)
USAERDAA (1)
USAERDAW (1)
HISA (Ft Monmouth) (26)
USACC-EUR (2)
USACC-PAC (2)
USACC-A (2)
Army Dep (1) except
Fort Carson (5)
Fort Gillem (10)
Fort Gordon (10)
Fort Huachuca (10)
LBAD (14)
SAAD (30)
TOAD (14)
SHAD (3)
Ft Richardson (CERCOM Ofc) (2)
USA Dep (1)
Sig Sec USA Dep (1)
Units org under fol TOE:
29-207 (2)
29-610 (2)
11-16 (1)
11-85 (1)
11-97 (1)
11-98 (1)
11-117 (1)
11-302 (1)
11-500 (AA-AC) (1)
29-134 (1)
29-136 (1)
32-52 (1)
32-56 (1)
32-57 (1)

NG: None
USAR: None
For explanation of abbreviations used see, AR 310-50

TM 11-5815-263-12
C 4

Change No. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *19 December 1978*

Operator and Organizational Maintenance Manual
TELETYPEWRITER SETS
AN/FGC-56, AN/FGC-58 AND AN/FGC-58X

TM 11-5815-263-12, 12 April 1960, is changed as follows:

Page 3, paragraph 1.1. Delete paragraph 1.1 and substitute:

1.1. 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 DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

Paragraph 2. Delete paragraph 2 and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army)/NAVSUP PUB 378 (Navy)/AFR 71-4 (Air Force)/and MCO P4030.29 (Marine Corps).

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38 (Army)/NAVSUP PUB 459 (Navy)/AFM 75-34 (Air Force)/and MCO P4610.19 (Marine Corps).

2.1. Reporting of Errors

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 Commander, US Army Electronics Command, ATTN: AMSEL-MA-C Fort Monmouth, NJ 07703.

Page 5, paragraph 5. In subparagraph *a* change title to "Components and Dimensions."

After subparagraph *b* add:

c. Items Comprising an Operable Equipment.

FSN	*Qty*	*Nomenclature, part No., and mfr code*	*Usable on code*
		NOTE Number 1 in the usable on code column refers to AN/FGC-56, number 2 refers to AN/FGC-58, and number 3 refers to AN/FGC-58X.	
		NOTE The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 708-42 and used to identify manufacturer, distributor, or Government agency, etc.	
3030-766-1050	1	Belt: Teletype: 161806 (Installed)	1,2
5815-775-6501	5	Coupling: Teletype: 158020 (Installed)	1,2,3

c. *Items Comprising an Operable Equipment* — Continued

FSN	Qty	Nomenclature, part No., and mfr code	Usable on code
5815-652-1536	1	Gear, Helical: Teletype 158005 (60 wpm drive for TD, Installed)	1,2,3
5815-652-1537	1	Gear, Helical: Teletype 158006 (60 wpm drive for TD, Installed)	1,2,3
5815-652-6484	1	Gear, Helical: Teletype 158003 (75 wpm drive for TD, packaged separately)	1,2,3
5815-652-1575	1	Gear, Helical: Teletype 158004 (75 wpm drive for TD, packaged separately)	1,2,3
5815-652-1574	1	Gear, Helical: Teletype 158001 (100 wpm drive for TD, packaged separately)	1,2,3
5815-652-6483	1	Gear, Helical: Teletype 158002 (100 wpm drive for TD, packaged separately)	1,2,3
5815-705-4997	1	Gear, Helical: Teletype 159278 (60 wpm drive for page printer, Installed)	1,2,3
5815-705-4998	1	Gear, Helical: Teletype 159279 (60 wpm drive for page printer, Installed)	1,2,3
5815-705-4999	1	Gear, Helical: Teletype 159281 (75 wpm drive for page printer, packaged separately)	1,2,3
5815-706-6664	1	Gear, Helical: Teletype 159282 (75 wpm drive for page printer, packaged separately)	1,2,3
5815-705-5001	1	Gear, Helical: Teletype 159284 (100 wpm drive for page printer, packaged separately)	1,2,3
5815-705-5003	1	Gear, Helical: Teletype 159285 (100 wpm drive for page printer, packaged separately)	1,2,3
5815-712-9477	1	Gear, Helical: Teletype 161783 drive for reperforator (Installed)	2,3
5815-705-5004	1	Insulator: Teletype 159287 (Installed)	1
5815-705-5004	2	Insulator: Teletype 159287 (Installed)	2,3
7530-281-2694	1	Paper, Teletypewriter, Roll: type #1, class 1, group B, UU-P-547; 81348	1,2,3
5305-705-5007	2	Post: Teletype 161301 (Installed)	1
5305-705-5007	4	Post: Teletype 161301 (Installed)	2,3
5815-675-6405	1	Shaft: Teletype 158079 motor coupling, (Installed)	1,2,3
5815-767-2313	1	Shaft: Teletype 158013 LCXB8 coupling, (Installed)	1,2,3
5815-370-0343	1	Spindle, Paper: Teletype 150907 (Installed)	1,2,3
5815-356-3062	2	Spool, Ribbon: Teletype 71681 (Installed)	1
5815-356-3062	3	Spool, Ribbon: Teletype 71681 (Installed)	2,3
5915-188-5631	1	Relay, Armature RE-163/G	1
5915-188-5631	2	Relay, Armature RE-163/G	2,3
7510-162-5643	2	Ribbon, Teletypewriter: type A class 1 (Installed); DDD-R311; 81348	1
7510-162-5643	3	Ribbon, Teletypewriter: type A class 1 (Installed); DDD-R311; 81348	2,3
7530-285-2377	1	Tape, Teletypewriter: (Installed) UU-T-120, 81348	1
7530-285-2377	2	Tape, Teletypewriter: (Installed) UU-T-120, 81348	2,3

Page 9. After paragraph 7 add:

7.1. Expendable Consumable Items

A list of expendable consumable items required for operation appears in table 1-1.

Table 1-1. Expendable Consumable Supplies and Material

The supplies and material listed in this table are required for operation of this equipment and are authorized to be requisitioned by SB 700-50. The FSN for the applicable unit of issue required can be found in appropriate supply catalogs. The FSCM is used as an element in item identification to designate manufacturer or distributor or Government agency, etc., and is identified in SB 708-42.

Item	Description	Ref No. and FSCM	FSC
1	Paper, Teletypewriter: type 1, class No. 1, group B	UU-P-547 81348	7530
2	Ribbon, Teletypewriter: type A, class No. 1	DDD-R-311 81348	7510
3	Tape, Teletypewriter	UUT-120 81348	7530

Page 34, appendix II. Delete appendix II in its entirety.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:
VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:
Active Army:
USASA (2)
CNGB (1)
ACSC-E (2)
Dir of Trans (1)
COE (1)
TSG (1)
USAARENBD (1)
USAMB (10)
AMC (1)
TRADOC (2)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (4)
LOGCOMDS (3)
MICOM (2)
TECOM (2)
USASA (PAC) (2)
USACC (4)
MDW (1)
Armies (2)
Corps (2)
HISA (ECOM) (21)
Svc Colleges (1)
USASESS (10)
USAADS (2)
USAFAS (2)
USAARMS (2)
USAIS (2)
USAES (2)
USAINTS (3)
WRAMC (1)
USACDCEC (10)
ATS (1)
Sig FLDMS (1)
Instl (2) except
Fort Gordon (10)
Fort Huachuca (10)
WSMR (1)
Fort Carson (5)
Ft Richardson (ECOM Ofc) (2)
Army Dep (2) except
LBAD (14)
SAAD (30)
TOAD (14)
ATAD (10)
USA Dep (2)
Sig Sec USA Dep (2)
Sig Dep (2)
USAERDAA (1)
USAERDAW (1)
MAAG (1)
USARMIS (1)
Units org under fol TOE:
(1 copy each unit)
11-85
11-86
11-97
11-98
11-117
11-127
11-158
11-302
11-500(AA-AC)
29-134
29-136

NG: None
USAR: None
For explanation of abbreviations used, see AR 310-50.

TM 11-5815-263-12
C 3

CHANGE
No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *6 May 1966*

Organizational Maintenance Manual

TELETYPEWRITER SETS AN/FGC-56, AN/FGC-58, AND AN/FGC-58X

TM 11-5815-263-12, 12 April 1960, is changed as indicated and includes Teletypewriter Set AN/FGC-58X, procured on order No. FR-11-022-C-4-26156(E).

The title is changed as shown above.

Note. The parenthetical reference to previous changes (example: page *2* of C 2) indicates that pertinent material was published in that change.

In the following places, delete "AN/FGC-56 and AN/FGC-58" and substitute: AN/FGC-56, AN/FGC-58, and AN/FGC-58X:

Page 3, paragraph 1a, line 2.

Paragraph 3*a*, line 1.

Page 7 paragraph 7, line 1.

Page 33, appendix I, introductory paragraph (page 6 or C 2).

In the following places, after "AN/FGC-58," delete "only" and add: and AN/FGC-58X only.

Page 5, paragraph 4*e*, heading.

Page 14, paragraph 8*f* heading.

Page 31, paragraph 26*a*(2), heading.

Page 32, paragraph 26*c*(2), heading.

In the following places, after "AN/FGC-58," add: and AN/FGC-58X.

Page 3, paragraph 3*a*, line 9.

Page 7, paragraph 7, line 2.

Subparagraph *a*, line 6.

Subparagraph *f*, line 2.

Page 9, paragraph 7*h*(2), line 3.

Page 17, paragraph 10*b*, line 1.

Paragraph 13, line 3.

Subparagraph *a*, line 3.

Page 24, paragraph 16*b*, line 2.

Subparagraph *c*, line 1.

Paragraph 17, line 4.

Subparagraph 17*a*, chart, footnote b.

Page 25, paragraph 18*a*, line 9.

Subparagraph *b*, line 4.

Page 26, paragraph 19*e*(7) and (8) (page 2 of C 2). Paragraph 22.1, chart, sequence No. 8, "Procedure" column (page 3 of C 2).

Heading between sequence No. 40 and 41 (page 5 of C 2). Paragraph 22.2, chart, sequence No. 3 and 5, "Item" column (page 5 of C 2).

Paragraph 23, line 3.

In the following places, after "AN/FGC-58," add: or AN/FGC-58X.

Page 26, paragraph 22.1, chart, sequence No. 1, "Item" column (page 3 of C 2).

Page 29, paragraph 23*c*, heading.

Page 30, paragraph 24, chart, "Symptom" column, item 5.

Page 31, paragraph 25*b*, heading.

In the following places, after "AN/FGC-56," delete "or" and add: AN/FGC-58, or AN/FGC-58X.

Page 19, paragraph 16*a*, line 2.

Page 29, paragraph 24, line 3.

Page 3, paragraph 1. Delete subparagraph *b* and substitute:

b. The AN/FGC–56 does not include a reperforator. The AN/FGC–58 and AN/FGC–58X include a reperforator with associated components. The AN/FGC–58 includes synchronous motors; the AN/FGC–58X includes series-governed motors.

Paragraph 2 (page 1 of C 2). Delete subparagraph *c* and substitute:

c. Reporting of Equipment Manual Improvements. The direct reporting of errors, omissions, and recommendations for improving this manual by the individual users is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Publications) will be used for reporting these improvements. This form will be completed by the use of pencil, pen, or typewriter and forwarded direct to Commanding General, U. S. Army Electronics Command, ATTN: AMSEL–MR–(NMP)–MA, Fort Monmouth, N. J. 07703.

Paragraph 4a. After "Motors: Type ..... Synchronous," add: and series governed.

Page 5, paragraph 4*a*. Make the following changes:

After line 3 "(LMU–12) ..... 1/12 hp," add: (LMU–39) ..... 1/15 hp.

After line 5 "(LMU–3) ..... 1/20 hp," add: (LMU–41) ..... 1/20 hp.

After line 14 "AN/FGC–58 ..... Approximately 300 lb," add: AN/FGC–58X ..... Approximately 300 lb.

Paragraph 5*a*, chart. Make the following changes: Under the "Quantity" heading, after "AN/FGC–58," add: and AN/FGC–58X.

After the fifth item, add the following to the chart:

Item	Equipment marking	Quantity AN/FGC-58X	Height (in.)	Depth (in.)	Width (in.)	Unit Weight (lb)
Motor unit	LMU39	1/c	5¾	4	10½	10

After the fourteenth item, add the following:

Item	Equipment marking	Quantity AN/FGC-58X	Height (in.)	Depth (in.)	Width (in.)	Unit Weight (lb)
Motor unit	LMU41	1/c	5¾	4	10½	10

Add the following footnote to the chart:

c Used on teletypewriter set AN/FGC–58X only.

Page 7, paragraph 6, chart. Make the following changes:

After item 3, add:

Item	Common name
Motor unit LMU39	Main motor unit (AN/FGC-58X)

After item 4, add:

Item	Common name
Motor unit LMU41.....	Reperforator motor unit (AN/FGC-58X only)

Page 9, paragraph 7*h*. Delete subparagraphs (1) and (2) and substitute:

(1) *Main Motor Unit, AN/FGC–56 and AN/FGC–58* (fig. 5). The main motor unit includes a shock-mounted synchronous motor and a sheet metal motor mounting frame. A box on the underside of the frame includes electrical components of the motor circuit. A manual overload reset button (not shown) is mounted on the right-rear corner of the frame. The main motor unit provides mechanical power for all operating components of the set (except the reperforator of the AN/FGC–58).

(2) *Main Motor Unit AN/FGC–58X.* The main motor unit includes a shock-mounted ac-governed motor. The entire motor is shielded to minimize radio interference. A box on the underside of the frame includes electrical components of the motor circuit. An electromechanical governor is mounted on the motor shaft; targets for speed checking are marked on the governor cover. This main motor unit provides mechanical power for all operating components of the set, with the exception of the reperforator.

Add subparagraph (3) after subparagraph (2).

(3) *Reperforator motor units.* The reperforator motor units are mounted behind the reperforator of the AN/FGC–58 (fig. 4) and AN/FGC–58X.

The AN/FGC–58 motor is synchronous, and the AN/FGC–58X motor is series governed. The reperforator motors are similar to the main motor units, except that they have less horsepower and are physically smaller.

Page 14, paragraph 8. Delete subparagraph *g* and substitute:

g. Motor Units. Each synchronous motor unit of the AN/FGC–56 and AN/FGC–58 (fig. 5) includes an overload reset button which is used to re-start the motor after it has been stopped because of overheating. The series-governed motor units of the AN/FGC–58X do not include an overload reset button.

Page 30, paragraph 24. Make the following changes:

First symptom. In the "Correction" column for the motor overheated conditions, delete the information and substitute: For AN/FGC–56 and AN/FGC–58 only, turn off power, open dome, and allow motor to cool. Press overload reset button on base of motor (fig. 5) and turn power on again. For AN/FGC–58X only, higher level maintenance is required.

For the symptom "Reception of garbled copy," add the following to the "Probable trouble" and "Correction" columns:

Probable trouble	Correction
Incorrect motor speed.....	Higher level maintenance required.

Third symptom from the bottom. In the "Correction" column for the motor overheated condition, delete the information and substitute: For AN/FGC–56 and AN/FGC–58 only, press overload reset button on base of motor (fig. 5) and turn power on again. On AN/FGC–58X only, higher level maintenance is required.

Page 34. Make the following changes:

Delete appendix II (page 1 of C 1) and substitute new appendix II.

APPENDIX II
BASIC ISSUE ITEMS
Section 1. INTRODUCTION

1. General

This appendix lists items supplied for initial operation and for running spares. The list includes tools, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

2. Columns

Columns are as follows:

a. Federal Stock Number. This column lists the 11-digit Federal stock number.

b. Designation by Model. The dagger (†) indicates the model in which the part is used and further, by its position, designates the item number by which the item is identified, and/or the quantity used in each model where the quantity varies.

c. Description. Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.

d. Unit of Issue. The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

e. Expendability. Nonexpendable items are indicated by NX. Expendable items are not annotated.

f. Quantity Authorized. Under "Items Comprising an Operable Equipment," the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spare Items" the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

g. Illustration. The "Item No." column lists the reference designations that appear on the part in the equipment. These same designations are also used on any illustrations of the equipment. The numbers in the "Figure No." column refer to the illustrations where the part is shown.

SECTION II. OPERATOR'S FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL						DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
											FIGURE NO.	ITEM NO.
							TELETYPEWRITER SETS AN/FGC-56, AN/FGC-58 AND AN/FGC-58X					
5815-755-0903							TELETYPEWRITER SET AN/FGC-56: fixed station; std comm keyboard; english characters, 72 characters per line; friction feed; sync motor; 7.42 unit code; 115 v ac, 60 cy, single ph		NX		1	
5815-754-6844							TELETYPEWRITER SET AN/FGC-58: fixed station, english characters, 72 characters, per line; friction feed; synch motor, 7.42 unit code; 115 v ac, 60 cy, single ph; includes reperforator for monitoring		NX		1	
5815-738-6018							TELETYPEWRITER SET AN/FGC-58X: fixed station english characters; 72 characters, per line; friction feed; series motor, 7.42 unit code; 115 v ac, 50-60 cy, single ph		NX		1	
							NOTE: Model column 1 refers to AN/FGC-56; column 2 refers to AN/FGC-58: column 3 refers to AN/FGC-58X					
							ITEMS COMPRISING AN OPERABLE EQUIPMENT					
ORD THRU AGC	†	†	†				TECHNICAL MANUAL TM 11-5815-263-12: (NOTE: For technical manuals the quantity indicates the maximum number of copies authorized for packing (or issue) with the equipment. Where a number of these equipments are concentrated in a small area, the quantity on hand may be reduced to practical levels. Excess publications must be returned to publication supply centers through AG channels).			1		
5915-188-5631	†						RELAY, ARMATURE RE-163/G			1	3	K2
		†	†							2	3	K2,5
7510-162-5643	†						RIBBON, TELETYPEWRITER: Fed Spec No. DDD-R311; type A class 1 (INSTALLED)			2	3	7835
		†	†							3	3	7835
5815-356-3062	†						SPOOL, RIBBON: Teletype p/n 71681 (INSTALLED)			2	3	71681
		†	†							3	3	71681
7530-281-2694	†	†	†				PAPER, TELETYPEWRITER, ROLL: Fed Spec #UU-P-547, type #1, class 1, group B			1	3	78903
7530-285-2377	†						TAPE, TELETYPEWRITER: Fed Spec #UU-T-120 (INSTALLED)			1	3	80322
		†	†							2	3	80322

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL						DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
											FIGURE NO.	ITEM NO.
							AN/FGC-56, AN/FGC-58 AND AN/FGC-58X (continued)					
5815-370-0343	†	†	†				SPINDLE, PAPER: Teletype p/n 150907 (INSTALLED)			1	17	150907
5815-652-1536	†	†	†				GEAR, HELICAL: Teletype p/n 158005 (60 wpm drive for TD, INSTALLED)			1	18	158005
5815-652-1537	†	†	†				GEAR, HELICAL: Teletype p/n 158006 (60 wpm drive for TD, INSTALLED)			1	18	158006
5815-652-6484	†	†	†				GEAR, HELICAL: Teletype p/n 158003 (75 wpm drive for TD, packaged separately)			1	18	158003
5815-652-1575	†	†	†				GEAR, HELICAL: Teletype p/n 158004 (75 wpm drive for TD, packaged separately)			1	18	158004
5815-652-1574	†	†	†				GEAR, HELICAL: Teletype p/n 158001 (100 wpm drive for TD, packaged separately)			1	18	158001
5815-652-6483	†	†	†				GEAR, HELICAL: Teletype p/n 158002 (100 wpm drive for TD, packaged separately)			1	18	158002
5815-705-4997	†	†	†				GEAR, HELICAL: Teletype p/n 159278 (60 wpm drive for page printer, INSTALLED)			1	18	159278
5815-705-4998	†	†	†				GEAR, HELICAL: Teletype p/n 159279 (60 wpm drive for page printer, INSTALLED)			1	18	159279
5815-705-4999	†	†	†				GEAR, HELICAL: Teletype p/n 159281 (75 wpm drive for page printer, packaged separately)			1	18	159281
5815-706-6664	†	†	†				GEAR, HELICAL: Teletype p/n 159282 (75 wpm drive for page printer, packaged separately)			1	18	159282
5815-705-5001	†	†	†				GEAR, HELICAL: Teletype p/n 159284 (100 wpm drive for page printer, packaged separately)			1	18	159284
5815-705-5003	†	†	†				GEAR, HELICAL: Teletype p/n 159285 (100 wpm drive for page printer, packaged separately)			1	18	
5815-712-9477		†	†				GEAR, HELICAL: Teletype p/n 161783 drive for reperforator, (INSTALLED)			1	19	161783

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL						DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
											FIGURE NO.	ITEM NO
							AN/FGC-56, AN/FGC-58 AND AN/FGC-58X (continued)					
5815-705-5004	†	†	†				INSULATOR: Teletype p/n 159287 (INSTALLED)			1 2	19 19	159287 159287
5305-705-5007	†	†	†				POST: Teletype p/n 161301 (INSTALLED)			2 4	19 19	161301 161301
5815-775-6501	†	†	†				COUPLING: Teletype p/n 158020 (INSTALLED)			5	20	158020
5815-675-6405	†	†	†				SHAFT: Teletype p/n 158079 motor coupling, (INSTALLED)			1	20	158079
5815-767-2313	†	†	†				SHAFT: Teletype p/n 158013 LCXB8 coupling, (INSTALLED)			1	17	158013
3030-766-1050		†	†				BELT: Teletype p/n 161806 (INSTALLED)			1	19	161806
							RUNNING SPARE ITEMS					
7510-162-5643	†	†	†				RIBBON, TELETYPEWRITER: Fed Spec #DDD-R-311 type A, class No. 1			3	3	7835
7530-281-2694	†	†	†				PAPER, TELETYPEWRITER, ROLL: Fed Spec #UU-P-547, type #1, class 1, group B			4	3	78903
7530-285-2377	†	†	†				TAPE, TELETYPEWRITER: Fed Spec #UUT-120			2 4	3 3	80322 80322
5920-284-9156		†	†				FUSE, CARTRIDGE: Bussman p/n MDX4			5	3	F3
6240-797-4370	†	†	†				LAMP, INCANDESCENT: Fed Spec #W-L-111, trade No. 82			1	3	DS1,2,3,4
5920-810-0953	†	†	†				FUSE, CARTRIDGE: Bussman p/n MDX-6.25			5	3	F2
5920-199-3968	†	†	†				FUSE, CARTRIDGE: Bussman p/n MDL-8			5	3	F1

Delete appendix III (page 6 of C 2) and substitute new appendix III:

APPENDIX III

MAINTENANCE ALLOCATION

Section 1. INTRODUCTION

1. General

a. This appendix assigns maintenance functions to be performed on components, assemblies, and subassemblies by the lowest appropriate maintenance category.

b. Columns in the maintenance allocation chart are as follows:

(1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component, and subassemblies which are part of an assembly are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) is listed in disassembly order or alphabetical order.

