

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND
SPECIAL TOOLS LIST AND MAINTENANCE ALLOCATION CHART,
MAST AB-86/GRA-4

Headquarters of the Army, Washington, D. C.

18 August 1960

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SECTION I

INTRODUCTION

1. Scope

a. This manual includes an operator's maintenance repair parts and special tools list, an organizational maintenance repair parts and special tools list, and a maintenance allocation chart.

b. The operator's maintenance repair parts and special tools list lists items supplied for initial operation and for running spares. The list includes accessories, parts, and material issued as part of the major item. All items

authorized for basic operator maintenance of the equipment are also listed.

c. The organizational maintenance repair parts and special tools list lists the quantities of repair parts authorized for organizational maintenance and is a basis for requisitioning maintenance and is a basis for requisitioning by organizations which are authorized the major item of equipment. End items of equipments are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

'This manual supersedes the first and second echelon portion of Department of the Army Supply Manual SIG 7 & 8 AB-/CGRA-4, 9 May 1957.

This copy is a reprint which includes current pages from Change I.

d. The maintenance allocation chart assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon.

e. Columns are as follows:

- (1) *Source, maintenance, and recoverability code.* Not used.
- (2) *Federal stock number.* This column lists the 11-digit Federal stock number.
- (3) *Designation by model.* Not 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) *Until. of issue.* The unit of issue is the supply term applied to the smallest quantity by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.
- (6) *Expendability.* Expendable items are indicated by the letter X; nonexpendable items are indicated by NX.
- (7) *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 Spares and Accessory 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.

(8) *Quantity incorporated in unit.* This column lists the quantity of each part found in a given assembly, component, or equipment.

(9) *Organizational.* The quantities indicated in this column are maximum levels of repair parts authorized to be kept on hand by units performing organizational maintenance. The quantities are based on 100 equipments to be maintained for a 15-day period.

(10) *Illustration.* Not used.

2. Parts for Maintenance

When this equipment is used by signal service organizations organic to the theater headquarters or communications zones to provide theater communications, those repair parts authorized up to and including fourth echelon are authorized for stockage by the organization operating this equipment.

3. Additional Repair Parts

Additional repair parts which may be required for performing organizational maintenance, but are not authorized for stockage in the prescribed load are identified by an asterisk (*) and are to be requisitioned as required, for immediate use only. Refer to AR 700-18.

4. Comments or Suggestions

Any comments concerning omissions and discrepancies in this manual will be prepared on DA Form 2028 and forwarded direct to Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-MLM, Fort Monmouth, N. J.

SECTION II. FIRST ECHELON FUNCTIONAL PARTS LIST

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPEND- ABILITY	(7) QUANTITY AUTHO- RIZED	(8)* (9) ILLUSTRATION	
							FIGURE NO.	ITEM NO.
			ITEMS COMPRISING AN OPERABLE EQUIPOMENT					
			ANTENNA MAST ASSEMBLY 4B-86/GRA-4					
	5985-257-2927		ANTENNA MAST AASSEMBLY AB-86/GRA-: whip type, f/transmitting and receiving; aluminum, OD finish, sect construction	EA	NX			
	5985-241-1916		ADAPTER, MAST MX 857/GRA-4: SigC dwg No SC-D 31861-B	EA	X	1		
	5820-237-7321		COUNTER POISE, ANTENNA CP-12: radial type; SigC dwg No. SC-D 1038	EA	X	1		
	5820-355-8970		FRAME MX-I1116/GRA-4: used to carry ant mast sectg and accessories; SigC dwg No. SC-D 31878		EA	X	1	
	5075 503 0702		GUY MX-381/GRA-4: SigC dwg No. SC-D-28053	EA	X	4		
	5975 538 0199		GUY MX 382/GRA 4: sIGc DWG No. No. SC D 29053	EA	X	4		
	5975 249 68112		GU'Y.MX-383/GRA-4:Sig C dwg No. SC-D-28053	EA	X	4		
	5975-228-8061		HALYARD MX-516/GRA-4: nylon rope; SigC dwg Nol. SC-D-28051	EA	X	1		
	5120-255-1477		HAMMER, HAND : blacksmiths sledge double face type; 2 1/2 lb; Fed Spec GGG-1-6 type G		EA	NX	1	
	5970-405-8232		INSULATOR mx-384/gra-4 cylindrical hollow; Sig spec 71-3222	EA	X	1		
	5820-240-8233		MAST BASE AB 154/t; SigC dwg No. SC-D-2805	EA	X	1		
	5820-228-0224		MAST SECTION AB-85/GRA-4: 1 pc construction; alum. SigC dwg No. SC-D-34887		EA	X	16	
	5820-636-2420		PLATE, ANTENNA MAST: sq shpae; SigC dwg No. SC-D81299	EA	X	1		
	5975-355-9361		PLATE, GUY MX-1170/U: disc shape; SigC dwg No. SC-B-30110	EA	X	3		
	5975-097-3203		STAKE, GUY GP-111/G: Amphenol part No. A-161-766	EA	X	4		
	6145-160-5114		WIRE, ELECTRICAL W-128: ins; single No. 14 AWG cond; 11 strands, 30 AWG MIL Spec S-13075		EA	X	10	
			RUNNING SPARES AND ACCESSOR ITEMS					
			ANTENNA MAST ASSEMBLY AB-86/GRA-4					
	5975-355-9361		PLATE, GUY MX-1470-/U:: disc shape; SigC dwg No. SC-B-30440	EA	X	3		
	5975-097-3203		STAKE, GUY GP-111/G: Amphenol part No. A-161-766	EA	X	1		