(2) *Maintenance function.* This column indicates the various maintenance functions allocated to the categories.

(*a*) *Service.* To clean, to preserve, and to replenish lubricants.

(*b*) *Adjust.* To regulate periodically to prevent malfunction.

(*c*) *Inspect.* To verify serviceabiltiy and detect incipient electrical or mechanical failure by scrutiny.

(*d*) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

(*e*) *Replace.* To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.

(*f*) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

(*g*) *Align.* To adjust two or more components of an electrical system so that their functions are properly synchronized.

(*h*) *Calibrate.* To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.

(*i*) *Overhaul.* To restore an item to *completely serviceable* condition. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

(*j*) *Rebuild.* To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications, and subsequent reassembly of the item.

(3) *Operator, organizational, direct sup-*

port, general support, and depot. The symbol X indicates the categories responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Categories higher than those marked by X are authorized to perform the indicated operation.

(4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

(5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

c. Columns in the allocation of tools for maintenance functions are as follows:

(1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

(2) *Operator, organizational, direct support, general support, and depot.* The dagger (†) indicates the categories normally allocated the facility.

(3) *Tool code.* This column lists the tool code assigned.

2. Maintenance by Using Organizations

When this equipment is used by Signal services organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including general support are authorized to the organization operating this equipment.

SECTION II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	MAINTENANCE CATEGORY O/C	O	DS	GS	D	TOOLS REQUIRED	REMARKS
TELETYPEWRITER SETS AN/FGC-56, AN/FGC-58, AND AN/FGC-58X	service	X						Normal external preventive maintenance except lubrication
				X			5	Normal internal preventive maintenance including lubrication
	adjust	X						Performs range finder and motor adjustments
				X			5,6	All adjustments
	inspect	X						Visual inspection external parts
				X			5	Visual inspection internal parts
	test	X						Operational tests
				X			1,2,3	Installation tests. Performs resistance, voltage and current measurements to determine condition of circuits
					X		1,3,4,5	Conducts all tests to insure equipment returned to user meets minimum mechanical, visual, electrical and operational requirements
	replace	X						Replace running spares and type box
				X			5,6	Replace parts except cabinet pad, motor parts and reperforator feed wheel
					X		5,6	Replace all parts except cabinet pad
	repair			X			5	Repair type box, motor, and armature relay
					X		5,6	All repairs
	rebuild					X	1,3,4,5,6	

SECTION III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	MAINTENANCE CATEGORY O/C	O	DS	GS	D	TOOL CODE	REMARKS
AN/FGC-56, AN/FGC-58 & AN/FGC-58X (continued)							
MULTIMETER AN/URM-352( )/U			†	†	†	1	
TEST SET, TELETYPEWRITER TS-2/TG			†			2	
TEST SET, RELAY I-193( )			†	†	†	3	
DISTORTION TEST SET TS-383( )/GG				†	†	4	
TOOL EQUIPMENT TE-50-B			†	†	†	5	
TOOL EQUIPMENT TE-111			†	†	†	6	
NOTE: Depot may use any other type of tools & test equipment required to overhaul this equipment.							

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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USASMC (2)
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MDW (1)
Armies (2)
Corps (2)
USAC (3)
1st USASA Fld Sta (5)
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13th USASA Fld Sta (5)
14th USASA Fld Sta (5)
15th USASA Fld Sta (5)
Svc Colleges (2)
Br Svc Sch (2) except
USASESCS (25)
USAECOM (30)
USASPTCP (11)
AMS (1)
Sig Fld Maint Shops (2)
GENDEP (2)
Sig Sec GENDEP (5)
Sig Dep (12)
A Dep (2) except
LBAD (14)
SAAD (30)
TOAD (14)
FTWOAD (10)
LEAD (7)
SHAD (3)
NAAD (5)
SVAD (5)
CHAD (3)
ATAD (10)
GCAD (5)
USASTC (2)
USATC AD (2)
USATC Armor (2)
USATC Engr (2)
USATC Inf (2)
USACDCEC (10)
Army Pic Cen (2)
WRAMC (1)
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NG: None.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

TECHNICAL MANUAL

Operator and Organizational Maintenance Manual TELETYPEWRITER SETS AN/FGC-56 and AN/FGC-58

TM 11-5815-263-12
CHANGE No. 2

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *12 September 1963*

TM 11-5815-263-12, 12 April 1960, is changed as follows:

(Page 1 of C 1) Title is changed as shown above.

Note. The parenthetical reference to a previous change (example: "page 1 of C 1") indicates that pertinent material was published in that change.

Page 3. Add paragraph 1.1 after paragraph 1.

1.1. Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to your equipment. DA Pam 310-4 is an index of current technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders which are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc.) and the latest changes to and revisions of each equipment publication.

Delete paragraph 2 (page 1 of C 1) and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions in TM 38-750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. Reporting of Equipment Manual Improvements. The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended changes to DA technical manual parts lists or supply manual 7, 8, or 9) will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to: Commanding Officer, U. S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N.J. One information copy will be furnished to the individual's immediate supervisor (e.g., officer, noncommissioned officer, supervisor, etc).

Page 26. Delete paragraph 19 and substitute:

19. Scope of Maintenance

The maintenance duties assigned to the operator of the AN/FGC-56 and the AN/FGC-58 are listed below, together with a reference to the paragraphs covering the specific maintenance functions. The duties assigned do not require tools or test equipment.

a. Daily preventive maintenance checks and services (par. 22.1).

b. Weekly preventive maintenance checks and services (par. 22.2).

c. Cleaning (par. 22.3).

d. Troubleshooting (par. 24).

e. Repairs and adjustments.

(1) Replacement of typing unit paper (par. 12).

(2) Replacement of paper tape (par. 13).

(3) Replacement of typing unit ribbon (par. 14).

(4) Replacement of perforator or reperforator ribbons (par. 15).

(5) Cleaning typefaces (par. 23).

(6) Typing unit rangefinder adjustment (par. 25*a*).

(7) Reperforator rangefinder adjustment of AN/FGC–58 (par. 25*b*).

(8) Setting reperforator motor speed of AN/FGC–58 (par. 25*c*).

(9) Replacement of fuses (par. 26*a*).

(10) Replacement of lamps (par. 26*b*).

(11) Replacement of line relay (par. 26*c*).

Delete paragraphs 21 and 22 and substitute:

21. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 22 through 26 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (pars. 22.1 and 22.2) outline functions to be performed at specific intervals. These checks and services are to maintain army electronic equipment in a combat-serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the charts indicate what to check, how to check, and what the normal conditions are; the *References* column lists the illustrations, paragraphs, or manuals that contain supplementary information. If the defect cannot be remedied by the operator, higher echelon maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38–750.

22. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of the AN/FGC–56 and AN/FGC–58 are required on a daily and weekly basis.

a. Paragraph 22.1 specifies checks and services that must be accomplished daily and under the special conditions listed below when the equipment is used in transportable and mobile installations.

(1) When the equipment is initially installed.

(2) When the equipment is reinstalled after removal for any reason.

(3) At least once each week if the equipment is maintained in standby condition.

b. Paragraph 22.2 specifies *additional* checks and services that must be performed *once* each week.

Add paragraphs 22.1, 22.2, and 22.3 after paragraph 22.

22.1. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	AN/FGC–56 or AN/FGC–58.	Ascertain that the equipment has a full complement of required components and running spares.	App. I, Sec. II.
2	Exterior surfaces	Remove dirt, grease, or moisture from all exposed surfaces.	Par. 22.3.
3	Painted surfaces	Observe any trace of chips, cracks, corrosion, or mildew.	None.
4	Catches, latches, and hinges.	During cleaning operations, inspect for broken, missing or loose catches, latches, or hinges.	None.
5	Windows	Check the copy window and the perforator cover windows for breaks or scratches.	None.
6	External cords	Check for cuts, cracked or gouged jackets, fraying, bad bruises, or kinks.	None.
7	Paper supply	Inspect the installed paper roll and reserve stock to be sure that there is an adequate supply.	Par. 12.
8	Paper tape supply	Inspect the installed paper tape reels for the perforator and the reperforator (AN/FGC–58) and reserve stock to be sure that there is an adequate supply of paper tape.	Par. 13.
9	AC power cord	Connect to 115-volt, 60-cycle-per-second, single-phase power source.	None.
10	LINE-TEST switch lever	Set switch lever to TEST to isolate the equipment from the signal line. Return switch to LINE after completion of preventive maintenance routine.	Fig. 1.
11	Keyboard control knob	Set knob to K to place keyboard, perforator, and typing unit in series.	Fig. 6.
12	Copy light switch	Move switch to MAINT ON to turn copy lights on. Move switch lever to OFF to extinguish lights. Set switch to NORMAL ON to place copy lights under control of the power switch.	Fig. 6 and par. 26b.
13	Power switch lever	Move the lever to the upper position to start the motor and light the copy lamps. Press the BREAK key if motor fails to start.	Fig. 1.
14	SEND key	Press the SEND key and type test copy. All character keys should operate freely.	Fig. 8.
15	Single-double line feed lever.	Press the LINE FEED key with the single-double line feed lever at the forward position for a single line feed operation. Press the LINE FEED key with the lever in the rearward position for a double-line feed operation.	Fig. 7.
16	LOC LF key	Press and hold the key downward. Check for continuous line feed operations until the key is released.	Fig. 8.
17	LOC CR key	Press the LOC CR key to return the type box of the local teletypewriter to the left-hand margin.	Fig. 8.
18	Ribbon oscillation	Type test copy and observe the action of the ribbon. Be sure the ribbon moves upward and downward each time a character is printed. Replace ribbon if worn or frayed.	Fig. 11 and par. 14.
19	Ribbon feed	Type test copy and observe the action of the ribbon. Be sure the ribbon feeds horizontally as characters are printed.	Fig. 11.
20	Ribbon reverse	Type test copy. Be sure the direction of ribbon feeding is automatically reversed when almost the full length of ribbon is wound on one spool. Check for both directions.	Fig. 11.

22.1. Daily Preventive Maintenance Checks and Services Chart—(Continued)

Sequence No.	Item	Procedure	Reference
21	CAR RET key	Type test copy until the type box carriage is near the right-hand margin. Press the CAR RET key. The type box carriage should return to the left-hand margin in a smooth and positive manner.	Fig 8.
22	BELL (upper case S) key	Press the FIGS key and the BELL key in sequence to ring the signal bell.	Fig 8.
23	REC key	Press and release the REC key The key should remain in the lower position and the keyboard lock should be operative. The REC key should move to the upper (keyboard unlock) position only when the the SEND key is pressed.	Fig. 8.
24	Blank key	Press the blank key three successive times. The REC key should move automatically to the lower (keyboard lock) position.	Fig 8.
25	STOP (upper case H) key	Press the FIGS key and the STOP key in sequence. The motor should stop. Press the break key for approximately 3 seconds to restart motor.	Fig. 8.
26	REPT key	Press the REPT key and any character key simultaneously. The selected character will be transmitted continuously until the REPT key is released.	Fig. 8.
27	Spacebar	Press the spacebar. The type box carriage moves to the right without printing When the carriage reaches the right margin, it should return automatically with a simultaneous automatic line feed operation.	Fig. 8.
28	FIGS key	Press the FIGS key to move the type box carriage to the figures-shift position (indicated by the FIGS pointer on the type box).	Figs. 7 and 8.
29	LTRS key	Press the LTRS key to move the type box carriage to the letters-shift position.	Figs. 7 and 8.
30	Character counter	With the type box carriage at the extreme left-hand margin, type 60 characters. Check the character counter.	Fig. 6.
31	End-of-line indicator	Resume typing slowly, and carefully observe the end-of-line indicator. It should light when the 66th character is typed. Press the CAR RET key to return the type box carriage to the left-hand margin and to extinguish the indicator lamp.	Fig. 6.
32	Printed copy	Type several lines of the following test message and check the printed copy for accuracy and alignment: THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890.	Par. 26c.
33	Manual control lever	Insert a test tape in the transmitter distributor and move the manual control lever to RUN. In the K position of the keyboard control lever, transmission from the transmitter distributor should be impossible.	Fig. 9.
34	Keyboard control knob	Turn the knob to KT and type the test message given in item 32 above. Accurate printed copy and perforated tape should be produced simultaneously.	Fig. 6.
35	TAPE B. SP. key	Press the key to backspace the perforated tape. Press the key once for each backspace desired. Strike the LTRS key an equivalent number of times and examine the perforated tape. Five perforations should now appear on the perforated tape (in addition to the feed hole) at each point	Fig. 8.

22.1. Daily Preventive Maintenance Checks and Services Chart—(Continued)

Sequence No.	Item	Procedure	References
		previously moved into the punch block by the operation of the TAPE B. SP. key.	
36	Manual control lever	Insert the test tape in the transmitter distributor and move the manual control level to RUN. Transmission should occur and accurate printed copy should be produced. Return the control lever to STOP.	Par. 17c.
37	Tight tape lever	Insert a test tape in the transmitter distributor and move the manual control lever to RUN. Raise the tight tape lever manually. Transmission should stop when the lever is raised. Release the lever; transmission should resume.	Fig. 9.
38	Keyboard control knob	Turn the knob to T and type a test message. Perforated tape should be produced, but keyboard transmission should be blocked (no page copy).	Fig. 6.
39	Manual control lever	Repeat the procedure given in item 36 above.	Fig. 9.
40	Tape lid release plunger	Press the tape lid release plunger to open the tape lid. The tape lid should move to the vertical position abruptly. Press the tape lid downward to restore it to the normal operating position; it should latch securely.	Fig. 9.
	REPERFORATOR OF TELETYPEWRITER SET AN/FGC–58		
41	Reperforator power switch	Move the power switch to ON to start the reperforator motor, and to OFF to stop the motor.	Fig. 9 and par. 26a(2).
42	Reperforator ribbon	Inspect for worn or frayed ribbon; replace if required.	Par. 15.
43	Tape feedout button	Move the reperforator power switch to ON and press the tape feedout button. Tape should feed out of the reperforator with the blank symbol imprinted upon it.	Fig. 6.
44	Incoming tape	Check accuracy of received copy during operation.	Par. 26c(2).

22.2. Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Page copy	Inspect the page copy received during operation. Printed copy should be clean, clear, and sufficiently dark for easy reading.	Par. 23a.
2	Perforated tape copy	Inspect the tape copy perforated during operation. Printed copy should be clean, clear, and sufficiently dark for easy reading.	Par. 23b.
3	Reperforator tape copy (AN/FGC–58).	Same as item 2 above	Par. 23c.
4	Typing unit rangefinder	Perform the rangefinder adjustment and reset as required.	Par. 25a.
5	Reperforator rangefinder (AN/FGC–58).	Same as above	Par. 25b.

22.3. Cleaning

Inspect the exterior of the cabinet. The exterior surfaces should be clean, and free of dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean soft cloth.

b. Remove grease, fungus, and ground-in dirt from the cases; use a cloth dampened

(not wet) with cleaning compound.

c. Use a brush to remove dust or dirt from the keyboard controls (fig. 8), the copy holders, the external pushbuttons, and the switches.

d. Clean the windows of the cabinet, the control knobs and the keytops with a soft clean cloth. If dirt is difficult to remove, dampen the cloth with water. Mild soap may be used, if required, for more effective cleaning.

Page 27. Delete figure 15.

Page 28. Delete figure 16.

Page 29, paragraph 24, heading. Change "Operator's Checklist" to: Operator's Trouble Checklist.

Page 30, paragraph 24, chart. In the "Symptom" column, line 1, change "down" to: up.

Page 33, chapter 4. Add Appendix I after chapter 4.

APPENDIX I
REFERENCES

The following references are applicable to Teletypewriter Sets AN/FGC–56 and AN/FGC–58.

DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.
TM 38–750	The Army Equipment Record System and Procedures.

Appendix I (page 2 of C 1). Change to: APPENDIX III

BY ORDER OF THE SECRETARY OF THE ARMY:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army.
The Adjutant General.

Distribution:

Active Army:

DASA (6)
USASA (2)
CNGB (1)
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TSG (1)
CSigO (7)
CofT (1)
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USA CD Agcy (1)
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USAMC (5)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOGCOMD (2)
USAECOM (5)
USAMICOM (4)
USASCC (4)
MDW (1)
Armies (2)
Corps (2)
USA Corps (3)
USATC AD (2)
USATC Engr (2)
USATC Inf (2)
USATC Armor (2)
USASTC (5)
Instl (2) except
  Ft Monmouth (65)
Svc Colleges (2)
Br Svc Sch (2) except
GENDEP (OS) (2)
Sig Dep (OS) (12)
Sig Sec, GENDEP (5)
Army Dep (2) except
  Ft Worth (8)
  Lexington (12)
  Sacramento (28)
  Tobyhanna (12)
  Granite City (5)
USA Elct RD Actv, White Sands (13)
USA Elct RD Actv, Ft Huachuca (2)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
USAOSA (1)
AMS (1)
WRAMC (1)
AFIP (1)
Army Pic Cen (2)
USA Mbl Spt Cen (1)
USA Elct Mat Agcy (12)
Chicago Proc Dist (1)
USARCARIB Sig Agcy (1)
Sig Fld Maint Shop (3)
Units org under fol TOE
  (2 cy ea UNOINDC):
  11-7
  11-16
  11-57
  11-97
  11-98
  11-117
  11-155
  11-157
  11-500 AA-AC (4)
  11-557
  11-587
  11-592
  11-597
  32-56

NG: None.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

TECHNICAL MANUAL

Operator and Organizational Maintenance Manual

TELETYPEWRITER SETS AN/FGC-52 AND AN/FGC-52X

TM 11-5815-263-12
CHANGES No. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., *26 September 1960*

TM 11-5815-263-12, 12 April 1960, is changed as follows:

Page 3, paragraph 2*a*, line 4. Change "Equipment Support Agency" to:

Materiel Support Agency, ATTN: SIGMS-MLM.

Subparagraph *d*, lines 5, 6, and 7. Change to: Materiel Support Agency, ATTN: SIGMS-MLM, Fort Monmouth, N.J., with comments on appendixes I and II.

Subparagraph *e*, line 3. Change "Publication Agency" to: Materiel Support Agency, ATTN: Pub Engrng Dept.

Page 6, figure 3. Change the callouts as follows:

Below "RELAY RE-163/G" add: K2, K5.
Below "RIBBON" add: 7835.
Below "PAPER" add: 78903.
Below "TAPE" add: 80322.
Below "LAMP" add: DS1, DS2, DS3.
Below "FUSE" add: F1, F2, F3.

Add the following callout to identify the spool directly above the lamp: SPOOL 71681.

Page 34. Change "APPENDIX" to: APPENDIX II, and add APPENDIX I as follows:

APPENDIX I

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. Scope

a. This appendix lists items supplied for initial operation and for running spares. The list includes accessories, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of the equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are the basis for requisitioning.

b. The contents of the columns in the functional parts list are as follows:

(1) *Source, maintenance, and recoverability code.* Not used.

(2) *Federal stock number.* This column lists the 11-digit Federal stock number. In the absence of a Federal stock number, an interim number (for example: I8Ra 41B–45) in the "Description" column indicates that an applicable Federal stock number is being processed for assignment. In the interim, the L number may be used to identify items.

(3) *Designation by model.* A dagger (†) in this column indicates the model in which the part is used.

(4) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description on the requisition.

(5) *Unit of issue.* The unit of issue shown in this column is the supply medium by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

(6) *Expendability.* In this column, expendable items are indicated by the letter X; nonexpendable items are indicated by NX.

(7) *Quantity authorized.* Under "items comprising an operable equipment," this column lists the quantity of items supplied for the initial operation of the equipment. Under "running spares and accessory items," the quantities listed in this column are those issued initially with the equipment as spare parts. The listed quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

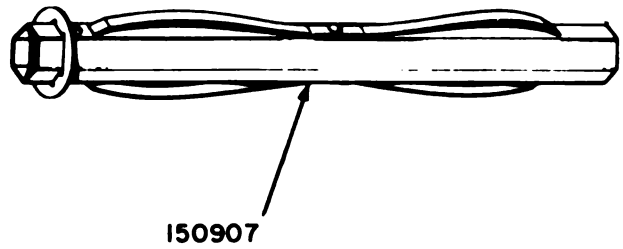
(8) *Illustrations.* The "Figure No." and "Item No." columns list illustrations which show the parts and the reference designations that are assigned to the parts.

2. References

Refer to the maintenance allocations chart (app. II) for information concerning the assignment of maintenance functions for the equipment.

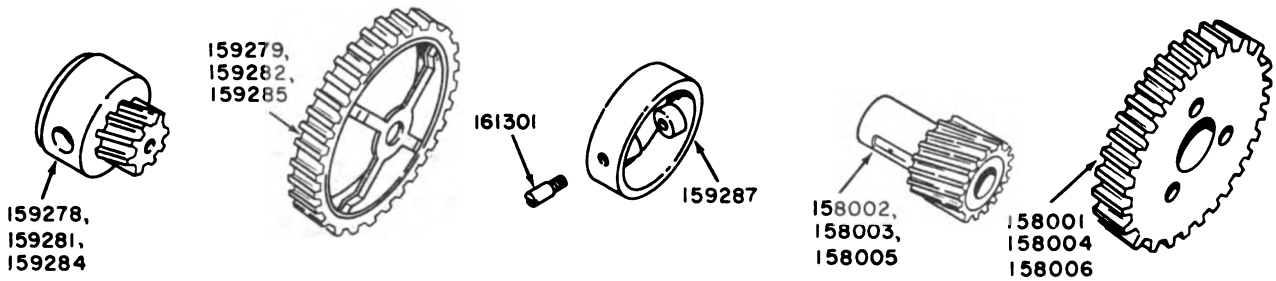
(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPENDABILITY	(7) QUANTITY AUTHORIZED	(8) ILLUSTRATIONS FIGURE NO	(9) ILLUSTRATIONS ITEM NO
		1 2	ITEMS COMPRISING AN OPERABLE EQUIPMENT					
			TELETYPEWRITER SETS AN/FGC-56 AND AN/FGC-58					
			NOTE: Model Column 1 refers to AN/FGC-56; Column 2 refers to AN/FGC-58.					
	5815-755-0903		TELETYPEWRITER SET AN/FGC-56	ea	NX		1	
	5815-754-6844		TELETYPEWRITER SET AN/FGC-58	ea	NX		1	
	Ord thru AGC	† †	TECHNICAL MANUAL TM 11-5815 263- 12	ea	X	2		
	5945-188-5631	†	RELAY, ARMATURE, RE-163/G	ea	NX	1	3	K2
		†		ea	X	2	3	K2, K5
	7510-162-5643	†	RIBBON, TELETYPEWRITER: Fed Spec No. DDD-R-311; type A class N (INSTALLED)	ea	X	2	3	7835
		†		ea	X	3	3	7835
	5815-356-3062	†	SPOOL, RIBBON: TELETYPE part No. 71681 (INSTALLED)	ea	X	2	3	71681
		†		ea	X	3	3	71681
	7530-281-2694	† †	PAPER, TELETYPEWRITER, ROLL: Fed Spec No. UU-P-547, type No. 2 (INSTALLED)	ea	X	1	3	78903
	7530-285-2377	†	TAPE, TELETYPEWRITER: Fed Spec No. UUT-120 (INSTALLED)	ea	X	1	3	80322
		†		ea	X	2	3	80322
	5815-370-0343	† †	SPINDLE, PAPER: Teletype part No. 150907 (INSTALLED)	ea	X	1	17	150907
	5815-652-1536	† †	GEAR, HELICAL: Teletype part No. 158005 (60 WPM driver for TD, installed)	ea	X	1	18	158005
	5815-652-1537	† †	GEAR, HELICAL: Teletype part No. 158006 (60 WPM driven for TD, installed)	ea	X	1	18	158006
	5815-652-6484	† †	GEAR, HELICAL: Teletype part No. 158003 (75 WPM driver for TD, Packaged Separately)	ea	X	1	18	158003
	5815-652-1575	† †	GEAR, HELICAL: Teletype part No. 158004 (75 WPM driven for TD; Packaged Separately)	ea	X	1	18	158004
	5815-652-1574	† †	GEAR, HELICAL: Teletype part No. 158001 (100 WPM driven for TD; Packaged Separately)	ea	X	1	18	158001
	5815-652-6483	† †	GEAR, HELICAL: Teletype part No. 158002 (100 WPM driver for TD, Packaged Separately)	ea	X	1	18	158002
	5815-705-4997	† †	GEAR, HELICAL: Teletype part No. 159278 (60 WPM driver for Page Printer, installed)	ea	X	1	18	159278
	5815-705-4998	† †	GEAR, HELICAL: Teletype part No. 159279 (60 WPM driven for Page Printer, installed)	ea	X	1	18	159279
	5815-705-4999	† †	GEAR, HELICAL: Teletype part No. 159281 (75 WPM driver, for Page Printer Packaged Separately)	ea	X	1	18	159281
	5815-706-6664	† †	GEAR, HELICAL: Teletype part No. 159282 (75 WPM driven, for Page Painter Packaged Separately)	ea	X	1	18	159282
	5815-705-5001	† †	GEAR, HELICAL: Teletype part No. 159284 (100 WPM driver, for Page Printer Packaged Separately)	ea	X	1	18	159284
	5815-705-5003	† †	GEAR, HELICAL: Teletype part No. 159285 (100 WPM driven for Page Printer, Packaged Separately)	ea	X	1	18	159285

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL 1	2	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPENDABILITY	(7) QUANTITY AUTHORIZED	(8) ILLUSTRATIONS FIGURE NO.	(9) ILLUSTRATIONS ITEM NO.
		1	2	AN/FGC-56; AN/FGC-58 (continued)					
			†	GEAR, HELICAL: Teletype part No. 161783 driver for reperforator, (installed) †† LOWb10-476	ea	X	1	19	161783
	5815-705-5001	†		ISOLATOR: Teletype part No. 159287 (installed)	ea	X	1	19	
			†		ea	X	2	19	159287
		†		POST: Teletype part No. 161301 (installed) †† LOWb10-11	ea	X	2	19	161301
			†		ea	X	4	19	161301
	5815-775-6501	†	†	COUPLING: Teletype part No. 158020 (installed)	ea	X	5	20	15802
		†	†	SHAFT: Teletype part No. 158079 (Motor Coupling, installed) †† LOWb10-759	ea	X	1	20	158079
	5815-767-2313	†	†	SHAFT: Teletype part No. 158013 (LCXB-8 Coupling, installed)	ea	X	1	17	158013
			†	BELT: Teletype part No. 161806 (installed) †† LOWb10-481	ea	X	1	19	161806
				RUNNING SPARES AND ACCESSORY ITEMS					
				TELETYPEWRITER SETS AN/FGC-56 AND AN/FGC-58					
	7510-162-5643	†	†	RIBBON, TELETYPEWRITER: Fed Spec No. DDD-R-311; type A, Class No. 1	ea	X	3	3	7835
	7530-285-2377	†	†	PAPER, TELETYPEWRITER, ROLL: Fed Spec No. UU-P-547, type No. 1	ea	X	4	3	78903
	7530-285-2377	†		TAPE, TELETYPEWRITER: Fed Spec No. UUT-120	ea	X	2	3	80322
			†		ea	X	4	3	80322
	5920-532-4631		†	FUSE, CARTRIDGE: Littelfuse No. 31001	ea	X	5	3	F3
	6240-797-4370	†	†	LAMP, INCANDESCENT: Fed Spec No. M-L111, trade No. 82	ea	X	1	3	DS1, 2, 3, 4
		†	†	FUSE, CARTRIDGE: Buss No. MDX 6.25 †† LOWb10-190	ea	X	5	3	F2
	5920-199-3968	†	†	FUSE, CARTRIDGE: Buss No. MDL .8	ea	X	5	3	F1



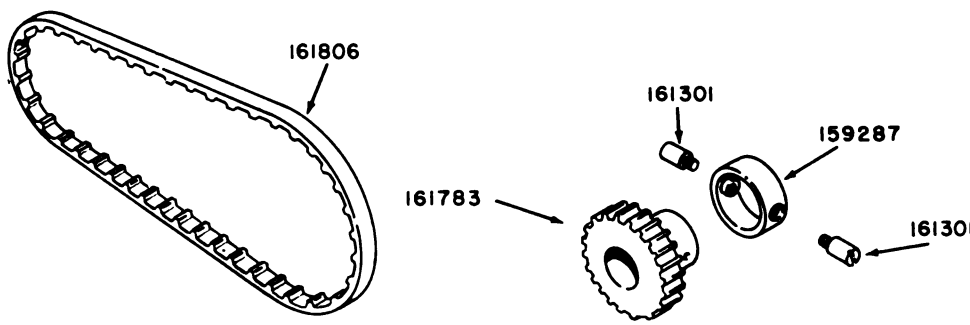
TM5815-263-12P-19

Figure 17. Paper spindle and coupling shaft.



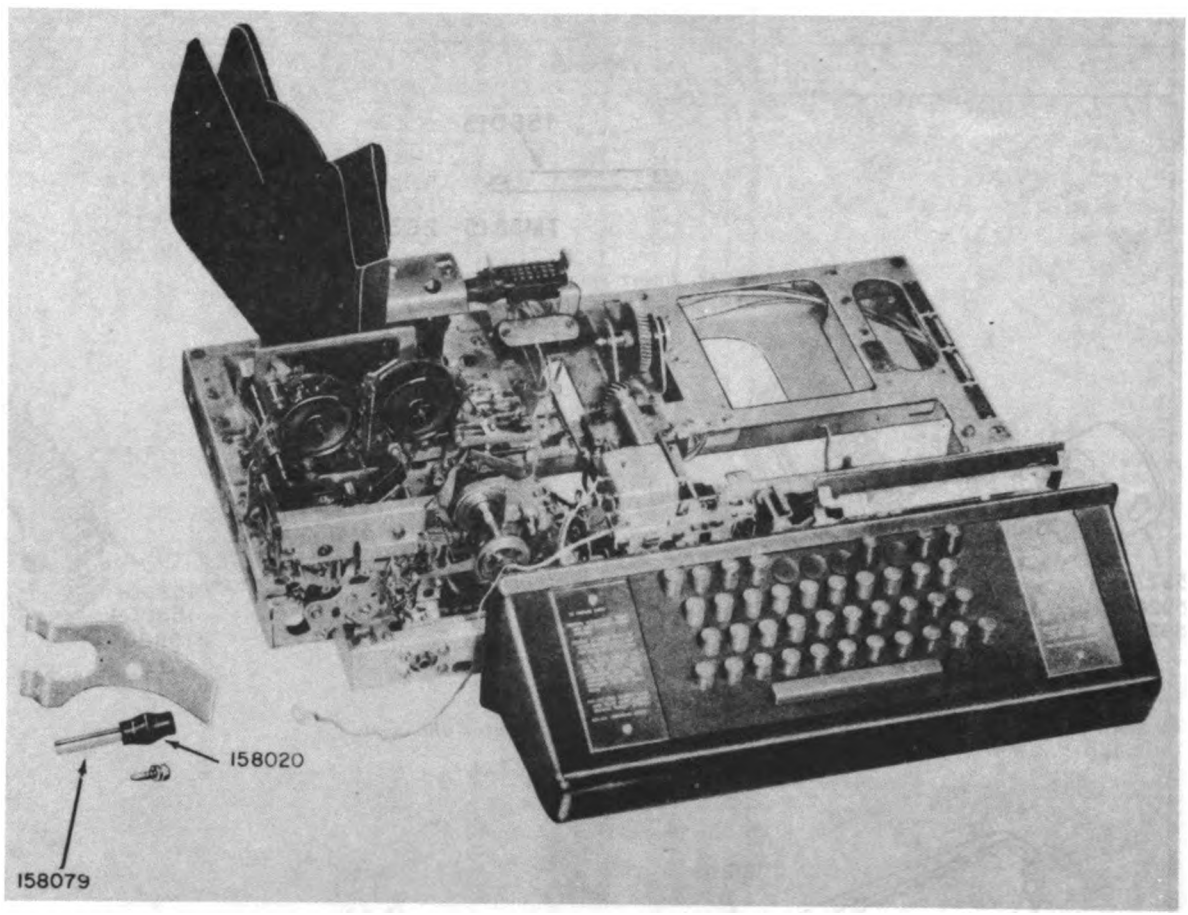
TM5815-263-12P-5

Figure 18. Gearsets, isolator and post.



TM5815-263-12P-11

Figure 19. Reperforator gear, isolator, posts and belt.



TM5815-263-12P-3

Figure 20. Motor coupling shaft and coupling.

By Order of *Wilber M. Brucker*, Secretary of the Army:

L. L. LEMNITZER,
General, United States Army,
Chief of Staff.

Official:

R. V. LEE,
Major General, United States Army,
The Adjutant General.

Distribution:

To be distributed in accordance with DA Form 12-7 requirements for TM 11 series (uncl) plus the following additional formula:

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USASA (2)	US ARADCOM Rgn (2)	11-7	11-500 (AA-AE)
CNGB (1)	MDW (1)	11-16	
Tech Stf, DA (1) except CSigO (18)	Seventh US Army (2)	11-57	11-557
	EUSA (2)	11-97	11-587
Def Atomic Spt Agcy (5)	Units organized under following TOE's (2 copies each):	11-117	11-592
US ARADCOM (2)		11-155	11-597
			33-56

NG: State AG (3).
USAR: None.
For explanation of abbreviations used, see AR 320-50.

TECHNICAL MANUAL
No. 11-5815-263-12

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *18 April 1960*

TELETYPEWRITER SETS AN/FGC-56 AND AN/FGC-58

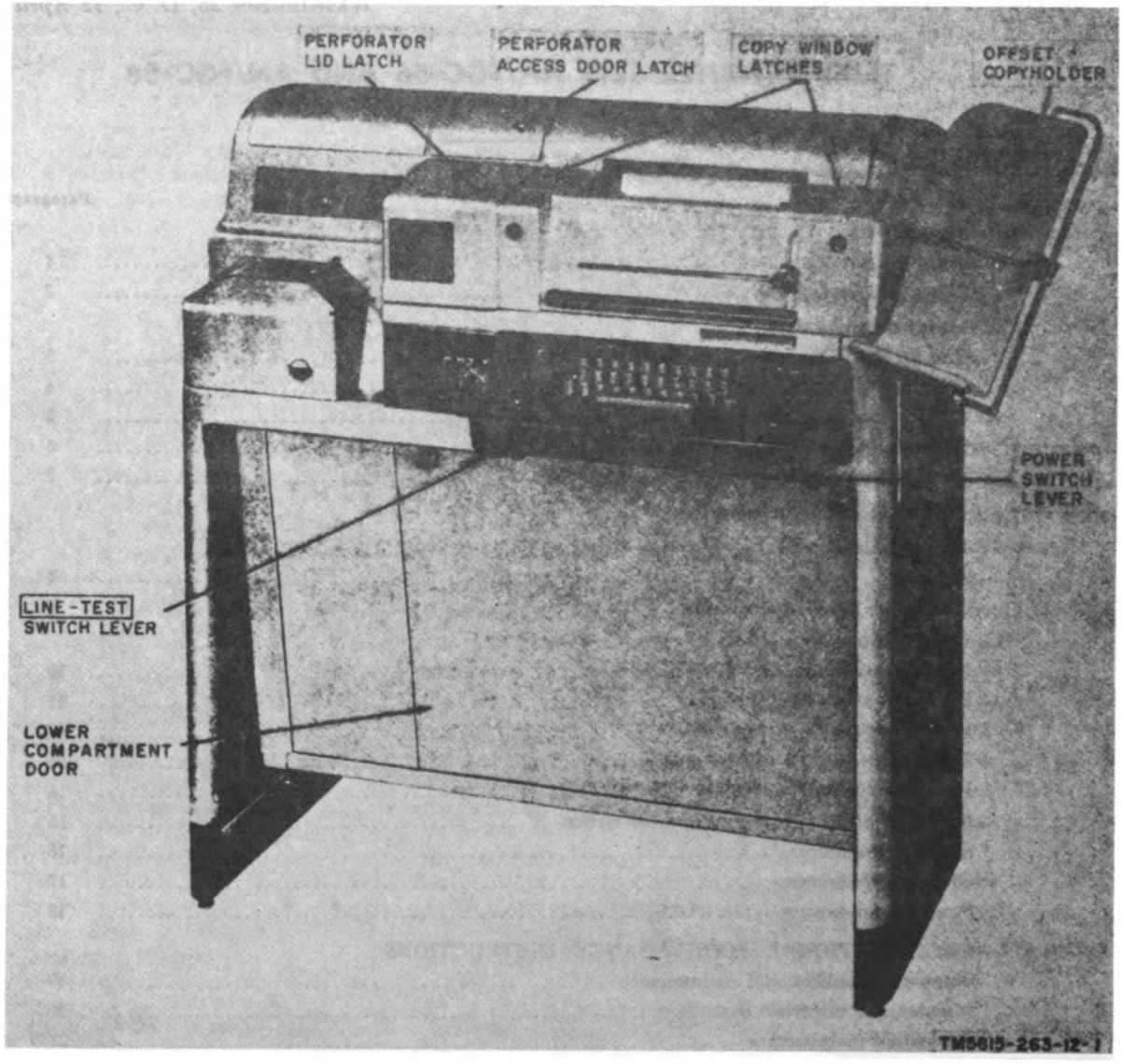


Figure 1. Teletypewriter Set AN/FGC-58, less running spares.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. Technical manual describes Teletypewriter Sets AN/FGC–56 and AN/FGC–58 and covers their operation and organizational maintenance.

b. Teletypewriter Sets AN/FGC–56 and AN/FGC–58 are identical, except that Teletypewriter Set AN/FGC–58 (fig. 1) contains a reperforator and a set of associated reperforator components that are not supplied with Teletypewriter Set AN/FGC–56. Any reference in this manual to the reperforator or its associated components applies only to Teletypewriter Set AN/FGC–58; all other information is applicable to both models.

2. Forms and Records

a. Unsatisfactory Equipment Report. Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) to the Commanding Officer, U. S. Army Signal Equipment Support Agency, Fort Monmouth, N. J., as prescribed in AR 700–38.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment), as prescribed in AR 700–58.

c. Preventive Maintenance Forms. Prepare DA Form 11–252 (Maintenance Check List for Signal Equipment (Teletypewriter)) in accordance with instructions on the form.

d. Parts List Form. Forward DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manuals 7, 8, or 9) directly to the Commanding Officer, U. S. Army Signal Equipment Support Agency, Fort Monmouth, N. J., with comments on parts listing in the Appendix.

e. Comments on Manual. Forward all other comments on this publication direct to the Commanding Officer, U. S. Army Signal Publications Agency, Fort Monmouth, N. J.

Section II. DESCRIPTION AND DATA

3. Purpose and Use

a. Purpose. Teletypewriter Sets AN/FGC–56 and AN/FGC–58 permit the transmission, monitoring, and reception of teletypewriter messages. Transmission of neutral signals is possible from either the manual operation of the keyboard or from tape processed through the transmitter distributor. Both sets are equipped to furnish a page copy of all messages transmitted or received. In addition, the AN/FGC–58 can provide a printed and perforated tape copy of all messages sent or received. Tape may be cut locally on the perforator of either set without affecting the signal line.

b. Use. The teletypewriter sets can be used in dc, carrier, or radio teletypewriter systems (fig. 2) at operating speeds of 60, 75, or 100 words per minute. An external power supply is required to furnish and to regulate the signal line current.

4. Technical Characteristics

a. Teletypewriter Sets.

Type of installation ..... Fixed; transmit and receive; dc, carrier, or radio system .....

Type of symbols ..... Standard communications.

Type of characters ..... English.

Input power requirements:

- Type of power ..... 115-volt, 60-cps, single-phase, ac.
- Power consumption ..... Approximately 700 watts.

Signalling code ..... Five-unit, start-stop, stop impulse length equals start impulse length multiplied by 1.42.

Type of signals (transmit and receive) ..... Neutral (20- or 60-ma).

Speed:

- Operations per minute .... 368, 460, or 600 opm.
- Words per minute ..... 60, 75, or 100 wpm.

Motors:

- Type ..... Synchronous.
- Speed ..... 3,600 rpm.

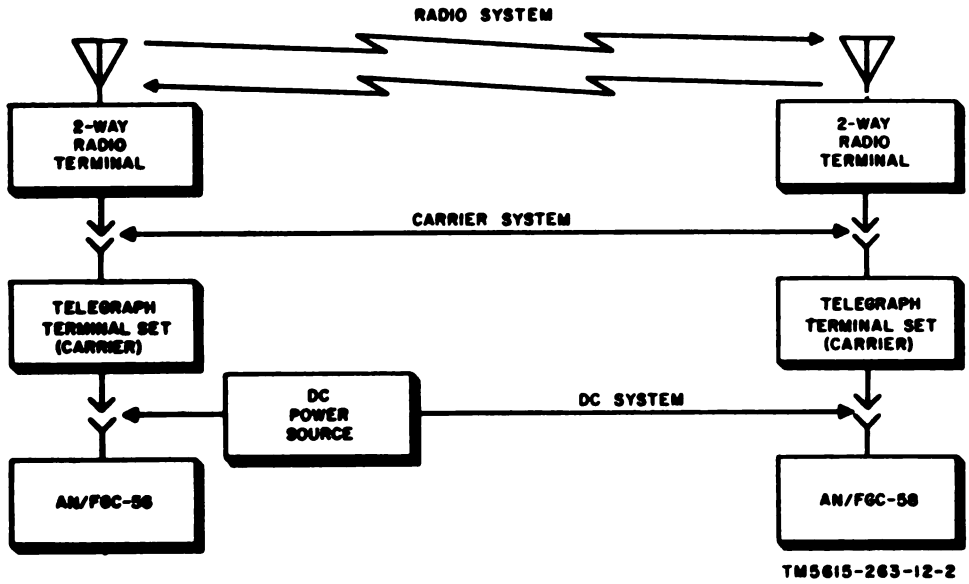


Figure 2. Typical system applications, block diagram.

Horsepower rating:
Main motor unit (LMU-12) ..... 1/12 hp.
Reperforator motor unit (LMU-3) ..... 1/20 hp.

Signal distortion tolerances:
Transmitted signals ±5% maximum.
Received signals:
Bias tolerance ..... 40%, marking or spacing.
End distortion tolerance .. 35%, marking or spacing.

Total weight (installed):
AN/FGC-56 ..... Approximately 260 lb.
AN/FGC-58 ..... Approximately 300 lb.

b. Typing Unit.

Type of paper feed ..... Friction.
Paper capacity ..... 5-inch diameter roll, 8½ inches wide. Can be adjusted to accommodate paper of lesser widths (minimum 3 inches).
Characters per line ..... Adjustable from 1 to 85, set at 72.

c. Typing Perforator.