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SECTION III. SECOND ECHELON FUNCTIONAL PARTS LIST

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPEND- ABILITY	(7) QUANTITY AUTHO- RIZED	(8) (9) ILLUSTRATION	
							FIGURE NO.	ITEM NO.
			ANTENNA MAST ASSEMBLY AB-86-GRA-4					
	5985-257-2927		ANTENNA MAST ASSEMBLY AB-86-GRA-4: f transmitting and receiving; aluminum, OD finish; sect construction	EA	NX			
	5985-244-1916		ADAPTER, MAST MX-857-GRA-4; SigC dwg No. 5-SC-D 34861-B	EA	X	1	*	
	3940-266-2027		BLOCK, TACKLE w/w fiber rope; Nilcox Crittenden part 366, size 3	EA	X	1	*	
	5975-392-9599		CLAMP: accom 2 rope lays 3/16 in dia rope; SigC dwg No. SC-D11518-6	EA	X	39	*	
	5820-237-7321		COUNTERPOISE, ANTENNA CP-12: RADIAL TYPE; sIGc DWG No. SC-D-1038	EA	X	1	*	
	8340-026-0323		FASTENER: adj guy rope	EA	X	12	*	
	5820-030-3092		FASTENER, HALYARD: secures end of halyard; SigC dwg No. SC-D-28055	EA	X	1	*	
	5820-355-8970		FRAME, MX-116/GRA-4: used to carry ant mast sect and accessories; SigC dwg No. SC-D-34878	EA	X	1	*	
	5975-503-0702		GUY MX 381/GRA-4; SigC dwg No. SC-D-28063	EA	X	4	*	
	5975-538-0199		GUY MX 381/GRA-4; SigC dwg No. SC-D-28053	EA	X	1	*	
	5975-219-6812		GUY MX 381/GRA-4; SigC dwg No. SC-D-28053	EA	X	1	*	
	5975-228-8061		HALYARD MX 516/GRA-4 : nylon rope; SigC dwg No. SC-D-28051	EA	X	1	*	
	4030-355-9013		HOOK: S-shape; Smith J and II part 1000 18	EA	X	1	*	
	4030-197-8670		HOOK: attaches guy; snap type w rd mtg eye; SigC dwg No. SC-A-1304	EA	X	13	*	
	5970-105-8232		INSULATOR MX-381/GRA-4; cylindrical hollow; SigC spec No. 71-3222	EA	X	1	*	
	5970-284-8120		INSULATOR, STRAIN:: JAN type NS5B5221	EA	X	1	*	
	5970-175-2726		INSULATOR, STRAIN: aircraft guy type; SigC dwg Noc. SC-D-28053, item 1	EA	X	12	*	
	5820-2280224		MAST SECTION AB 85/GRA-4: 1 pc construction; SogC dwg No. SC-D-34887	EA	X	16	*	
	5820-392-5124		MOUNTING: f/mtg ant mast; retains mast in 1 3/32 in dia x 2 3 1 in 1g hole end of mtg; secured to stake head by 5/16 in dia steel pin; SigC dwg	EA	X	1	*	

AB 86-GRA 4

CHANGE

No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 25 February 1984

**OPERATOR AND ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND
SPECIAL TOOLS LIST AND MAINTENANCE ALLOCATION CHART,
MAST AB-861GRA-4 (5985-00-257-2927)**

TM 11-5985-229-12P, 18 August 1960, is changed as follows:

Page 5, Section 111.1 is added after Section III.