Type of tape feed ..... Sprocket.
Method of recording ..... Message printed and perforated on 1 11/16-inch wide paper tape.
Type of perforation ..... Chadless.
Characters or feed holes per inch ..... 10.
Tape capacity ..... 9-inch roll maximum; enough for approximately 5 hours 20 minutes at 60 wpm; 3 hours 10 minutes at 100 wpm operation.

d. Transmitter Distributor.

Type of tape feed ..... Sprocket.
Tape width ..... 1 1/16 inch.

e. Typing Reperforator (AN/FGC-58 Only).

Type of tape feed ..... Sprocket.
Method of recording ..... Message printed and perforated on 1 11/16-inch wide paper tape.
Type of perforation ..... Chadless.
Characters or feed holes per inch ..... 10.
Tape capacity ..... 9-inch roll maximum (*c* above).

5. Components of Teletypewriter Sets

The components of both teletypewriter sets are listed in *a* below. The running spares supplied with each set are listed in *b* below.

a. Components.

Item	Equipment marking	Quantity		Height (in.)	Depth (in.)	Width (in.)	Unit weight (lb)
		AN/FGC-56	AN/FGC-58				
Typing unit (fig. 4)	LP59WY/AFK	1	1	9¾	15½	10½	19
Keyboard base (fig. 5)	LAK11BRE	1	1	4¾	19¾	21½	20
Typing perforator (fig. 4)	LTPE1AWA	1	1	8	6½	7½	7
Transmitter distributor (fig. 9)	LXD7	1	1	5	3⅝	7¼	6½
Base	LCXB8	1	1	4½	11⅝	7	6
Motor unit (fig. 5)	LMU12	1	1	5¾	4	8½	10
Electrical service unit (fig. 5)	LESU37	1	1	8½	5	15½	9
Relay RE-163/G (fig. 3)	RY30 (WE255A)	1	2	5¾	2⅝	2⅝	1½
Housing	160887BR	1	1	5½[a]	11⅝[a]	16⅛[a]	4⅛[a]
Cabinet (fig. 4)	LAAC214BR	1	1	39	18½	26	140
Typing reperforator (fig. 9)	LPR15AWA	.....	1	8	6½	7½	7½
Base	LRB20	.....	1	9	13½	13	12
Control panel (fig. 6)	162477	.....	1	3	1½	8½	⅛
Motor unit	LMU3	.....	1	5¾	4	8½	10
Electrical service unit (fig. 4)	LESU12	.....	1	8½	5	15½	9
Set of parts for mounting LESU12[b]	161829	.....	1	9¼[a]	.....	7[a]	1[a]
Set of parts for tape handling	161815	.....	1	5[a]	3¾[a]	2 1/16[a]	1⅜[a]
Running spares (*b* below)	.....	1 set	1 set	.....	.....	.....	.....

a. These are the dimensions and weights of the shipping package and parts contained.
b. This package is an envelope and has no appreciable depth.

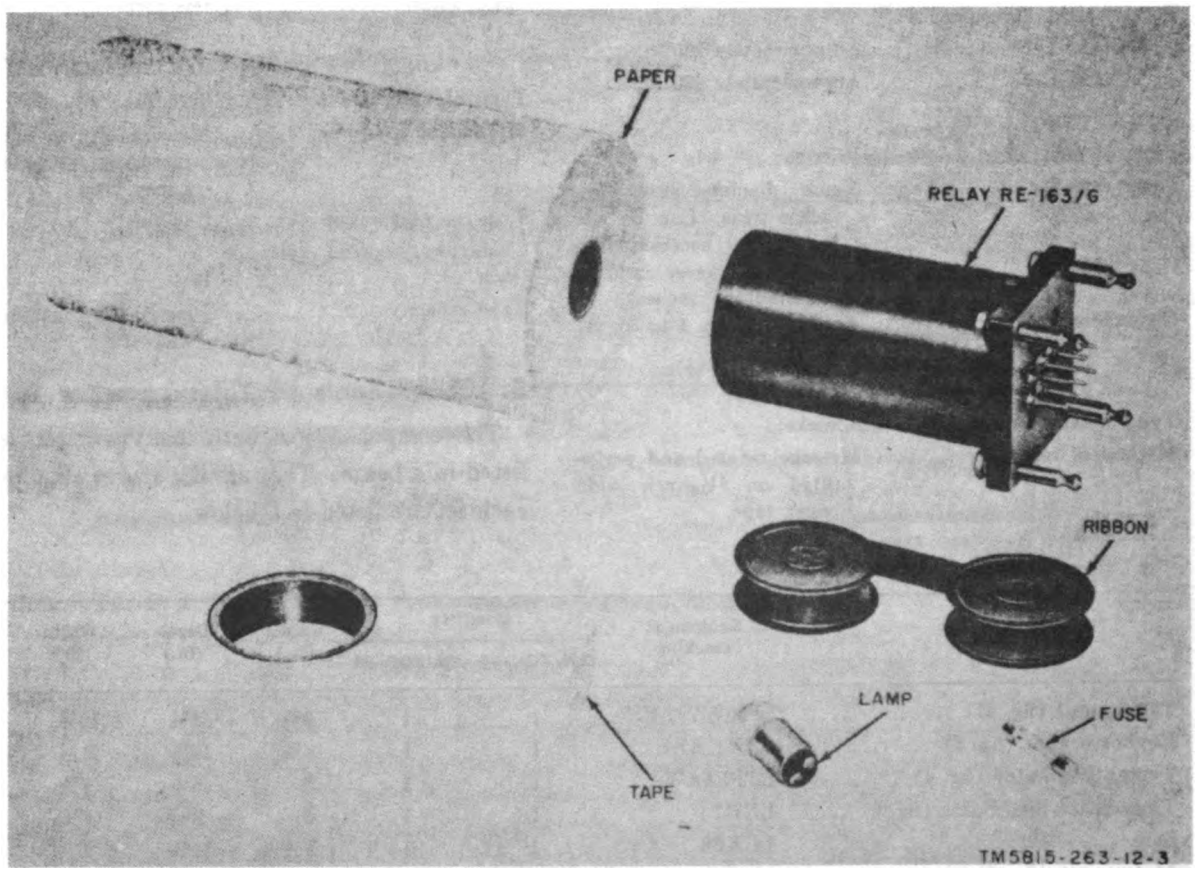


Figure 3. Running spares.

b. Running Spares (fig. 3).

Quantity	Item
3	Fuse, 8-amp, 115-v.
3	Fuse, 4-amp, 115-v.
3	Fuse, 6¼-amp, 115-v.
1	Lamp, 6-8v, 8-watts.
1	Relay RE-168/G (WECo 255A).
3	Ribbon.
4	Paper, roll, 8½ in. wide.
4	Tape, roll, 1$^{1}/_{16}$ in. wide.

6. Common Names

Common names have been assigned to the items listed below.

Item	Common name
Typing perforator LTPE1AWA	Perforator.
Typing reperforator LPR15AWA	Reperforator.
Motor unit LMU12	Main motor unit.
Motor unit LMU3	Reperforator motor unit.
Electrical service unit LESU37	Main electrical service unit.
Electrical service unit LESU12	Reperforator electrical service unit.

7. Description of Teletypewriter Sets

The AN/FGC–56 and AN/FGC–58 are identical except that the AN/FGC–58 includes a reperforator and associated components (base, control panel, electrical service unit, and a tape-handling set of parts (par. 5*a*)).

a. Cabinet. The cabinet of each set is divided into an upper and lower compartment (fig. 4). The upper compartment houses the operating components; the lower compartment is used for storage and for housing the reperforator electrical service unit of the AN/FGC–58. The upper compartment is covered by a large, hinged dome which extends completely across the cabinet. Doors in the dome (fig. 6) provide access to the operating components for replacement of paper, tape, and ribbon.

b. Typing Unit (figs. 4 and 7). The typing unit consists of the electrical and mechanical assemblies that print teletypewriter messages in page form. All parts of the typing unit are attached to a common frame assembly. The main drive shaft (not shown) is mounted across the lower rear portion of the typing unit.

c. Keyboard Base (fig. 5). The keyboard base consists of a keyboard-transmitter and tape supply container mounted on an aluminum sheet metal base. The base provides mounting facilities for the typing unit, main motor unit, and perforator. Mounted on the center of the base is a gear and shaft assembly which transfers mechanical power from the main motor unit to the typing unit, perforator, and transmitter distributor. An electrical connector, mounted behind the gear and shaft assembly, is used to connect the circuits of the keyboard base to the main electrical service unit (*g* below).

d. Perforator (figs. 4 and 9). The perforator consists of a drive assembly and printing, perforating, and backspace mechanisms mounted on a common frame. A manual tape loading control is located on the front of the perforator. Mechanical power is transferred from the main motor unit to the perforator drive shaft through the gear and shaft assembly on the keyboard base (*c* above).

e. Transmitter Distributor (fig. 9). The transmitter distributor includes sensing, distributor, and stop mechanisms, mounted on a common frame. Operating controls are located on top of the transmitter distributor, which is mounted on a base within the cabinet. Mechanical power to drive the main shaft of the transmitter distributor is obtained from the gear and shaft assembly mounted on the keyboard base (*c* above).

f. Reperforator (fig. 9). The reperforator of the AN/FGC–58 includes a drive assembly and perforating, printing, and selecting mechanisms mounted on a common frame. The reperforator, a tape container, and a drive mechanism are mounted on a base which also contains facilities for mounting the reperforator motor unit (*h*(2) below). Electrical connectors and terminal boards for connection of circuits to the reperforator are located on the upper left surface of the base.

g. Electrical Service Units.

(1) *Main electrical service unit* (fig. 5). The main electrical service unit is a sheet metal chassis on which are mounted components of the power and signal circuits. Cable assemblies extend from each end of the unit. A line-test switch is located on the upper left corner and a power switch is on the upper right corner.

(2) *Reperforator electrical service unit* (fig. 4). The reperforator electrical service unit is similar to the main electrical service unit ((1) above) except that it includes a reperforator signal bell mounted behind the line

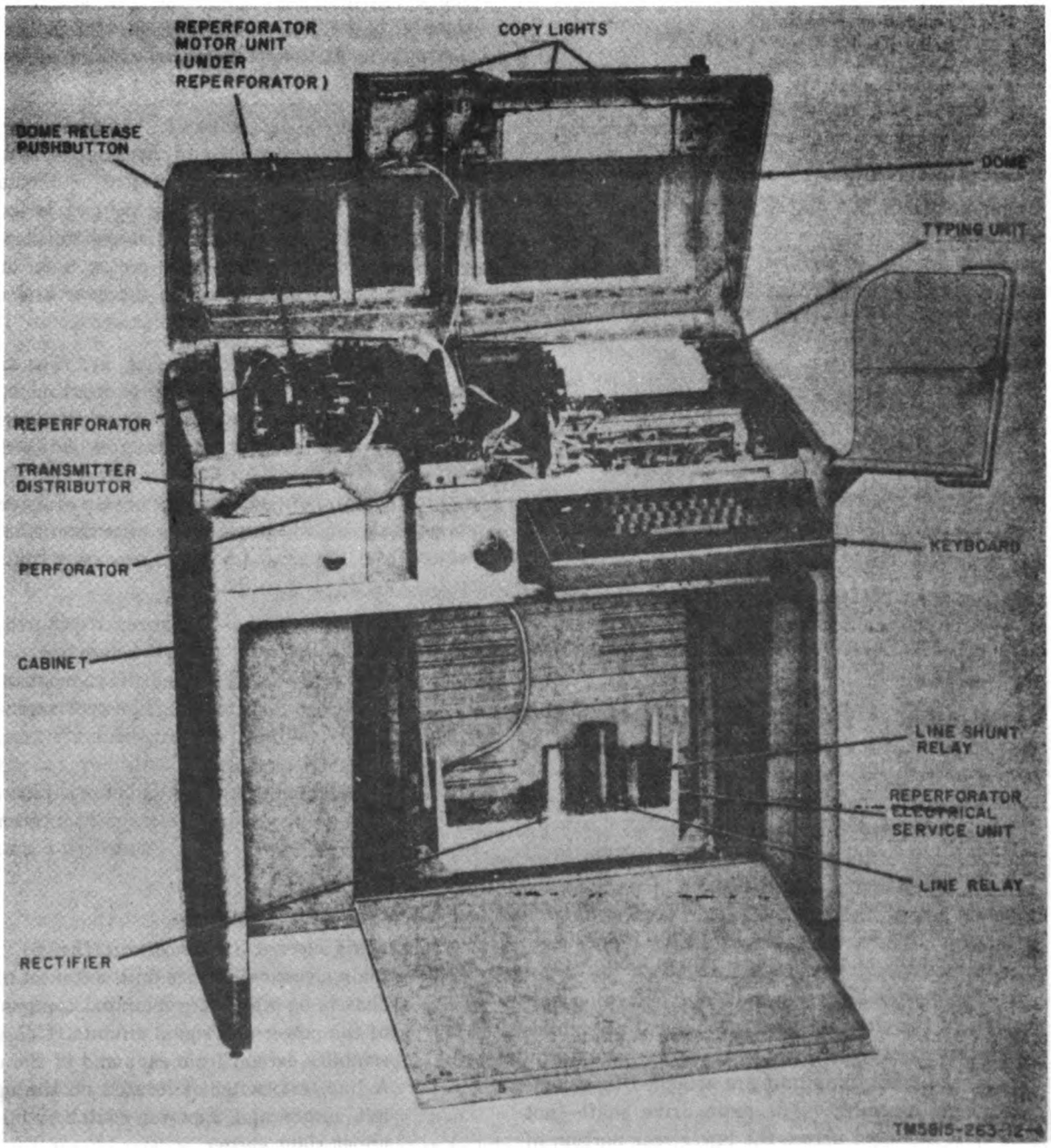


Figure 4. Teletypewriter set AN/FGC-68, interior view.

shunt relay and it does not include a power or line-test switch.

h. Motor Units.

(1) *Main motor unit* (fig. 5). The main motor unit includes a shock-mounted synchronous motor and a sheet metal motor-mounting frame. A box on the underside of the frame includes electrical components of the motor circuit. A manual overload reset button (not shown) is mounted on the right rear corner of the frame. The main motor unit provides mechanical power for all operating components of the set (except the reperforator of the AN/FGC–58).

(2) *Reperforator motor unit.* The reperforator motor unit is mounted behind the reperforator of the AN/FGC–58 (fig. 4). It is similar to the main motor unit except that it includes a less powerful motor which is smaller than the motor of the main motor unit.

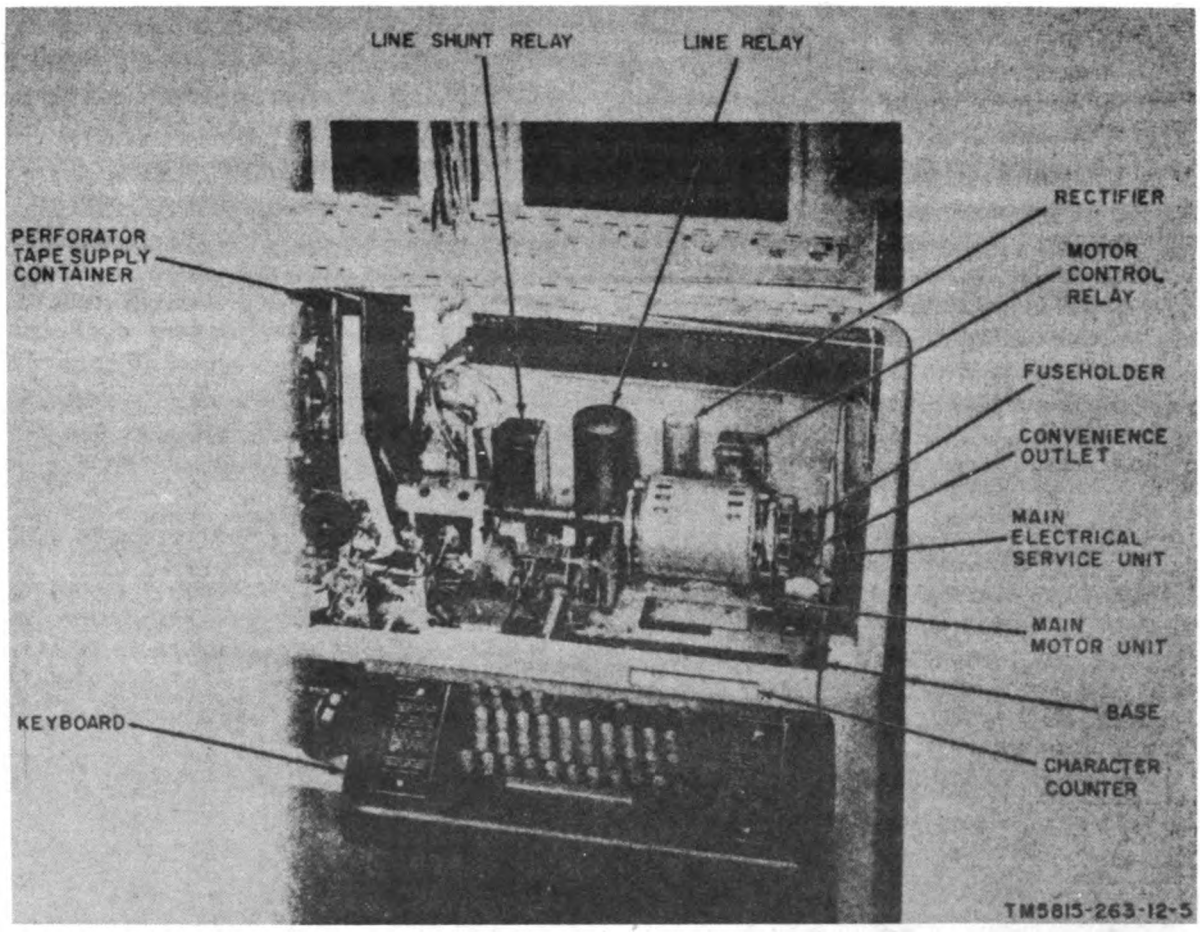


Figure 5. Interior view of upper compartment, showing keyboard base, main motor unit, and main electrical service unit.

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. OPERATOR'S CONTROLS AND INDICATORS

8. Controls

a. Cabinet.

Control	Control position	Function
Power switch lever (fig. 1).	Up	Turns power on to all units (except reperforator).
	Down	Turns power off.
LINE-TEST switch lever (fig. 1).	TEST	Permits off-line or local operation of the set.
	LINE	Connects set for normal on-line operation.
Copy light switch (fig. 6).	OFF	Prevents copy lights from being turned on.
	MAINT ON	Turns copy lights on when main power switch lever is down.
	NORMAL ON	Permits control of copy lights by power switch lever.
Tape feedout button* (fig. 6).	.....	Feeds blank tape from reperforator.
Keyboard control knob (fig. 6).	K	Permits keyboard transmission with page copy of messages sent and received. Disables transmitter distributor.
	K-T	Permits keyboard transmission and tape perforation simultaneously with a page copy of the message. Also enables transmission from the transmitter distributor.
	T	Provides for local tape perforation while simultaneously receiving messages from distant stations. Also enables transmission from the transmitter distributor.

* AN/FGC-58 only.

b. Typing Unit (fig. 7).

Control	Control position	Function
Platen handwheel.	Downward	Permits manual rotation of platen.
Single-double line feed lever.	Forward	Single line feed position.
	Rearward	Double line feed position.
Paper release lever.	Forward	Presses paper tightly against platen.
	Rearward	Releases paper.
Rangefinder knob.	.....	Adjusts selector portion of local typing unit for best performance.
Printing spring adjusting bracket.	Notch 1	Adjusts printing hammer impact for clear printing of one to three copies.
	Notch 2	Adjusts printing hammer impact for clear printing of four or more copies.
	Notch 3	Adjusts printing hammer impact for clear printing of six or more copies.

c. Keyboard (fig. 8).

Control	Function
LOC LF key	When pressed, feeds paper of *local* typing unit continuously until released.
REC key	Locks keyboard, placing *local* teletypewriter in *"receive-only"* condition.
SEND key	Unlocks keyboard to permit transmission from *local* teletypewriter.
BREAK key	When pressed, opens signal circuit. Used to start motors of teletypewriters from *"stand-by condition"* (par. 18*a*).
TAPE B. SP. key ..	Backspaces perforator tape one character for each time it is pressed; permits clearing of errors.
REPT key	When pressed simultaneously with a character key, repeats transmission of that character until REPT key is released.
LOC CR key	Returns type box carriage of *local* teletypewriter to left margin.
CAR RET key	Returns type box carriage of *all* interconnected teletypewriters to left margin. When used in conjunction with tape perforation, inserts carriage return code information on tape.

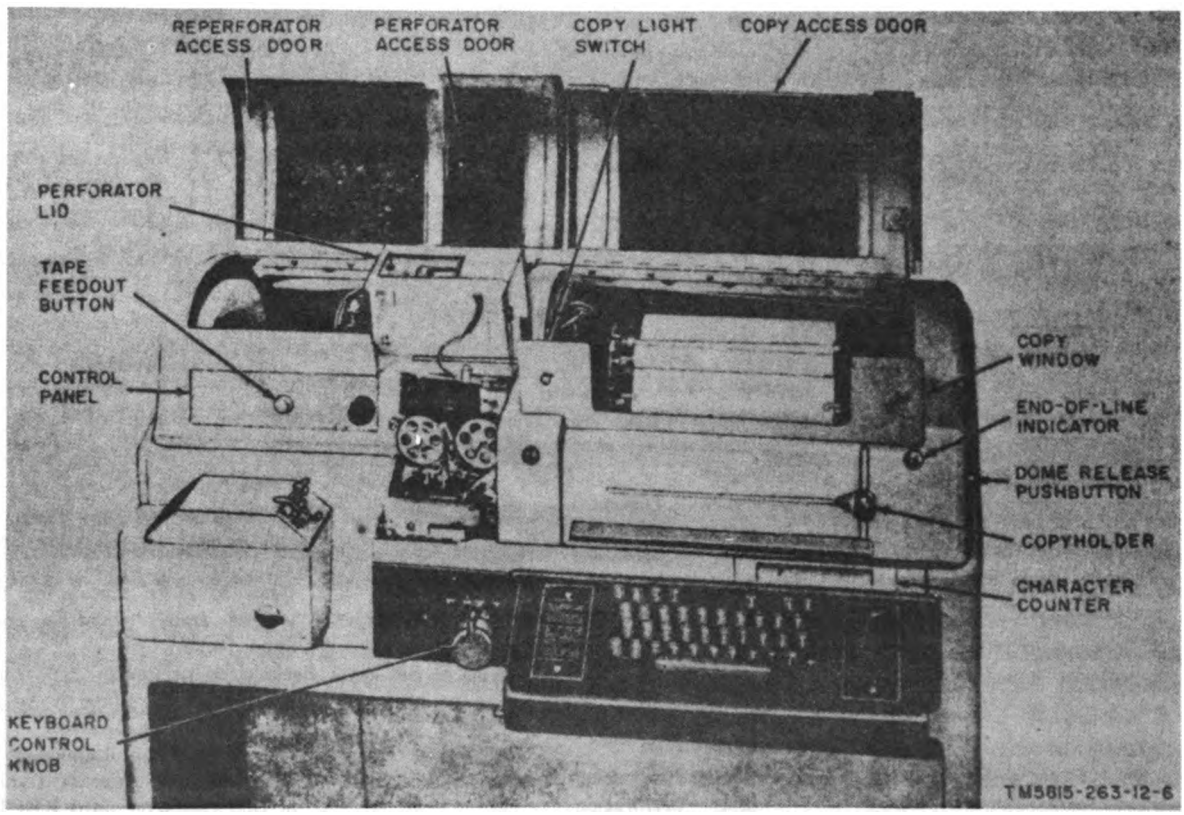


Figure 6. Cabinet controls and indicators.

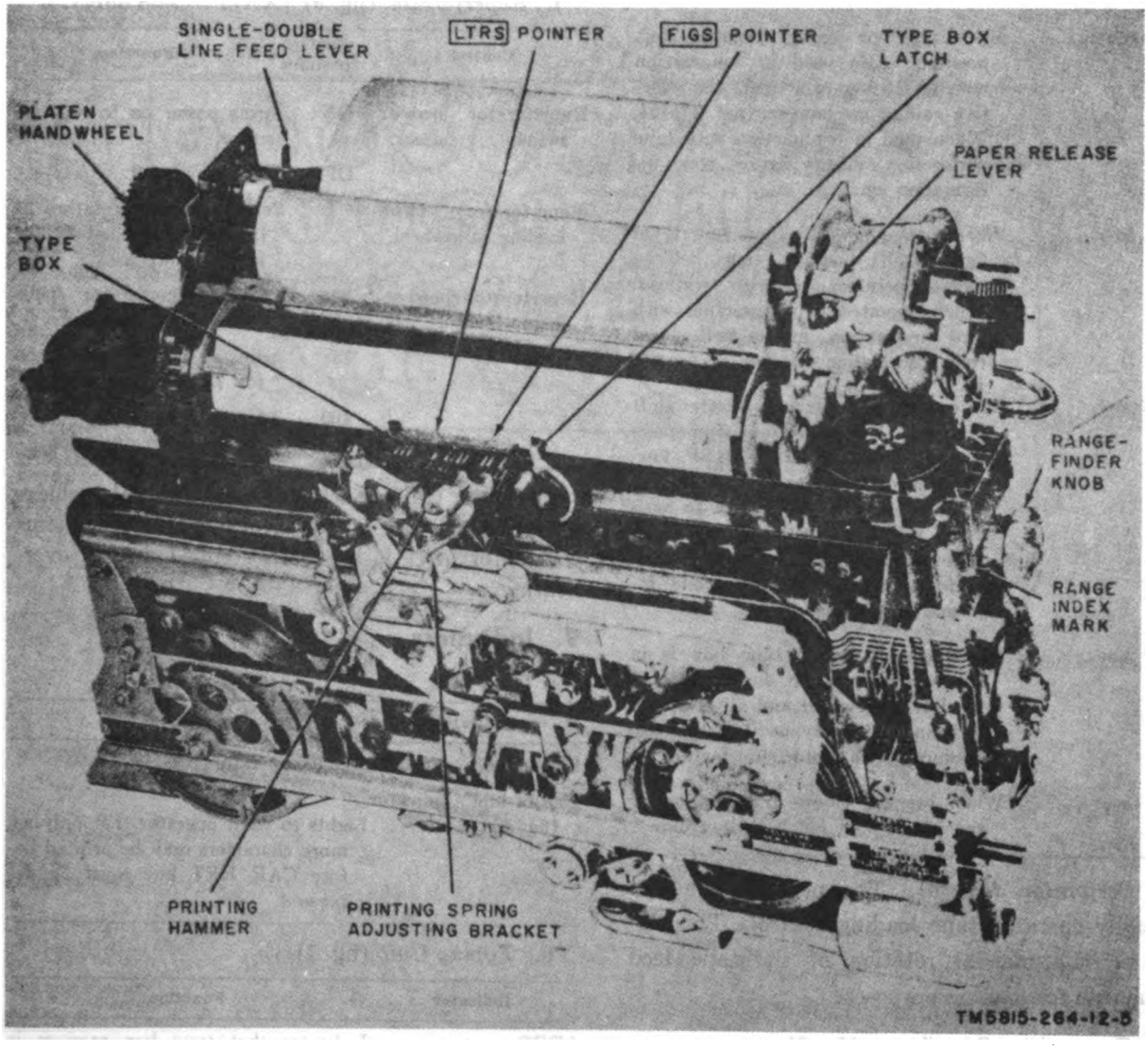


Figure 7. Typing unit controls and indicators.

Control	Function
LINE FEED key	Feeds paper of all interconnected teletypewriters either one or two line spaces, as determined by position of single-double line feed lever of *each* teletypewriter (*b* above). When used in conjunction with tape perforation; inserts line feed code information on tape.
FIGS key	Moves type box carriage to figures shift position. Also used in conjunction with LTRS key to activate the selective calling mechanism (par. 17*b*(1). When used in conjunction with tape perforation, inserts figures code information on tape.
BELL key	When pressed, while type box is in figures shift position, rings bell to signal operators at other stations. When operated in conjunction with tape perforation, inserts bell signal code information on tape.
LTRS key	Moves type box carriage to letter shift position. When pressed after positioning tape with TAPE B.SP. key, clears error from tape. Also used in conjunction with FIGS key to activate selective calling mechanism. When used in conjunction with tape perforation, inserts letters code information on tape.
STOP key	When pressed, while type box is in figures shift position, stops motor of local teletypewriter and all other interconnected teletypewriters that are equipped with motor stop feature.
Blank key	When pressed, causes transmission of special purpose blank code group.

d. Perforator (fig. 9). The perforator has a manually-operated tape loading control. This device permits manual rotation of the tape feed mechanism for loading purposes.

c. Transmitter Distributor (fig. 9).

Control	Control position	Function
Manual control lever	FREE	Permits insertion of tape.
	RUN	Automatically feeds tape and transmits message contained on tape.
	STOP	Stops tape feed and transmission.
Tape lid release plunger		Unlatches and opens tape lid.
Tight tape lever	Down	Permits transmission.
	Up	Stops transmission when tape is twisted or taut.

f. Reperforator (fig. 9) (AN/FGC–58 only).

Control	Control position	Function
Reperforator power switch	ON	Turns power on to reperforator.
	OFF	Turns power off.
Reperforator tape loading handwheel		Permits manual rotation of tape feed mechanism for loading purposes.
Reperforator speed selector lever	60	Adjusts reperforator speed for 60-wpm operation.
	75	Adjusts reperforator speed for 75-wpm operation.
	100	Adjusts reperforator speed for 100-wpm operation.

g. Motor Units. Each motor unit (fig. 5) includes an overload reset button which is used to restart the motor after it has been stopped due to overheating.

9. Indicators

a. Cabinet.

Indicator	Function
Signal bells	Signals operator.
End-of-line indicator (fig. 6)	Lights to warn operator that only six more characters may be printed before CAR RET key must be depressed.

b. Typing Unit (fig. 7).

Indicator	Function
LTRS pointer	Indicates that type box carriage is in letters shift position when pointer is aligned with printing hammer.
FIGS pointer	Indicates that type box carriage is in figures shift position when pointer is aligned with printing hammer.

c. Keyboard (fig. 6). The keyboard includes a character counter that indicates the number of characters that have been selected since the last depression of the CAR RET key.

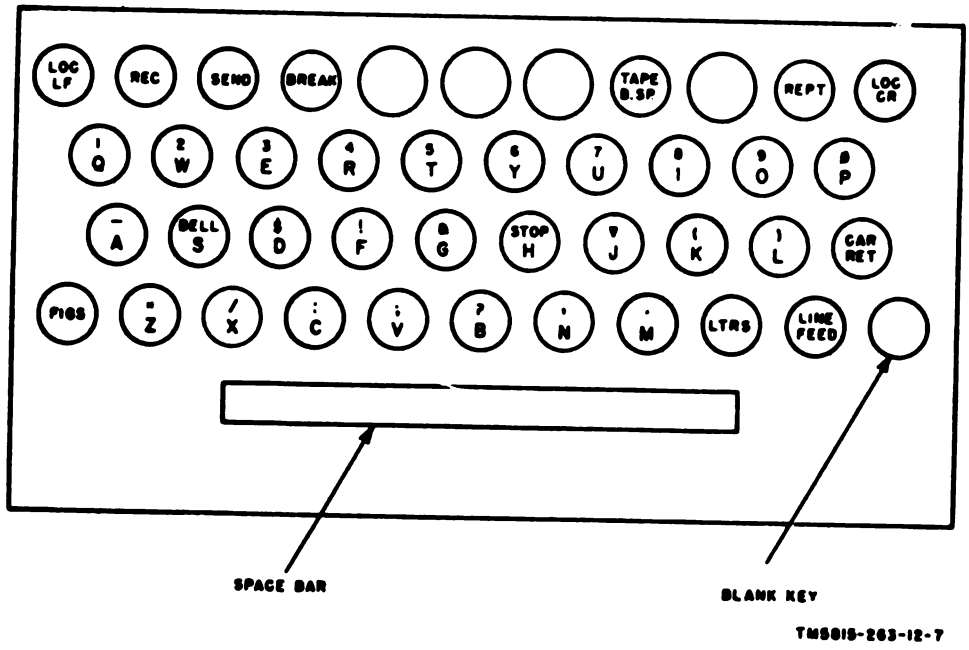


Figure 8. Keyboard controls.

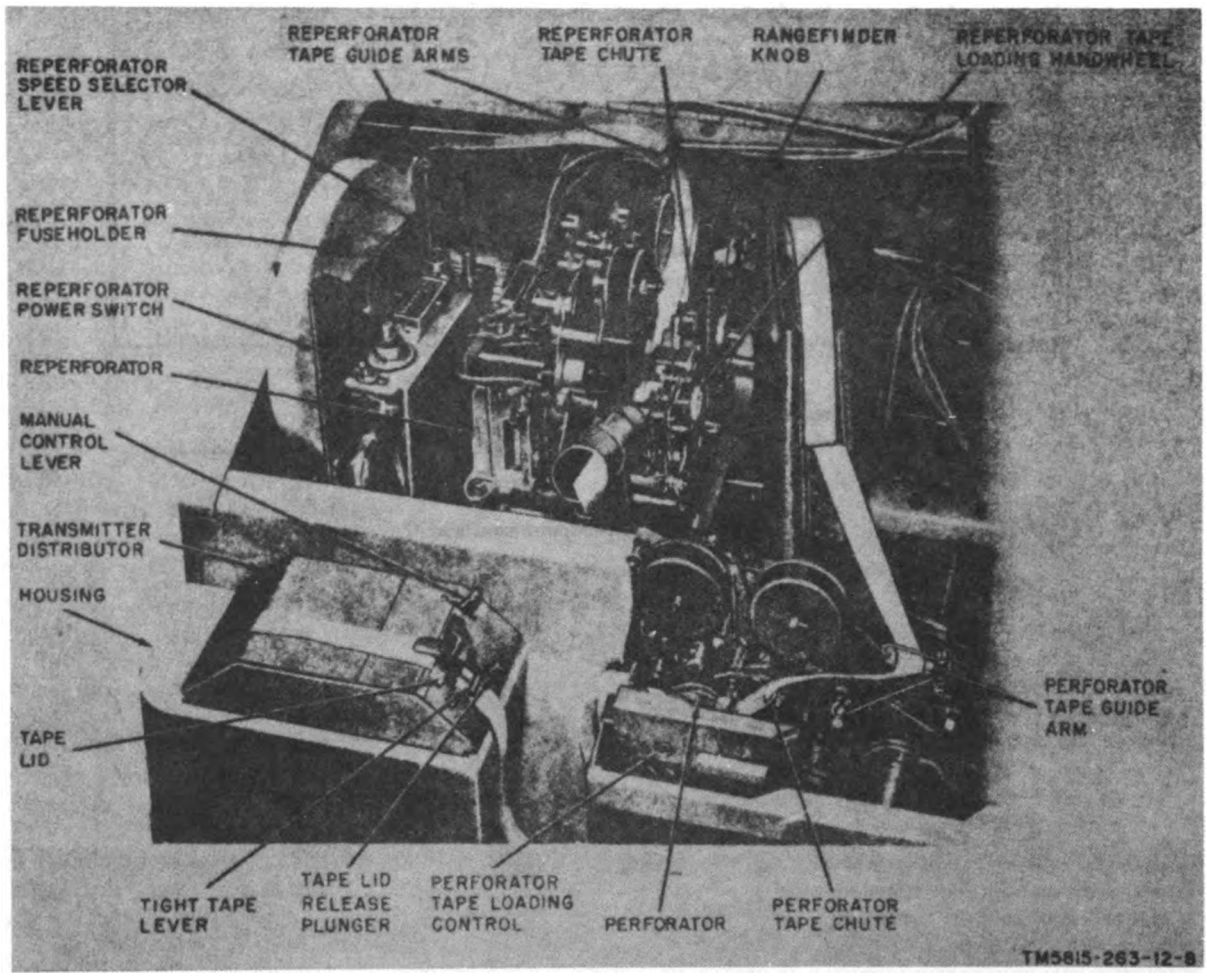


Figure 9. Perforator, transmitter distributor, and reperforator installed in cabinet.

Section II. OPERATION UNDER USUAL CONDITIONS

10. Type of Operation

a. The transmitter distributor, keyboard transmitter, and typing unit portions of the teletypewriter sets are arranged for half-duplex operation over an external signal circuit. This type of operation permits message transmission and reception (not simultaneously). Incoming and outgoing messages are printed in page form by the typing unit.

b. The reperforator of the AN/FGC–58 may be used for either of the following purposes, as determined at the time of installation:

(1) To record incoming messages from a separate receive-only signal circuit.

(2) To record all messages transmitted to and received from a half-duplex circuit (*a* above).

11. Preliminary Starting Procedure

a. See that the power connector is inserted fully into the power receptacle.

b. Check the paper and tape supply of all units. Install new rolls of paper and tape as necessary (pars. 12 and 13).

c. Check the condition of all typing ribbons. If any are frayed or badly worn, replace them (par. 14 or 15).

d. Adjust the controls and switches for the desired type of operation (par. 17*a*).

e. Check the setting of the single-double line feed lever (fig. 7). Push the copy window latches (fig. 1) toward each other and open the copy window and copy access door (fig. 6). Push the single-double line feed lever to the left and pull it forward for single line feed or push it to the rear for double line feed.

f. Position the printing spring adjusting bracket (fig. 7) to the appropriate position for printing clear copy (par. 8*b*). Close the copy access door and copy window.

12. Installing Typing Unit Paper

a. Press the dome release pushbuttons (figs. 4 and 6) and tilt the dome upward until the side supporting latches are locked in position.

b. Push the paper release lever (fig. 10) rearward, lift the paper fingers, and pull the paper from beneath the platen.

c. Lift the old roll from the equipment and remove the spindle from the core of the roll.

d. Insert the spindle into the core of the new roll of paper. Place the spindle in position to have the paper feeding from underneath the roll toward the front of the equipment (fig. 10).

e. Feed the paper over the paper straightener rod, downward around the platen, and upward between the platen and paper fingers.

f. Bring the paper upward a few inches beyond the top of the platen and straighten the paper. Lower the paper fingers against the paper and pull the paper release lever forward.

Caution: Do not disturb the ribbon or type box latch while inserting paper.

g. Close the dome. Push the two copy window latches (fig. 1) toward each other and open the copy window and copy access door (fig. 6). Hold the end of the paper forward and close the copy access door and the copy window.

13. Installing Perforator or Reperforator Tape

The following procedure applies to the perforator of both sets and to the reperforator of the AN/FGC–58. The only equipment differences that affect tape installation are—the reperforator includes two tape guide arms (fig. 9), the perforator has only one; the reperforator contains a tape loading handwheel, the perforator contains a manually-operated perforator tape loading control.

a. Push the perforator access door latch (fig. 1) to the left and tilt the perforator access door (and the reperforator access door of the AN/FGC–58) upward (fig. 6). Push the perforator lid latch (fig. 1) to the left and lift the lid (fig. 6).

b. Tear the tape at the tape chute (fig. 9) and feed the remaining tape out of the unit by turning the tape loading handwheel or the perforator tape loading control.

c. Lift the used roll of tape out of the tape supply contained and remove the spindle.

d. Place the new roll of tape on the spindle and position it in the tape supply container so that the tape feeds out from the bottom of the roll.

e. Thread the tape through the tape guide arm or arms and down into the tape chute; be careful not to twist it.

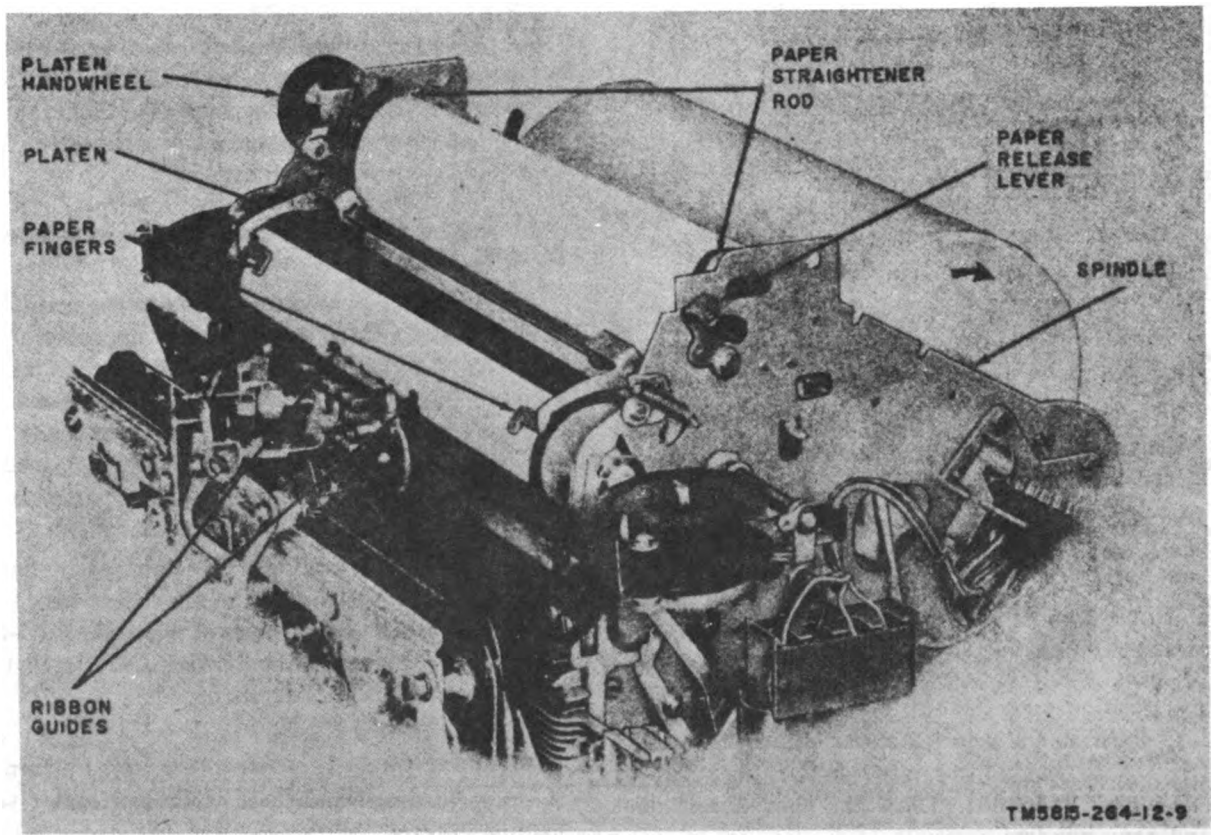


Figure 10. Paper installed in typing unit.

f. Insert the tape into the tape chute and turn the reperforator tape loading handwheel or the perforator tape loading control until the tape is visible outside the unit.

g. Close the perforator lid, the reperforator access door, then the perforator access door (fig. 6).

14. Installing Typing Unit Ribbon

a. Press the dome release pushbuttons (figs. 4 and 6) and lift the dome.

b. Lift the ribbon spool locks (figs. 11 and 12) to the unlocked (vertical) position and remove both ribbon spools from their shafts.

c. Remove the ribbon from the ribbon rollers, ribbon reverse levers, and ribbon guides.

d. Unwind and remove the old ribbon from one of the spools.

e. Hook the end of the new ribbon to the hub of the empty spool and wind the ribbon until the reversing eyelet is on the spool.

f. Replace the spools on the ribbon shafts; be sure that the spools engage the spool shaft pins (fig. 12) and that the ribbon feeds forward from the outside of the spool. Set the ribbon spool locks to the locked (horizontal) position to lock the spools in place (fig. 11).

g. Thread the ribbon around both ribbon rollers and through the slots in the ribbon reverse levers and the ribbon guides. Take up slack by turning the free spool. After slack has been taken up, check to be sure that the ribbon is threaded properly through the ribbon guides and that the reversing eyelet is between the spool and reverse lever. Also see that the type box latch has not been disengaged.

h. Turn the paper up a few inches by pressing down and turning the platen handwheel. Close the dome (par. 12*g*).