SECTION III.1

CROSS REFERENCE INDEX. The Cross-Reference Index is a cross-reference listing of part number to National Stock Number.

a. Use of Cross-Reference Index . To order a part listed in the Cross-Reference Index, note part number and then cross-reference that part number to the National Stock Number in the cross-reference Index. Then order through normal ordering channels.

b. Ordering Part Numbers Without National Stock Number. If the part number does not have a National Stock Number, then order the part through normal ordering channels using the part number and the FSCM.

CROSS REFERENCE INDEX FORMAT
Parts With AN FSN

FSN	NEW NSN	FSCM	PART NUMBER
83400260323	NONE	80063	ADJ GUY ROPES
58200303092	5820000303092	80063	SCD28055
59750973203	5975000973203	80058	GP-111/G
59750973203	5975000973203	80058	GP-111/G
59750973203	5975000973203	80058	GP-111/G
61451605114	6145001605114	81349	W128
61451605114	6145001605114	81349	W128
61451646746	NONE	78310	TYPE S
59701752726	5970001752726	80063	SC-D-28053E ITEM 4
40301875265	4030001875265	80058	GP-101/U
53402007073	5340002007073	79577	TYPE G 301
40202021345	4020002021345	80063	SC-D-28053 1
40102021347	NONE	81349	MIL-SPEC-C-5424
58202280224	5820002280224	80058	AB85GRA4
58202280224	5820002280224	80058	AB85GRA4
59752288061	NONE	80058	MX-516/GRA-4
59752288064	5985002288064	80058	MX-516A/GRA-4
58202377321	5820002377321	80058	CP-12
58202377321	5820002377321	82241	CP-12
58202408233	5820002408233	80058	AB154U
59752416236	NONE	09922	KS-15
59852441916	5985002441916	80058	MX-857/GRA-4
59852441916	5985002441916	80058	MX-857/GRA-4
53152475487	5315002475487	80063	SC-D-25052 ITEM 2
59752496842	5975002496842	80058	MX-383/GRA-4
59752496842	5975002496842	80058	MX-383/GRA-4
51202551477	NONE	80058	GGG-H-86 TYPE G
59852572927	5985002572927	80058	AB-861GRA-4
59852572927	5985002572927	80058	AB-86/GRA-4
59402669027	NONE	75977	PART 366 SIZE 3
40302728824	NONE	80063	SC-D-34890 2
59702848420	NONE	81350	NS5B5224
40302923376	NONE	80063	SC-B-76232-1
58203558970	5985003558970	80058	MX-1116/GRA-4
58203558970	5985003558970	80058	MX-1116/GRA-4
40303559043	NONE	80058	1000-18
59753559361	5975003559361	80058	MX-1470/U
59753559361	5975003559361	80058	MX-1470/U
59753559361	5975003559361	80058	MX-1470/U
58203925424	5820003925424	80063	SC-D-28052-1
59753929599	*5975003929599	80063	SC-D-14518 6
59404058232	NONE	80058	MX-384GRA-4
59704058232	NONE	80058	MX-384/GRA-4
40304978670	NONE	80063	SC-A-1304
59755030702	5975005030702	80058	MX-381/GRA-4
59755030702	5975005030702	80058	MX-381/GRA-4
59755380199	5975005380199	80058	MX-382/GRA-4
59755380199	5975005380199	80058	MX-382/GRA-4
61456131023	NONE	81349	CO-01HGF(1/4)0260
58206362420	5820006362420	80063	SC-B-81299

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SECTION IV

MAINTENANCE ALLOCATION

5. General

a. This section assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon.

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 is included only where clarification is necessary to identify the part. Components and parts comprising a major end item are listed alphabetically. Assemblies and subassemblies are in alphabetical sequence with their components listed alphabetically immediately below the assembly listing.
- (2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelon capable of performing the operations.
 - (a) *Service.* To clean, to preserve, and replenish fuel and 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, 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 re-

quired 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 its component parts and reassembling it using serviceable, rebuilt, or new assemblies, subassemblies, and parts.

(3) *1st, 2d, 2d, .4th, 5th echelon.* The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon 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 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.