15. Installing Perforator or Reperforator Ribbon

The ribbon mechanisms of the perforator and reperforator are identical and instructions in this paragraph apply to both units. References to right and left directions are relative to the face of the spools.

a. If a perforator ribbon is to be installed, push the perforator lid latch (fig. 1) and lift the perforator lid. If a reperforator ribbon is to be installed, press the dome release pushbuttons (figs. 4 and 6) and lift the dome.

b. Move the ribbon spool locks (figs. 13 and 14) to the horizontal position and remove both spools from the shafts.

c. Remove the ribbon from the ribbon rollers, ribbon reverse levers, and ribbon guides.

d. Unwind and remove the used ribbon from one of the spools.

e. Hook the end of the new ribbon to the hub of the empty spool and wind enough ribbon onto the empty spool so that the reversing eyelet is covered by at least 5 turns of ribbon.

f. Position the spools so that the ribbon is feeding from the *top* of one spool to the *top* of the other; place them on the shafts, but do not engage the spool shaft pins.

g. Pull down enough ribbon from between the spools to enable it to pass around the ribbon rollers and beneath the type wheel.

h. Push the spools all the way on the shafts to engage the spool shaft pins (fig. 14) and turn down the spool locks to fasten the spools in place (fig. 13).

i. Thread the ribbon over the left ribbon roller, under the right ribbon roller, and through both ribbon reverse levers.

j. Thread the ribbon below the two ribbon guides located beneath the type wheel; be sure to position the ribbon between the front and rear tabs of the left ribbon guide.

k. Turn the free spool to take up slack in the ribbon. After all slack has been taken up, check to be sure that the ribbon is still properly threaded.

l. Close the perforator lid or the dome (par. 12*g*), as applicable.

16. Starting Procedures

a. Starting from Shutdown Condition. Start Teletypewriter Set AN/FGC–56 or AN/FGC–58 (except the reperforator), after it has been shut down (closed to traffic), as follows:

(1) Set the keyboard control knob to KT.

(2) Set the LINE-TEST switch lever to TEST.

(3) Set the power switch lever to the upper position.

(4) Press the SEND key.

(5) Press the LOC LF key to feed paper up.

(6) Set the LINE-TEST switch lever to LINE when ready to transmit to the line.

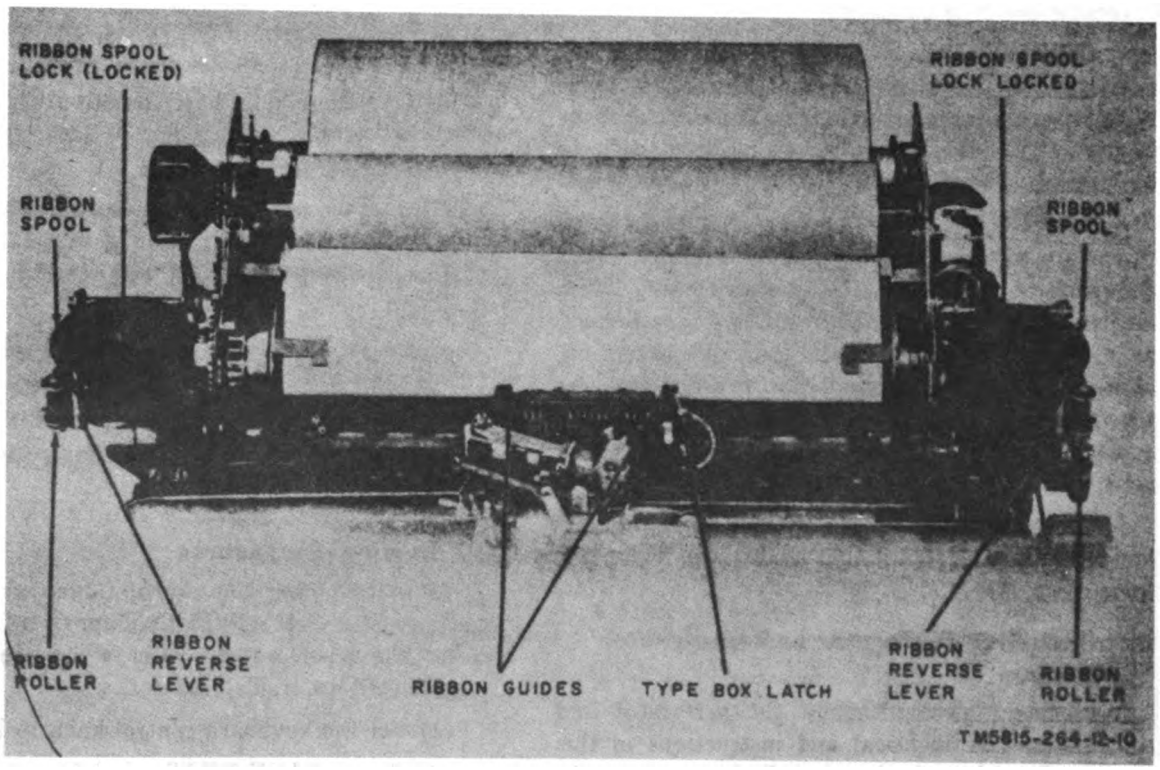


Figure 11. Typing unit ribbon assembly.

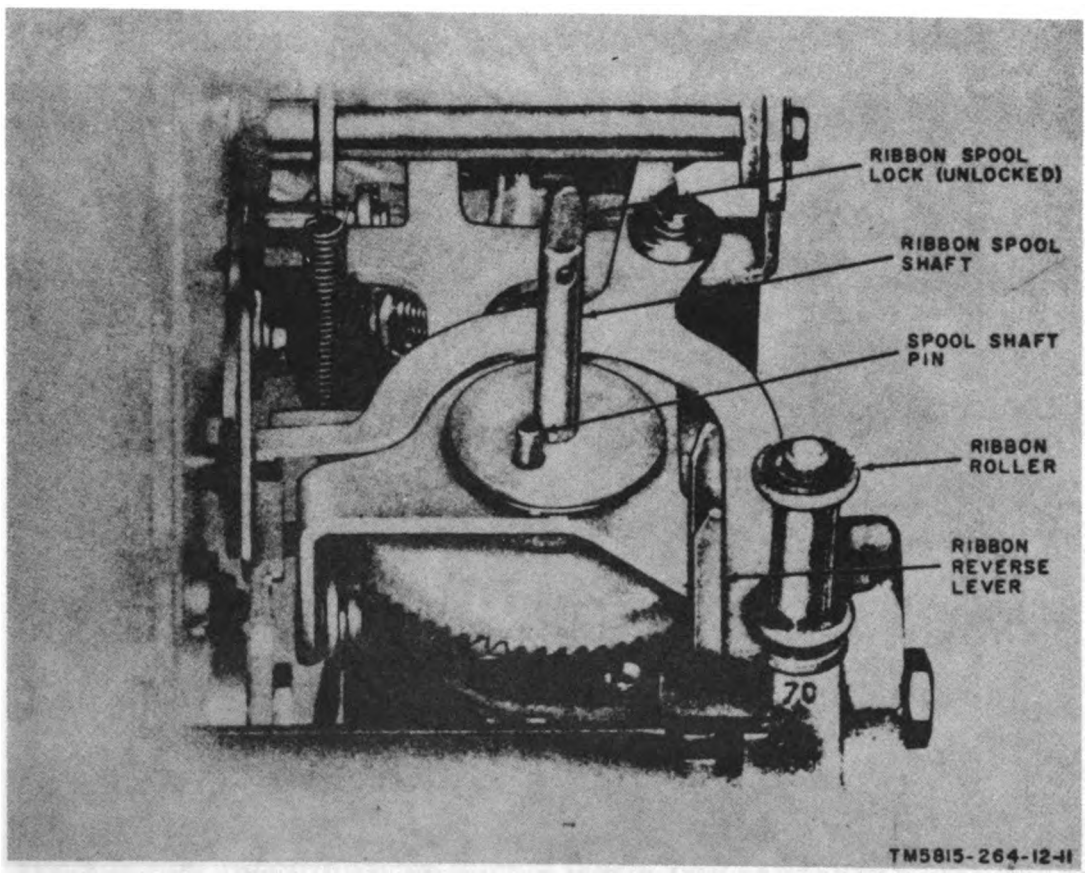


Figure 12. Typing unit ribbon spool assembly.

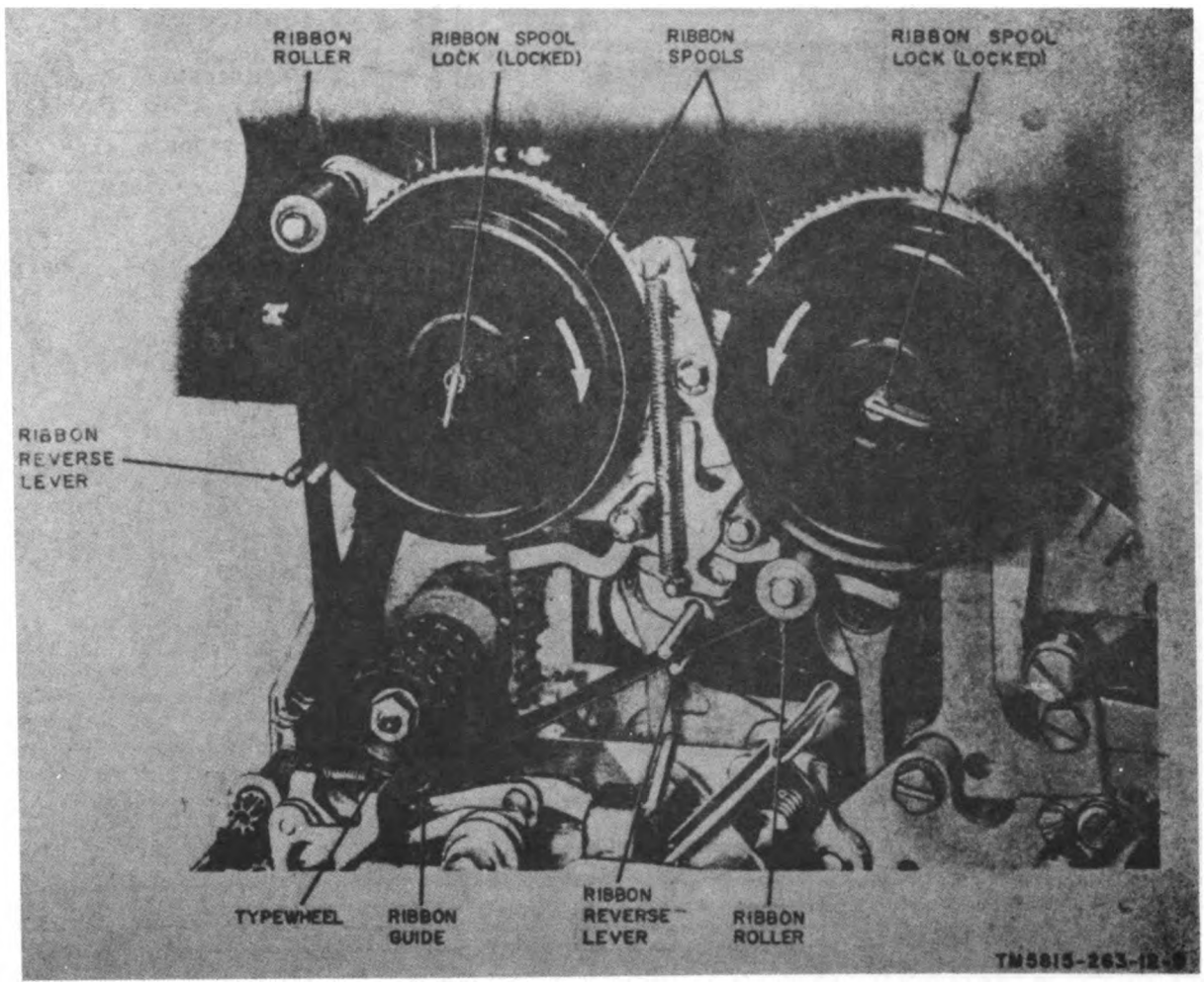


Figure 13. Perforator ribbon assembly.

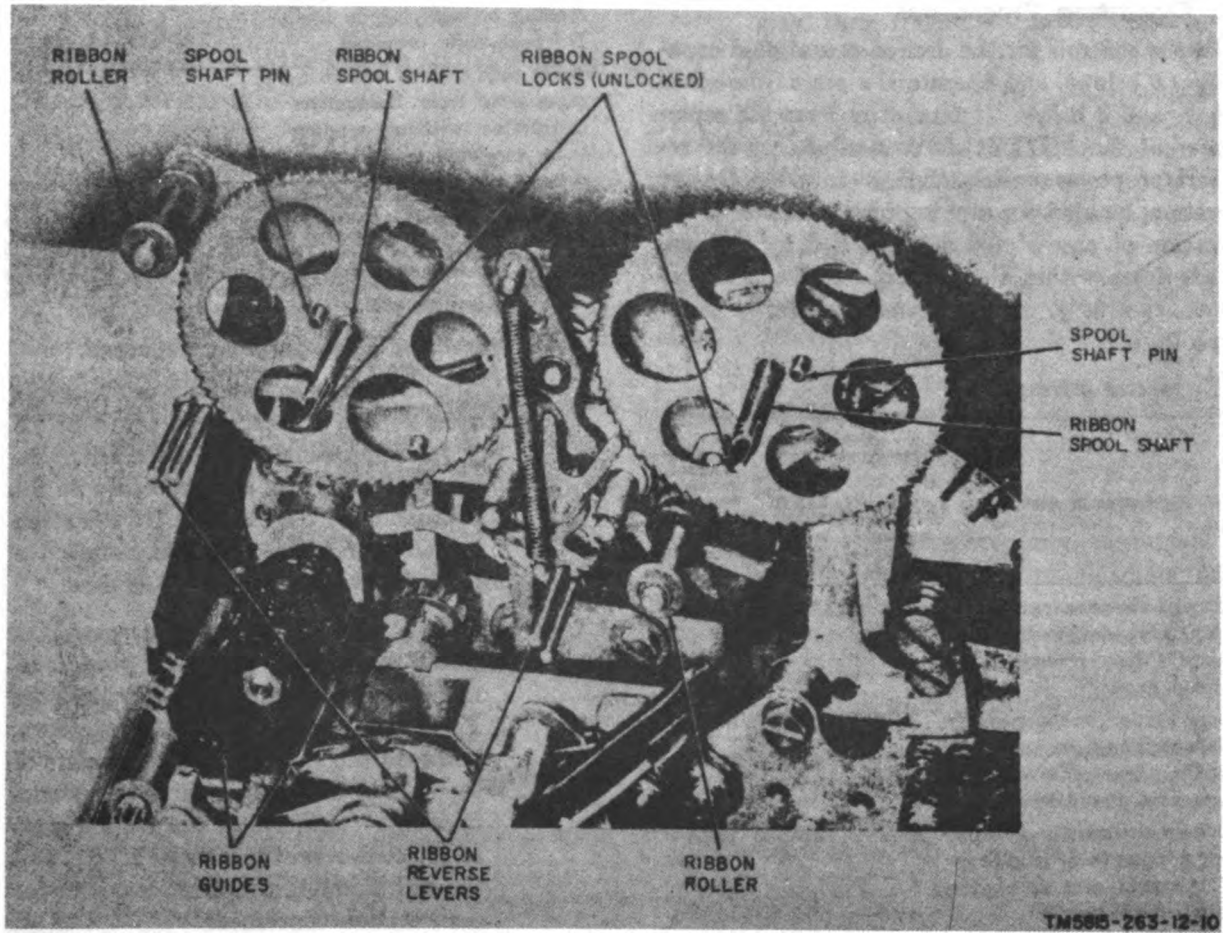


Figure 14. Perforator ribbon spool assembly.

b. Starting from Standby Condition. Start the set (except the reperforator of the AN/FGC–58) from the standby condition (par. 18*a*) as follows:

(1) Check to see that the power switch lever is in the upper position.

(2) Press and release the BREAK key.

c. Starting AN/FGC–58 Reperforator. Start the reperforator as follows:

(1) Push the perforator access door latch (fig. 1) to the left and lift the perforator and reperforator access doors.

(2) Set the reperforator power switch to ON, then close the doors.

17. Operating Procedures

Set the controls for the desired operational capability (*a* below) and operate the set as described in *b*, *c*, and *d* below. If tape copy from the reperforator of the AN/FGC–58 is desired, set the reperforator power switch (fig. 9) to ON. During operation, be alert for any improper reaction to the operation of any of the controls and for unusual sounds from within the cabinet. If the teletypewriter set fails to operate properly, refer to paragraph 24.

a. Control Settings.

Operation desired	Control position		
	Keyboard control knob (fig. 6)	LINE-TEST switch lever (fig. 1)	Manual control lever of transmitter distributor (fig. 9)
Send and receive messages, using keyboard and typing unit. Copy presented as printed page.	K	LINE	STOP
Prepare tape on perforator while sending from keyboard. Obtain page copies of messages sent and received.	K–T	LINE	STOP
Send from transmitter distributor; provide local page copy of messages sent by transmitter distributor.	K–T	LINE	RUN[a]
Prepare tape on perforator from keyboard (without producing page copy) while transmitting from transmitter distributor. Obtain page copy of messages sent by transmitter distributor and of messages received from line.	T	LINE	RUN[a]
Prepare page copy on typing unit "off-line" from keyboard.	K	TEST[b]	STOP
Prepare tape locally "off-line," with page copy monitoring on typing unit.	K–T	TEST[b]	STOP
Prepare page copy on typing unit of messages sent over local test circuit from either transmitter distributor or keyboard.	K–T	TEST[b]	RUN[a]
Prepare tape locally without sending or receiving on line. No page copy provided.	T	TEST	STOP
Prepare page copy of tape messages sent from transmitter distributor without sending to or receiving from line.	T	TEST	RUN[a]

[a] Tape must first be loaded in transmitter distributor before the control is placed to this position (*c* below).

[b] If reperforator of AN/FGC–58 is used for half-duplex operation (par. 10*b*(2)), local tape copy is obtained from reperforator if reperforator power switch (fig. 9) is set to ON. If connected to separate receive-only circuit (par. 10*b*(1)), reperforator cannot be used for preparation of local copy.

b. Transmitting Messages from Keyboard.

(1) If the message is to be sent to all teletypewriters in the circuit, press the BREAK key for approximately two seconds, then press the SEND key and proceed with the transmission of the message. If the selective calling feature is in use, follow the procedure given in *(a)* and *(b)* below.

(a) Press the FIGS key twice, then the LTRS key twice, and send *your local* call directing characters. Then press the FIGS key twice, the LTRS key twice, and send the call directing characters of the station that is to receive this transmission. If more than one station is to be selected, repeat the FIGS, LTRS, and the call directing character sequence for each station concerned.

(b) Upon completion of all transmission to the selected station(s), press to restore all teletypewriter sets in the circuit to the original condition.

(2) If the keyboard on the local machine locks while a message is being transmitted, it is usually because another station on the line

has sent a BREAK signal; this causes the local equipment to be placed in the "receive-only" condition. Wait for an explanation from the sending station. When notified by the interrupting station to resume sending, press the SEND key and proceed with message transmission. If no communication is received within a reasonable time after the keyboard locks, press the SEND key and proceed with the message.

(3) The teletypewriter sets are equipped with an automatic carriage return and line feed mechanism which operates automatically when the type box carriage of the local typing unit reaches the right limit of a typed line. This arrangement prevents overprinting if the sending station neglects to transmit the carriage return and line feed signals.

Note. When sending messages, *be sure to press the CAR RET and LINE FEED keys at the end of each line* so that those signals will be sent as part of the message. The automatic carriage return-line feed mechanism *does not* send those signals when it operates.

c. Transmitting Messages from Transmitter Distributor. Set the manual control lever of the transmitter distributor (fig. 9) to FREE and feed the tape under the tight tape lever and tape lid. Set the keyboard control knob to T (or K–T if the keyboard is not to be used for tape perforation) and set the manual control lever to RUN to transmit the message. Should the tape become twisted or snarled, move the manual control lever to STOP and press the tape lid release plunger to open the tape lid. Straighten the tape, place it in position and close the tape lid. Reset the manual control lever to RUN.

d. Preparation of Message Tapes.

Note. Each time the character counter indicates a full line of typing, press the CAR RET and LINE FEED keys to prevent overprinting when the tape message is sent to a typing unit.

(1) Set the controls for the operating condition desired (*a* above) and type the message with the keyboard. After the message tape has been prepared, press the LTRS key until several LTRS codes appear on the tape outside the perforator. Tear off the tape.

(2) Should an error occur while preparing the message tape, press the TAPE B.SP. key repeatedly until the error is over the punch pins in the perforator. Delete the error and all the characters that follow by pressing the LTRS key the same number of times the TAPE B.SP. key was pressed, or until fresh tape appears over the punch pins, then retype the deleted portion of the message.

Note. The number of characters deleted from the tape will still be registered on the character counter An equal number of characters may be added after the end-of-line indicator/amp lights.

18. Stopping Procedures

Use the applicable procedure described below to stop the teletypewriter set.

a. Standby Condition. To place all interconnected teletypewriter sets equipped with the motor stop feature into a "standby condition," press the FIGS key and then the STOP key. When in this condition, the motors of all of the teletypewriters are stopped by the motor stop mechanism, and the operator at any station may start all of the interconnected teletypewriters by pressing and releasing the BREAK key. The reperforator of tne AN/FGC–58 does not include the motor stop feature and cannot be placed in a stand-by condition.

b. Complete Shut Down. To completely close down the teletypewriter set, move the power switch lever to the lower position. Set the reperforator power switch of the AN/FGC–58 to OFF

CHAPTER 3

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

19. Scope of Organizational Maintenance

a. The following is a list of duties normally performed by the operator of Teletypewriter Sets AN/FGC–56 and AN/FGC–58. These procedures do not require special tools or test equipment.

b. Maintenance for the teletypewriter sets consists of the following:

(1) Preventive maintenance (par. 21).

(2) Visual inspection (par. 22).

(3) Replacement of paper, tape, and ribbon (pars. 12 through 15).

(4) Cleaning type faces (par. 23).

(5) Operator's corrective maintenance (par. 24).

(6) Replacement of parts (par. 26).

20. Maintenance Materials Required

The maintenance materials listed below are the only items required for organizational maintenance.

a. Brush, typewriter, toothbrush style (Federal stock No. 7510–178–8320).

b. Lint-free cleaning cloth.

c. Cleaning Compound (Federal stock No. 7930–395–9542) (used to clean the outside covers of the equipment).

Warning: **Prolonged breathing of cleaning compound fumes is dangerous. Be sure adequate ventilation is provided. Cleaning compound is flammable; do not use near a flame.**

21. Preventive Maintennce

a. DA Form 11–252. DA Form 11–252 (figs. 15 and 16) is the preventive maintenance checklist to be used. Items not applicable to organizational maintenance of the set are lined out. References in the ITEM block are to items in this paragraph which contain additional maintenance information pertinent to the particular item. Follow the instructions on the form.

b. Items. The information in the chart below is supplementary to DA Form 11–252. The item numbers correspond to the ITEM numbers on the form.

Item	Maintenance Procedure
1	Observe, in particular, the spacing between letters, line feeding, shifting and unshifting, printing of errors, margin spacing, carriage return, and ribbon reversing.
2	A clean dry cloth is normally used for cleaning the exterior of the equipment. If this is not satisfactory, moisten a cloth with cleaning compound (par. 20 *b*) and clean the parts; then wipe the parts with a clean dry cloth.

22. Visual Inspection

a. Check the condition of all ribbons once a day. If the edges are frayed, inspect for proper threading and placement in the ribbon guides.

b. Check the clearness of the typed copy produced by the typing unit and perforator (and reperforator of AN/FGC–58) once a day. If the printing of any of these units is blurred or smudged, clean the typefaces (par. 23).

c. Check the condition of the keys on the keyboard once a week. If the lettering is hidden by dirt, clean the tops of the keys with a water-moistened cloth and wipe dry. If any keys are broken or missing, notify higher echelon maintenance personnel.

d. Check for dust and dirt on all external parts of the set. Clean by carefully wiping with a soft, dry, lint-free cloth. Never use an airhose for this cleaning operation.

23. Cleaning Typefaces

Clean the typefaces of the type box in the typing unit and the type wheel in the perforator (and reperforator of AN/FGC–58) as follows:

a. Cleaning Typing Unit Type Box.

(1) Set the power switch lever (fig. 1) to the lower position.

(2) Press the dome release pushbuttons on either side of the cabinet (figs. 4 and 6) and tilt the dome upward.

(3) Unlock the type box latch (fig. 7) by moving it to the right.

MAINTENANCE CHECK LIST FOR SIGNAL EQUIPMENT
TELETYPEWRITER
(AR 750-625)

EQUIPMENT NOMENCLATURE

TELETYPEWRITER SET AN/FGC-56

EQUIPMENT SERIAL NUMBER

105

INSTRUCTIONS

This form may be used for a period of one month by using the correct dates and weeks of the month. It is to be used as a Preventive Maintenance check list for Signal equipment in actual use, or for a check on equipment prior to issue.

1. For detailed Preventive Maintenance instructions see:
   a. The Technical Manual *(in TM 11 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   b. The Supply Bulletin *(SB 11-100 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   c. The Department of the Army Lubrication Order. *(See DA Pamphlet Number 310-4)*

2. The following action will be taken by either the Communications Officer/ Chief for 1st echelon, or the Inspector for higher echelon:
   a. Enter Equipment Nomenclature and Serial Number.
   b. Strike out items that do not apply to the equipment.

3. Operator/Inspector will enter in the columns entitled CONDITION, on the proper line, a notation regarding the condition, using symbols specified under LEGEND.

4. After operator completes each daily inspection he will initial over the appropriate dates under "Daily Condition for Month", then return form to his supervisor.

FOLD

TYPE OF INSPECTION

OPERATOR	2/3 ECHELON	DATE	SIGNATURE
✓		6 FEB 1960	PFC Wm O'Connell

U S GOVERNMENT PRINTING OFFICE 1957 O - 427793

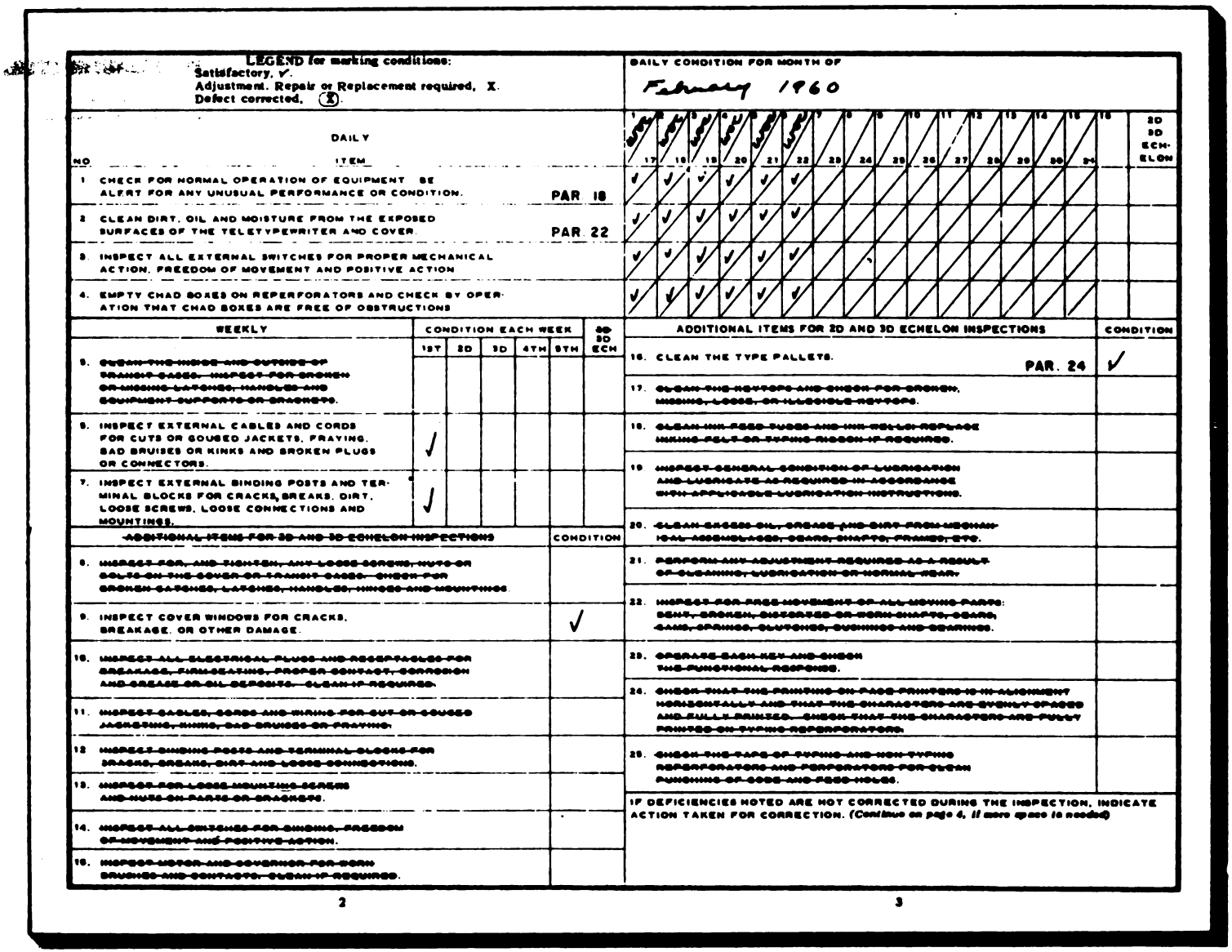
4

DA FORM MAY 57 11-252

REPLACES DA FORMS 11-268, 1 OCT 56; 11-268, 11-262, AND 11-269; WHICH ARE OBSOLETE.

TM5815-263-12-11

Figure 16. DD Form 11-252, pages 1 and 4.



LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF February 1960

NO	DAILY ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	2D 3D ECHELON
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
1	CHECK FOR NORMAL OPERATION OF EQUIPMENT BE ALERT FOR ANY UNUSUAL PERFORMANCE OR CONDITION. PAR 18	✓	✓	✓	✓	✓	✓											
2	CLEAN DIRT, OIL AND MOISTURE FROM THE EXPOSED SURFACES OF THE TELETYPEWRITER AND COVER. PAR 22	✓	✓	✓	✓	✓	✓											
3	INSPECT ALL EXTERNAL SWITCHES FOR PROPER MECHANICAL ACTION, FREEDOM OF MOVEMENT AND POSITIVE ACTION	✓	✓	✓	✓	✓	✓											
4	EMPTY CHAD BOXES ON REPERFORATORS AND CHECK BY OPERATION THAT CHAD BOXES ARE FREE OF OBSTRUCTIONS	✓	✓	✓	✓	✓	✓											

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
5. ~~CLEAN THE INSIDE AND OUTSIDE OF TRANSIT CASES. INSPECT FOR BROKEN OR MISSING LATCHES, HANDLES AND EQUIPMENT SUPPORTS OR BRACKETS.~~						
6. INSPECT EXTERNAL CABLES AND CORDS FOR CUTS OR GOUGED JACKETS, FRAYING, BAD BRUISES OR KINKS AND BROKEN PLUGS OR CONNECTORS.	✓					
7. INSPECT EXTERNAL BINDING POSTS AND TERMINAL BLOCKS FOR CRACKS, BREAKS, DIRT, LOOSE SCREWS, LOOSE CONNECTIONS AND MOUNTINGS.	✓					

~~ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS~~	CONDITION
8. ~~INSPECT FOR, AND TIGHTEN, ANY LOOSE SCREWS, NUTS OR BOLTS ON THE COVER OR TRANSIT CASES. CHECK FOR BROKEN CATCHES, LATCHES, HANDLES, HINGES AND MOUNTINGS.~~	
9. INSPECT COVER WINDOWS FOR CRACKS, BREAKAGE, OR OTHER DAMAGE.	✓
10. ~~INSPECT ALL ELECTRICAL PLUGS AND RECEPTACLES FOR BREAKAGE, FIRM SEATING, PROPER CONTACT, CORROSION AND GREASE OR OIL DEPOSITS. CLEAN IF REQUIRED.~~	
11. ~~INSPECT CABLES, CORDS AND WIRING FOR CUT OR GOUGED JACKETING, KINKS, BAD BRUISES OR FRAYING.~~	
12. ~~INSPECT BINDING POSTS AND TERMINAL BLOCKS FOR CRACKS, BREAKS, DIRT AND LOOSE CONNECTIONS.~~	
13. ~~INSPECT FOR LOOSE MOUNTING SCREWS AND NUTS ON PARTS OR BRACKETS.~~	
14. ~~INSPECT ALL SWITCHES FOR BINDING, FREEDOM OF MOVEMENT AND POSITIVE ACTION.~~	
15. ~~INSPECT MOTOR AND GOVERNOR FOR WORN BRUSHES AND CONTACTS. CLEAN IF REQUIRED.~~	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
16. CLEAN THE TYPE PALLETS. PAR. 24	✓
17. ~~CLEAN THE KEYTOPS AND CHECK FOR BROKEN, MISSING, LOOSE, OR ILLEGIBLE KEYTOPS.~~	
18. ~~CLEAN THE FEED RUBS AND THE ROLLER REPLACE WORN FELT OR TYPING RIBBON IF REQUIRED.~~	
19. ~~INSPECT GENERAL CONDITION OF LUBRICATION AND LUBRICATE AS REQUIRED IN ACCORDANCE WITH APPLICABLE LUBRICATION INSTRUCTIONS.~~	
20. ~~CLEAN GUMMED OIL, GREASE AND DIRT FROM MECHANICAL ASSEMBLAGES, GEARS, SHAFTS, FRAMES, ETC.~~	
21. ~~PERFORM ANY ADJUSTMENT REQUIRED AS A RESULT OF CLEANING, LUBRICATION OR NORMAL WEAR.~~	
22. ~~INSPECT FOR FREE MOVEMENT OF ALL MOVING PARTS: BENT, BROKEN, DISTORTED OR WORN SHAFTS, GEARS, CAMS, SPRINGS, CLUTCHES, BUSHINGS AND BEARINGS.~~	
23. ~~OPERATE EACH KEY AND CHECK FOR FUNCTIONAL RESPONSE.~~	
24. ~~CHECK THAT THE PRINTING ON PAGE PRINTERS IS IN ALIGNMENT HORIZONTALLY AND THAT THE CHARACTERS ARE EVENLY SPACED AND FULLY PRINTED. CHECK THAT THE CHARACTERS ARE FULLY PRINTED ON TYPING REPERFORATORS.~~	
25. ~~CHECK THE TAPE OF TYPING AND NON-TYPING REPERFORATORS AND PERFORATORS FOR CLEAN PUNCHING OF CODE AND FEED HOLES.~~	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION. *(Continue on page 4, if more space is needed)*

2 3

TM9815-263-12-12

Figure 16. DD Form 11-262, items 2 and 3.

(4) Grasp the handle on the right side of the type box; move it upward and to the left until the left side of the type box is unhooked; then lift the type box from the typing unit.

(5) Clean the typefaces with a clean, dry typewriter brush.

(6) After cleaning, hold the type box so that the larger hook is on the left and the type is facing the platen. Place the larger hook under the stud in front of the left type box roller and push the smaller hook on the right side downward into place on the stud of the right type box roller.

(7) Hold the type box latch in the horizontal position and move it to the left, over the latching notch, as far as it will go. Raise the latch to a vertical position and press it to the left until it locks into position.

(8) Check to make certain that the ribbon has not been disturbed and is threaded properly in its guides.

(9) Close the dome. Push the copy window latches (fig. 1) toward each other and tilt the copy window forward and the copy access door rearward. Feed the paper upward in the typing unit, hold the end of the paper forward, and close the copy access door. Latch the copy window in place.

b. Cleaning Perforator Typewheel.

(1) Set the power switch lever (fig. 1) to the lower position.

(2) Push the perforator lid latch (fig. 1) to the left and tilt the perforator lid upward.

(3) Tear the tape as close to the perforator as possible and remove the ribbon from beneath the typewheel.

(4) Arrange the set for local tape perforation (par. 17*a*). Set the power switch lever to the upper position, press the LTRS key, and then set the power switch lever to the lower position.

(5) Insert a piece of paper or dry, lint-free cloth beneath the type wheel (fig. 13). (The material should be large enough to prevent any dirt from being brushed into the perforator.) Clean the accessible typefaces with a clean, dry typewriter brush.

(6) Carefully remove the paper or cloth from beneath the type wheel and shake off the loose dirt.

(7) Set the power switch lever to the upper position, press the FIGS key, and restore the lever to the lower position.

(8) Insert the paper or cloth under the type wheel again and clean the remainder of the typefaces with the typewriter brush.

(9) Carefully remove the paper or cloth from beneath the type wheel. Insert the ribbon beneath the guide and close the perforator lid.

c. Cleaning Reperforator Type Wheel of AN/FGC–58.

(1) Open the dome *a*(1) above.

(2) Set the reperforator power switch (fig. 9) to OFF.

(3) Tear the tape as close to the reperforator as possible and remove the ribbon from beneath the type wheel.

(4) Insert a piece of paper or dry, lint-free cloth beneath the type wheel (fig. 13).

(5) Clean the accessible portion of the type wheel with a clean, dry, typewriter brush. Remove the paper or cloth, operate the reperforator until the dirty side of the type wheel is accessible, and repeat the cleaning procedure.

(6) Carefully remove the paper or cloth from beneath the type wheel and insert the ribbon beneath the type wheel.

(7) Set the power switch (fig. 9) to ON, and close the dome *a*(9) above.

Caution: **Do not use any cleaning solution, cleaning compound, or solvent of any kind on the type box or type wheels.**

24. Operator's Checklist

The following chart lists trouble symptoms which may be encountered by the operator of Teletypewriter Set AN/FGC–56 or AN/FGC–58. The chart includes probable causes and possible remedies for each symptom. *If the suggested corrective actions do not correct the trouble or if, after being corrected, the trouble recurs, notify authorized maintenance personnel.*

Symptom	Probable trouble	Correction
Power switch lever down but motor fails to run.	Set in "stand-by" condition	Press BREAK key to start motor.
	No power	Check for power at receptacle and see that power plug is properly inserted.
	Fuse blown	Replace with new fuse (par. 26a(1)).
	Motor overheated	Turn off power, open dome, and allow motor to cool. Then press overload reset button on the base of the motor (fig. 5) and turn power on again.
Motor runs but set unable to send.	Send circuit disabled (keyboard sending)	Press SEND key.
	Controls improperly set (keyboard or transmitter distributor sending)	Check position of controls (par. 17a) to determine if set for operation desired.
	Line connection defective	Attempt to communicate with other stations on line; if no response, notify higher echelon maintenance personnel.
Motor runs but typing unit is inoperative.	Controls improperly set	Set controls for type of operation desired par. 17a).
	No traffic	Attempt to obtain a response from another station on line.
	Typing unit defective	Set LINE-TEST switch to TEST and type test sentence. If inoperative, notify higher echelon maintenance personnel.
Reception of garbled copy.	Rangefinder improperly adjusted ..	Adjust rangefinder (par. 27).
	Line relay defective	Replace line relay (par. 26c(1)).
	Sending station transmitting faulty signals	Press the BREAK key, then notify sending station of difficulty.
Typing unit (or reperforator of AN/FGC-58) runs open.	Line relay defective	Replace line relay (par. 26c(1)).
	Signal line open	Higher echelon maintenance required.
Excessive paper lint appears in vicinity of platen.	Paper improperly installed	Reinstall paper (par. 12).
Paper fails to feed when platen turns.	Paper release lever in pressure release position	Move paper release lever (fig. 7) to rear position.
Paper wrinkles within cabinet.	Paper unevenly torn and catching on side of copy access door	Open copy access door (fig. 6) engage platen handwheel (fig. 7), roll paper up a few inches, then close copy access door, making sure paper is feeding out on top of it.
Perforator tears tape feed holes.	Tape improperly placed in tape supply container	Position tape properly in tape container. Be sure tape is being fed from bottom of roll.
Tape becomes taut or tears.	Tape threaded improperly	Thread tape properly (par. 13). Be sure it is not twisted in its path from container to tape chute.
Reperforator motor fails to run with reperforator power switch set to ON.	Fuse blown	Install new fuse (par. 26a).
	Motor overheated	Open dome, place reperforator power switch to OFF and allow motor to cool. After it has cooled, press overload reset button and turn power on.
All copy lights fail to light.	Copy light switch not set properly.	Set copy light switch (fig. 6) to NORMAL ON.
Single copy light or end-of-line indicator lamp fails to light.	Defective copy lamp or end-of-line indicator lamp	Replace defective lamp (par. 26b).

25. Adjusting Rangefinders and Reperforator Speed

a. Adjusting Typing Unit Rangefinder.

(1) Press the dome release pushbuttons (figs. 4 and 6) and tilt the dome upward. Locate the rangefinder knob on the right side of the typing unit (fig. 7).

(2) Arrange to have one of the other stations in the circuit send alternate R and Y test signals continuously.

(3) Push the rangefinder knob inward to engage the teeth on the rear of the knob with the teeth of the adjacent rangefinder sector and proceed as follows:

(a) Turn the rangefinder knob *clockwise slowly* until errors appear in the typed copy. Turn the knob in the opposite direction slowly until errors no longer are printed. Note the number on the knob that is in line with the rangefinder index mark.

(b) Turn the rangefinder knob *counterclockwise slowly* until errors appear again. Turn the knob in the opposite direction until errors are no longer printed. Note the number on the knob that is in line with the rangefinder index mark.

(c) Set the rangefinder knob midway between the readings obtained in *(a)* and *(b)* above.

(4) Close the dome (par. 12*g*).

b. Adjusting Reperforator Rangefinder of AN/FGC–58.

(1) Press the dome release pushbuttons (figs. 4 and 6) and tilt the dome upward.

(2) Arrange for one of the other stations in the circuit to transmit R and Y test signals continuously.

(3) Locate the rangefinder knob of the reperforator (fig. 9) and perform the procedure described in *a*(3) above.

c. Changing Reperforator Operating Speed of AN/FGC–58. Press the dome release pushbuttons (figs. 4 and 6) and tilt the dome upward. If the reperforator motor is running set the reperforator power switch (fig. 9) to OFF. Press the reperforator speed selector lever and place the index mark opposite the required speed position. If any difficulty is encountered in placing the lever in position, turn the motor fan while still applying pressure to the lever. Turn the reperforator power switch to ON and close the dome (par. 12*g*).

26. Replacement of Parts at Organizational Level

Part replacement at organizational level is limited to the replacement of the running spare parts furnished with the teletypewriter sets. Replace the running spares as described below.

a. Fuse Replacement.

Caution: Never replace a fuse with one of a higher rating. If a fuse burns out immediately after replacement, notify authorized maintenance personnel; do not replace it a second time.

(1) *Main electrical service unit fuses* (fig. 5).

(a) Set the power switch lever (fig. 1) to the lower position. Press the dome release pushbuttons (figs. 4 and 6) and lift the dome.

(b) Release the fuse cap by twisting it one-quarter turn to the left while applying a slight downward pressure.

(c) Lift the fuse cap out and remove the old fuse.

(d) Check the new fuse to determine that it is not defective and is of the proper value.

(e) Insert the new fuse in the fuse cap and replace the cap in the fuseholder.

(f) Close the dome (par. 12*g*) and set the power switch lever to the upper position.