(1)				(2)				(3)				(4)				(5)	(6)	(7)	(8)		(9)
SOURCE MAINTENANCE AND RECOVERABILITY CODE				FEDERAL STOCK NUMBER				DESIGNATION BY MODEL				DESCRIPTION				UNIT OF ISSUE	EXPEND- ABILITY	QUANTITY AUTHO- RIZED	ILLUSTRATION		
																			FIGURE NO.	ITEM NO.	
				5315-247-5487										AB 86/GRA-4 (continued)							
														PIN, STRAIGHT, HEADLESS: joins stake assy to mast holder; SigC dwg	EA	X	1		*		
				5975-355-9361										No. SC-D-28052, item 2	EA	X	3		*		
				4020-202-1345										PLATE, GUY MX 1470/U: disc shape; SigC dwg No. SC-B-30440	FT	X	624		*		
														ROPE DACRON: 3 strands; olive drag; SigC dwg Noc. SC-D-28053-1							
														(Note: To be requisitioned as required in minimum length of 145 ft or multiples thereof)							
				5975-241-6236										SPLICE, CONDUCTOR: split bolt type; Burndy part KS-14	EA	X	2		*		
				4030-187-5265										STAKE, GP 101/U: SigC dwg No. SC-D-28051-D	EA	X	1		*		
				5975-097-3202										STAKE, GUY GP 111/G: Amphenol part No. A-161-766	EA	X	4		*		
				4030-292-3376										SWAGING SLEEVE, WIRE ROPE: brass; f 3/1 in dia rope; Sig C dwg	EA	X	13		*		
														No. SC-B-76232-1							
				4030-272-8824										THIMBLE, ROPE: designed f/wire rope; SigC dwg No. SC-D-31890-2	EA	X	15		*		
				5340-200-7073										TURNBUCKLE: open eye type; Wilcox Crittenden type G-301	EA	X	1		*		
				6145-160-5114										WIRE, ELECTRICAL: W 128; ins; single No. 11 AWG; MIL spec S-13075	FT	X	10		*		
														(Note: To be requisitioned as required in minimum length of 10 ft or multiple thereof.)							
				6145-613-1023										WIRE, ELECTRICAL MIL type CO IOUGE(1/11)0260 (Note: To Be requisitioned as required in minimum length of 1 ft or multiples thereof.)	FT	X	4		*		
				6145-161-6716										WIRE, ELECTRICAL::18 AWG; 11 strands, 31 AWG; Simplex Wire and Cable type S except ins per A spec 71 1915 (Note: To be requisitioned as required in minimum length of 3 ft or multiples thereof.)	FT	X	100		*		
				4010-202-1347										WIRE ROPE STEEL: MIL spec C-5121 (Note: To be requisitioned as required in minimum of 3 ft or multiples thereof.)	FT	X	3		*		

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- (2) *1st, 2d, 3d, 4th, 5th echelon.* A dagger (†) symbol indicates the echelons allocated the facility.
- (3) *Tool code.* This column lists the tool code assigned.

6. Maintenance by Using Organizations

When this equipment is used by signal service organizations organic to theater headquarters or communication zones to provide theater

communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

7. Mounting Hardware

The basic entries of the maintenance allocation chart do not include mounting hardware such as screws, nuts, bolts, washers, brackets, clamps, etc.

Section VI. MAINTENANCE ALLOCATION CHART

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
ANTENNA MAST ASSEMBLY AB-86/GRA-4	service		X					No Facilities required 2
	adjust		X				1X 2 2	
	inspect		X	X	X			No Facilities required
	test		X				3	
	replace		X					
repair				X			2	
rebuild					X			
ADAPTER MAST MX 857/GRA-4 COUNTERPOISE, ANTENNA CP 12	replace		X					
	rebuild		X					
FRAME MX 1116/GRA-4 TURNBUCKLE GUY	replace			X				
	replace			X				
	replace			X				
	replace			X				
HALLYARD MX 516/GRA-4	rebuild				X			
	replace		X					
BLOCK. TACKLE CLAMP	rebuild			X				
	replace		X					
FASTENER, HALYARD ROPE	replace		X					
	replace		X					
HAMMER	replace		X					
INSULATOR MX-384/GRA-4	replace		X					
MAST BASE AB 154/U	replace		X					
PIN, STRAIGHT	repair		X					
PLATE ANTENNA MAST	replace		X					
MAST SECTION AB-85/GRA-4	replace		X					
PLATE, GUKY MX 1470/U	replace		X					
HOOK	replace		X					
INSULATORS	replace		X					
SWAGING, SLEEVE	replace		X					
TIHIMBLE	replace		X					
STKE, GUY GP 111/G	replace		X					
WIRE	replace		X					
SPLICE, CONDUCTOR	replace		X					
WIIRE, ROPE	replace		X					

AB 86/GRA 4

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

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8-137	44-437
9-65	44-535
9-67	44-537
9-117	55-11
10-22	55-12
10-377	55-16
10-536	55-46
11-5	55-56
11-7	55-57
11-16	55-116
11-57	57

NG: None.

USAR: None.

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

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