(2) *Reperforator fuse (AN/FGC–58 only).*

(a) Push the perforator access door latch (fig. 1) to the left and open the perforator and reperforator access doors. Set the reperforator power switch (fig. 9) to OFF.

(b) Perform the procedure described in (1)*(b)* through *(e)* above. The reperforator fuseholder is located on the reperforator unit (fig. 9).

(c) Set the reperforator power switch to ON.

(d) Close the reperforator and perforator access doors.

b. Lamp Replacement.

(1) If the set is running, set the power switch lever (fig. 1) to the lower position.

(2) Press the dome release pushbuttons (figs. 4 and 6) and lift the dome to expose the copy lights and end-of-line indicator. All lamps are located on the inner side of the dome.

(3) Remove the defective lamp by turning it to the left while applying a slight pressure toward the socket.

(4) Install a new lamp (fig. 3) in the empty socket.

(5) Close the dome (par. 12*g*).

(6) Set the power switch lever (fig. 1) to the upper position.

c. Line Relay Replacement.

(1) *Equipment line relay.*

(a) Set the power switch lever (fig. 1) to the lower position.

(b) Press the dome release pushbuttons (figs. 4 and 6) and tilt the dome upward until it locks in place.

(c) Pull the line relay from its socket (fig. 5).

(d) Plug a new line relay into the electrical service unit. When installing the new relay, position the four guideposts so that the two larger posts are toward the rear of the electrical service unit.

(e) Close the dome (par. 12*g*).

(2) *Reperforator line relay (AN/FGC–58 only)*

(a) Set the reperforator power switch (fig. 9) to OFF.

(b) Open the lower compartment door (fig. 1) by loosening the two screws to gain access to the reperforator electrical service unit (fig. 4).

(c) Perform the procedure given in (1)*(c)* and *(d)* above.

(d) Close the lower compartment door and set the reperforator power switch to ON.

d. Installing Paper, Tape, and Ribbon. Refer to paragraphs 12 through 15 for installation procedures for these items.

CHAPTER 4

DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

27. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures outlined in paragraph 28 will be used to prevent further use of the equipment.

28. Methods of Destruction

a. Smash. Smash the controls, magnets, switches, capacitors, castings, clutches, shafts, gears, and bearings; use sledges, axes, handaxes, pickaxes, hammers, or crowbars.

b. Cut. Cut the input power cord, the output cords, internal wiring, and external cabling; use axes, cutting pliers, bayonets, or machetes.

c. Burn. Burn all cords, wiring diagrams, technical manuals, coils, and relays; use gasoline, kerosene, oil, flamethrowers, or incendiary grenades.

d. Bend. Bend covers, frames, cabinets, and bases.

e. Explode. If explosives are necessary, use firearms, grenades, or TNT.

f. Dispose. Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

APPENDIX

MAINTENANCE ALLOCATION CHART

1. General

a. Scope. The maintenance allocation chart assigns maintenance functions and repair operations to be performed by the lowest appropriate echelon. It also specifies the tool and test equipments authorized at each echelon to perform the assigned maintenance functions.

b. Maintenance Allocation Chart Column.

(1) *Part or component.* Column 1 shows only nomenclature or standard item name. Components and parts comprising the major end item are listed alphabetically. Assemblies, subassemblies, and related parts are arranged as groups. The component parts of each group are listed alphabetically immediately below the group listing. Mounting hardware, such as screws, bolts, nuts, washers, brackets, and clamps, is not included in the list.

(2) *Maintenance function.* Column 2 indicates the various maintenance functions that will be performed for each part or assembly listed in column 1. These maintenance functions are defined as follows:

(a) Service. To clean; to preserve; and to replenish lubricants.

(b) Adjust. To regulate periodically to prevent malfunction.

(c) Inspect. To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.

(d) Test. To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment, such as gages, meters, etc.

(e) Replace. To substitute serviceable assemblies, subassemblies, and parts for unserviceable components.

(f) Repair. To restore to a serviceable condition by replacing unserviceable parts or by any other action required, utilizing tools, equipment, and skills available, to include welding, grinding, riveting, straightening, adjusting, etc.

(g) Rebuild. To restore to a condition comparable to new by disassembling the item to determine the condition of each of its component parts and reassembling it using serviceable, rebuilt, or new assemblies, subassemblies, and parts.

(3) *1st, 2d, 3d, 4th, and 5th echelon.* The symbol X indicates that echelon *and* higher echelons are responsible for the maintenance function indicated. Repair parts may not, necessarily, be stocked at the echelon indicated; refer to the applicable Repair Parts and Special Tools List.

(4) *Tools required.* The numbers in column 8 indicate tool and test equipments required to perform the related maintenance function. These numbers are identified in Allocation of Tools for Maintenance Functions.

(5) *Remarks.* Column 9 contains any notations necessary to clarify the data cited in the preceding columns.

2. Maintenance by Using Organizations

When this equipment is used by signal service organizations organic to the theatre headquarters or communication zone to provide theatre communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

3. Comments or Suggestions

Any comments concerning omissions and discrepancies in this maintenance allocation chart will be prepared on DA Form 2028 and forwarded direct to Commanding Officer, U. S. Army Signal Equipment Support Agency, Fort Monmouth, N. J., ATTN: SIGFM/ES–M.

4. Allocation of Tools for Maintenance Functions

a. Tools required for maintenance functions. Column 1 lists the tool and test equipments required to perform the maintenance functions.

b. 1st, 2d, 3d, 4th, and 5th echelon. The dagger symbol (†) indicates that the tool or test equipment is allocated to that echelon.

c. Tool code. The numbers in column 7 are code numbers that stand for the associated tool or test equipment and are used in the maintenance allocation chart to refer to the indicated item.

d. Remarks. Column 8 is not used.

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
TELETYPEWRITER SETS AN/FGC AND AN/FGC-58	service	X						Except lubrication
				X			6	Including lubrication
	adjust	X						Performs rangefinder adjustment
	adjust			X			6,7	All adjustments
	inspect	X						External parts
				X				Interior parts
	test	X						Operational tests
				X			1,2,3,4	Performs resistance voltage and current measurements to determine condition of circuits
					X		1,2,4,5	Conducts distortion tests Conducts all tests to insure equipment returned to user meets minimum mechanical visual, electrical and operational requirements
	rebuild					X	6,7	
AUTOMATIC TYPING UNIT (LP-5B)/AFK)								
ARMATURE, ELECTROMAGNETIC ACTUATOR	replace			X			6	
ARMS	replace			X			6	
BAILS	replace			X			6	
BALL BEARINGS	replace			X			6	
BARS	replace			X			6	
BEARINGS, BALL, INNER	replace			X			6,7	
BEARINGS, CONE	replace			X			6,7	
BEARINGS, ROLLER	replace			X			6,7	
BEARING, SLEEVE	replace			X			6,7	
BELL CRANKS	replace			X			6	
BLOCK, BEARING	replace			X			6	
BLOCK, CONTACT	replace			X			6	
BLOCK, GUIDE	replace			X			6	
BRACKETS	replace			X			6	
BUSHINGS	replace			X			6	
CAMS	replace			X			6,7	
CODE BARS	replace			X			6	
COLLARS	replace			X			6	
CONNECTORS	replace			X			6	
CONTACTS	replace			X			6	
CUP, DASHPOT VALVE	replace			X			6	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
DETENTS	replace			X			6	
DIAL, CONTROL	replace			X			6	
DISKS	replace			X			6	
DRUMS	replace			X			6	
ECCENTRICS	replace			X			6	
ELECTROMAGNET	replace			X			6	
FELTS	replace			X			6	
FORKS	replace			X			6	
GEARS	replace			X			6,7	
GUIDES	replace			X			6	
HAMMER	replace			X			6	
HUBS	replace			X			6	
KEYS, CAM DISK	replace			X			6	
KNOBS	replace			X			6	
LATCHES	replace			X			6,7	
LEVERS	replace			X			6	
LINKS	replace			X			6	
PAPER, TELETYPEWRITER ROLL	replace	X						
PAWLS	replace			X			6	
PLATEN	replace			X			6	
PLATES	replace			X			6	
POST	replace			X			6,7	
PULLEYS	replace			X			6	
RAIL	replace			X			6	
RATCHETS	replace			X			6	
RETAINERS	replace			X			6	
RIBBON	replace	X						
RINGS	replace			X			6	
ROLLERS	replace			X			6	
SHAFTS	replace			X			6,7	
SHIMS	replace			X			6	
SLIDES	replace			X			6	
SOLENOID	replace			X			6	
SPACERS	replace			X			6	
SPRINGS	replace			X			6	
STRIPPER	replace			X			6	
STUDS	replace			X			6,7	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
TYPE BOX	replace	X						
	repair			X			6,7	
DUMMY PALLETS	replace			X			6	
NUTS (150078) (130079)	replace			X			6	
PALLETS	replace			X			6,7	
SCREWS (151738) (110434)	replace			X			6	
SPRINGS (157238)	replace			X			6,7	
WIRE ROPE ASSEMBLIES	replace			X			6	
CABINET GROUP (LWC 214BR)								
ARMATURE	replace			X			6	
ARMS	replace			X			6	
BUMPERS	replace			X			6	
BUSHINGS	replace			X			6	
CONNECTORS	replace			X			6	
ELECTROMAGNET	replace			X			6	
FILTERS, RADIO INTERFERENCE	replace			X			6	
FOOT	replace			X			6	
GASKET	replace			X			6	
GROMMETS	replace			X			6	
KNOB	replace			X			6	
LAMP (6240-797-4370)	replace	X						
LAMPHOLDER	replace			X			6	
LENS, INDICATOR LIGHT	replace			X			6	
LEVER	replace			X			6	
MOUNT	replace			X			6	
PAD	replace					X	6	
POST	replace			X			6,7	
SHAFT	replace			X			6,7	
SPRINGS	replace			X			6	
STUDS	replace			X			6,7	
SWITCH TOGGLE	replace			X			6	
TERMINAL BOARDS	replace			X			6	
TRANSFORMERS	replace			X			6	
WINDOW OBSERVATION	replace			X			6	
ELECTRICAL SERVICE UNIT GROUP (LES U 12) AN/FGC-58 ONLY								
BELL, ELECTRICAL	replace			X			6	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
CONNECTOR	replace			X			6	
FILTER, RADIO INTERFERENCE	replace			X			6	
RECTIFIER, METALLIC	replace			X			6	
RELAY	replace			X			6	
RELAY, ARMATURE	replace			X			6	
RESISTORS	replace			X			6	
ELECTRICAL SERVICE UNIT GROUP (LESU-37)								
ARMATURE, ELECTROMAGNETIC ACTUATOR	replace			X			6	
CONNECTORS	replace			X			6	
KNOBS	replace			X			6	
RECTIFIER, METALLIC	replace			X			6	
RELAY, ARMATURE	replace			X			6	
RESISTORS	replace			X			6	
SPRINGS	replace			X			6	
SWITCH	replace			X			6	
KEYBOARD GROUP (LAK 11)								
ARMS	replace			X			6	
BAILS	replace			X			6	
BALL, BEARING	replace			X			6	
BARS	replace			X			6	
BEARINGS, BALL, ANNULAR	replace			X			6,7	
BEARINGS, ROLLER	replace			X			6,7	
BELL, CRANK	replace			X			6	
BRACKETS	replace			X			6	
BUMPERS, RUBBER	replace			X			6	
BUSHING, ECCENTRIC	replace			X			6	
BUTTONS, PILOT	replace			X			6	
CAMS	replace			X			6	
CLIPS	replace			X			6	
CODE BARS	replace			X			6	
CONNECTORS	replace			X			6	
CONTACTS, ELECTRICAL	replace			X			6	
DISK	replace			X			6	
ECCENTRICS	replace			X			6	
EXTENSION, TOGGLE	replace			X			6	
FELTS	replace			X			6	
FILTER, RADIO INTERFERENCE	replace			X			6	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
GEARS	replace			X			6, 7	
GROMMET	replace			X			6	
GUIDES	replace			X			6	
HUBS	replace			X			6	
KEY LEVER ASSEMBLIES	replace			X			6	
LATCHES	replace			X			6, 7	
LEVERS	replace			X			6	
LINKS	replace			X			6	
PAWLS	replace			X			6	
PLATE, GUIDE	replace			X			6	
POSTS	replace			X			6, 7	
RATCHETS	replace			X			6	
RETAINER (REF NO. 159287)	replace			X			6	
ROD	replace			X			6	
ROLLER, BAIL	replace			X			6	
SEAL	replace			X			6	
SHAFTS	replace			X			6, 7	
SHIMS	replace			X			6	
SLEEVE, GEAR	replace			X			6, 7	
SPACERS	replace			X			6	
SPRINGS	replace			X			6	
STUDS	replace			X			6, 7	
SWITCHES	replace			X			6	
TERMINAL BOARDS	replace			X			6	
TOGGLE	replace			X			6	
TOGGLE, DETENT	replace			X			6	
WEDGES, LOCKING	replace			X			6	
MOTOR UNIT GROUPS (LMR 3, LMR 12)								
CAPACITOR, FIXED, ELECTROLYTIC	replace			X			6	
FAN	replace			X			6	
MOTOR, AC	replace			X*			6	
	repair				X		6, 7	
	rebuild					X	6, 7	
BEARINGS	replace				X		6, 7	
END SHIELDS	replace				X		6, 7	
MOUNTS VIBRATION	replace				X		6, 7	
ROTOR MOTOR	replace				X		6, 7	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
SPRINGS	replace				X		6	
STATOR, MOTOR	replace				X		6	
PLATE NUT	replace			X			6	
RELAY	replace			X			6	
STRAPS	replace			X			6	
SWITCH, THERMOSTATIC	replace			X			6	
RELAY, ARMATURE GROUP RE-163/G (R) 30)	replace			X				
	repair			X			4,6	
	rebuild					X	4,6	
ARMATURE, RELAY	replace			X			6	
BASE, RELAY	replace			X			6	
CONTACT, ELECTRICAL	replace			X			6	
COVER, RELAY	replace			X				
INSULATORS, BUSHING	replace			X			6	
INSULATORS, PLATE	replace			X			6	
MAGNET, PERMANENT	replace			X			6	
NUT, KNURLED	replace			X			6	
PLATE, RETAINER	replace			X			6	
TERMINAL STUD	replace			X			6	
REPERFORATOR BASE GROUP (LRB20) AN/FGC-58 ONLY								
BEARINGS	replace			X			6,7	
BELT	replace			X			6	
CONNECTORS	replace			X			6	
FUSE, CARTRIDGE (5920-532-1631)	replace	X						
FUSEHOLDER	replace			X			6	
GEARS	replace			X			6,7	
ROLLER	replace			X			6	
SHAFTS	replace			X			6,7	
SPRINGS	replace			X			6	
SWITCH	replace			X			6	
REPERFORATOR GROUP (LTPE1AM1)								
ARMATURE, ELECTROMAGNETIC ACTUATOR	replace			X			6	
ARMS	replace			X			6	
BAILS	replace			X			6	
BARS	replace			X			6	
BEARINGS, BALL	replace			X			6,7	
BEARINGS, SLEEVE	replace			X			6,7	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH.	(6) 4TH ECH.	(7) 5TH ECH.	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
BUSHING	replace			X			6	
CAMS	replace			X			6	
CLAMPS	replace			X			6	
COLLARS	replace			X			6	
CONTACT	replace			X			6	
CONNECTOR	replace			X			6	
CRANKS	replace			X			6	
DETENTS	replace			X			6	
DISK	replace			X			6	
DOWELS	replace			X			6	
ECCENTRICS	replace			X			6	
GUIDES	replace			X			6	
HAMMER	replace			X			6	
INSULATOR	replace			X			6	
LATCHES	replace			X			6	
LEVERS	replace			X			6	
LINKS	replace			X			6	
PAWL	replace			X			6	
PIN, PUNCH	replace			X			6	
PLATES	replace			X			6	
POSTS	replace			X			6,7	
RACK REF NO. 156466	replace			X			6	
ROLLERS	replace			X			6	
SHAFTS	replace			X			6,7	
SHIMS	replace			X			6	
SLIDES	replace			X			6	
SPRINGS	replace			X			6	
STUD	replace			X			6,7	
WHEEL, DIE	replace			X			6	
WHEEL, FEED	replace				X		6	
WHEEL, TYPE	replace			X			6	
REPERFORATOR GROUP (LPR15) AN/FGC-58 ONLY								
ARMATURE, ELECTROMAGNETIC ACTUATOR	replace			X			6	
ARMS	replace			X			6	
BAILS	replace			X			6	
BEARING, BALL	replace			X			6,7	
BEARING, SLEEVE	replace			X			6,7	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH.	(4) 2ND ECH.	(5) 3RD ECH.	(6) 4TH ECH.	(7) 5TH ECH.	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
BLADE	replace			X			6	
BUSHINGS	replace			X			6	
CAMS	replace			X			6	
CLAMPS	replace			X			6	
COLLARS	replace			X			6	
CONTACT	replace			X			6	
CONNECTOR	replace			X			6	
CRANKS	replace			X			6	
DETENTS	replace			X			6	
DISK	replace			X			6	
DOWELS	replace			X			6	
ECCENTRICS	replace			X			6	
GUIDES	replace			X			6	
HAMMER	replace			X			6	
INSULATORS	replace			X			6	
LATCHES	replace			X			6	
LEVERS	replace			X			6	
LINKS	replace			X			6	
PAWLS	replace			X			6	
PIN, PUNCH	replace			X			6	
PLATES	replace			X			6	
POSTS	replace			X			6,7	
RACK REF NO. 156466	replace			X			6	
RIBBON	replace	X						
ROLLERS	replace			X			6	
SHAFTS	replace			X			6,7	
SHIMS	replace			X			6	
SLIDES	replace			X			6	
SPRINGS	replace			X			6	
STUDS	replace			X			6,7	
TAPE, BLANK RECORDING	replace	X						
WHEEL, DIE	replace			X			6	
WHEEL, FEED	replace			X			6	
WHEEL, TYPE	replace			X			6	
TRANSMITTER DISTRIBUTOR BASE GROUP (LCX88)								
BEARING	replace			X			6,7	
CONNECTORS	replace			X			6	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH.	(4) 2ND ECH.	(5) 3RD ECH.	(6) 4TH ECH.	(7) 5TH ECH.	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
COUPLINGS	replace			X			6	
GEARS (SPEED CHANGE)	replace			X			6,7	
HUBS	replace			X			6	
LATCHES	replace			X			6,7	
SHAFTS	replace			X			6,7	
SPRING	replace			X			6	
TRANSMITTER DISTRIBUTOR GROUP (LXD-7)								
ARMATURE	replace			X			6	
ARMS	replace			X			6	
BALLS	replace			X			6	
BEARINGS	replace			X			6,7	
BLOCK (154194)	replace			X			6	
BRACKETS	replace			X			6	
BUSHINGS	replace			X			6	
CONTACT ASSEMBLY	replace			X			6	
CONTACT, SCREW	replace			X			6	
CONTACT, SPRING	replace			X			6	
CORE	replace			X			6	
DISKS	replace			X			6	
DRUM	replace			X			6	
ECCENTRIC	replace			X			6	
ELECTROMAGNET	replace			X			6	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/FGC-56 AND AN/FGC-58 (continued)								
FILTER	replace			X			6	
GEARS	replace			X			6	
GUIDE	replace			X			6	
LATCHES	replace			X			6,7	
LEATHER, WICK	replace			X			6	
LEVERS	replace			X			6	
PAWLS	replace			X			6	
PIN	replace			X			6,7	
PLATE (156514)	replace			X			6	
PLATE CLAMP	replace			X			6	
PLATES, NUT	replace			X			6	
PLUGS	replace			X			6	
PLUNGER	replace			X			6	
PLUNGER, DETENT	replace			X			6	
POSTS	replace			X			6,7	
RETAINERS	replace			X			6	
ROLLER	replace			X			6	
SHAFTS	replace			X			6,7	
SHIMS	replace			X			6	
SPACERS	replace			X			6	
SPRINGS	replace			X			6	
TAPE LID	replace			X			6	
WHEEL FEED	replace			X			6	

ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

(b) TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	(c) 1ST ECH.	(d) 2ND ECH.	(e) 3RD ECH.	(f) 4TH ECH.	(g) 5TH ECH.	(h) TOOL CODE	(i) REMARKS
AN/FGC-64 AND AN/ FGC-68 (continued)							
MULTIMETER AN/URM-105 (TELETYPEWRITER SETS AN/FGC-64 AND AN/FGC-68D			+	+	+	1	
MAINT. INSTRUMENT, MULTIMETER TS-1671/U (TELETYPEWRITER SETS AN/FGC-64 AND AN/FGC-68)			+	+	+	2	
TEST SET TS-2/TC (TELETYPEWRITER SETS AN/FGC-64 AND AN/FGC-68)		+				3	
TEST SET 1-198 (*) (TELETYPEWRITER SETS AN/FGC-64 AND AN/FGC-68)		+		+	+	4	
DISTORTION TEST SET TS-368/GG (TELETYPEWRITER SETS AN/FGC-64 AND AN/FGC-68)				+	+	5	
TOOL EQUIPMENT TE-808 (TELETYPEWRITER SETS AN/FGC-64 AND AN/FGC-68)			+	+	+	6	
TOOL EQUIPMENT TE-111 (TELETYPEWRITER SETS AN/FGC-64 AND AN/FGC-68			+	+	+	7	

By Order of *Wilber M. Brucker*, Secretary of the Army:

L. L. LEMNITZER,
General, United States Army,
Chief of Staff.

Official:

R. V. LEE,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

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Tech Stf, DA (1) except CSigO (18)
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USA Sig Pubs Agcy (8)
Army Pictorial Cen (2)
USA Ord Msl Comd (3)
Units org under fol TOE:
11-7 (2)
11-16 (2)
11-57 (2)
11-97 (2)
11-117 (2)
11-155 (2)
11-500 AA-AE (2)
11-557 (2)
11-587 (2)
11-592 (2)
11-597 (2)
33-56 (2)

NG: None.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

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