DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

SIGNAL LAMP EQUIPMENT SE-11 AND SE-11-A

This copy is a reprint which includes current pages from Changes 1 and 2.

HEADQUARTERS, DEPARTMENT OF THE ARMY

21 AUGUST 1964

Changes In force: C 1 and C 2

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *21 December 1973*

Operator's and Organizational Maintenance Manual

SIGNAL LAMP EQUIPMENTS SE-11 AND SE-11A

TM 11-5850-201-12, 21 August 1964, is changed as follows:

Page 3. Paragraph 3, is superseded as follows:

3. 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).

Page 4. After paragraph 3, paragraph 3.1 is added as follows:

3.1. Reporting of Equipment Publication Improvements

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 and Publications) and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-C, Fort Monmouth, NJ 07703.

After paragraph 5 add:

5.1. Items Comprising an Operable Equipment

FSN	Quantity SE-11	Quantity SE-11A	Nomenclature, part No., and mfr code	Fig. No.
5850-407-6671			Signal Lamp Equipments SE-11 and SE-11A Consisting of:	
			NOTE **The part number is followed by the applicable 5digit Federal supply code for manufacturers (FSCM) Identified in SB 70&-42 and used to identify manufacturer, distributor, of Government agency, etc.**	
6135-120-1020			Battery, Dry BA-30; 1½ V.	4
			NOTE **Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization in accordance with SB 11-6.**	
5995-162-6953	1	1	Cable Assembly, Pwr Elec CD-701: SCD-8978; 80063.	1, 4
6650-246-2404	1	1	Filter Assembly MC-430: SC-D-7083; 80063	
4240-540-0757	1	1	Goggles, Sun M-172A: SC-D-615; 80063	1, 4
5840-407-6643	1		Gunstock M341: SC-D-8977; 80063	1, 2, 4
		1	Gunstock M-437: SCD-17390; 800683	1
5805-162-1292	1	1	Key, Telegraph J-1: SC-D-8976; 80063	1, 4
5850-537-7751	1		Signal Lamp M-227: SCI-8967; 80063	1, 2, 4
5850-356-3718	1		Signal Lamp M438: SCD-17317; 80063	1, 2, 4
5850-498-8141	1	1	Tripod, Electrical Equip LO-21: SC-D-8975; 80063.	1, 4

Page 6. In paragraph 6, change the title to:

Components and Dimensions

Delete the last sentence of the note.

Page 31. Appendix III is superseded as follows:

APPENDIX III
BASIC ISSUE ITEMS LIST (BIIL) AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST (ITIAL)

Section I. INTRODUCTION

A3-1. Scope

This appendix lists only basic issue items required by the crew/operator for installation, operation, and maintenance of Signal Lamp Equipments SE-11 and SE-11-A.

A3-2. General

This basic issue items and items troop installed or authorized list is divided into the following sections:

a. Basic Issue Items List-Section II. A list, in alphabetical sequence, of items which are furnished with, and which must be turned in with the end item.

b. Items Troop Installed or Authorized List-Section III. Not applicable.

A3-3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings:

a. Illustration. This column is divided as follows

(1) Figure Number. This column indicates the figure number of the illustration in which the item is shown.

(2) Item Number. Not applicable.

b. Federal Stock Number. This column indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Part Number. This column indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements, to identify an item or range of items.

d. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency; etc., and is identified in SB 708-42.

e. Description. This column indicates the Federal item name and a minimum description required to identify the item.

f. Unit of Measure (U/M). This column indicates the standard or basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation, (e.g., ea, in., pr; etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

g. Quantity Furnished with Equipment. This column indicates the quantity of the basic issue item furnished with the equipment.

A3-4. Special Information

Usable-on codes are included in the description column. Uncoded items are applicable to all models. Identification of the usable-on codes are as follows:

Code	Used on
1	SE-11
2	SE-11A

Section II. BASIC ISSUE ITEMS UST

(1) ILLUSTRATION (A) FIG NO	(1) ILLUSTRATION (B) ITEM NO	(2) FEDERAL STOCK NUMBER	(3) PART NUMBER	(4) FSCM	(5) DESCRIPTION	USABLE-ON CODE	(6) UNIT OF MEAS	(7) QTY FURN WITH EQUIP
1		5850-407-8630	SC-D-17326	80063	BAG, BT-194		EA	1
		5850-170-5162	24-C-7300		COVER, USED AS PROTECTIVE COVER 56 IN. LG X 8 IN. W, WATERPROOF, Q. M.	1	EA	1

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)
USACC (4)
MDW (1)
Armies (2)
Corps (2)
HISA (ECOM) (21)
Svc Colleges (1)
USASESS (5)
USAADS (2)
USAFAS (2)
USAARMS (2)
USAIS (2)
USAES (2)
USAINTS (3)
WRAMC (1)
USACDCEC (10)
ATS (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 (80)
- TOAD (14)
- ATAD (10)

USA Dep (2)
Sig Sec US Dep (2)
Sig Dep (2)
Sig FLDMS (1)
USAERDAA (1)
USAERDAW (1)
MAAG (1)
USARMIS (1)
Units org under fol TOE (1 each):
- 1-55
- 1-46
- 1-165
- 1-66
- 1-167
- 1-256
- 5-405
- 5-408
- 7-168
- 10-206
- 11-97
- 11-98
- 11-117
- 11-127
- 11-158
- 11-500(AA-AC)
- 29-134
- 29-186
- 31-105
- 31-107
- 55-116
- 55-128
- 55-129
- 55-138

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

CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *3 March 1970*

Operator and Organizational Maintenance Manual

SIGNAL LAMP EQUIPMENTS SE-11 AND SE-11A

TM 11-850-201-12, 21 August 1964, is changed as follows:

Page 3, paragraph 2. Delete and substitute:

2. Indexes of Publications

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

b. DA Pam 310-7. Refer to the latest issue of DA Pam 310-7 to determine whether there are Modification Work Orders (MWO's) pertaining to the equipment.

Paragraph 3. Delete and substitute:

3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions in TM 38750.

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 Publication 378 (Navy), AFR 71-4 (Air Force), and MCO P4610-5 (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).

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

Page 25, Appendix I. Delete and substitute:

TAGO 8020B

APPENDIX I

REFERENCES

Following is a list of applicable references available to the user of Signal Lamp Equipments SE-11 and SE-11A.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders
DA Pam 310-7	U. S. Army Equipment Index of Modification Work Orders
MIL-STD-129D	Marking for Shipment and Storage
SB 11-6	Dry Battery Supply Data
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronic Command Equipment
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies and Equipment Used by the Army
TB 746-10	Field Instructions for Painting and Preserving Electronics Command
TM 9-213	Painting Instructions for Field Use
TM 11-5850-201-20P	Organizational Maintenance Repair Parts and Special Tools Lists for Signal Lamp Equipments SE-11 and SE-11A TM 11-6625-203-12Operator and Organizational Maintenance: Multimeter AN/URM-105, Including Multimeter ME-77/U
TM 38-750	Army Equipment Record Procedures

Page 26, appendix II. Delete and substitute:

APPENDIX II

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

A2-1. General

This appendix provides a summary of the maintenance operations covered in the equipment literature for Signal Lamp Equipments SE-11 and SE-11A. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

A2-2. Maintenance Functions

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards.

b. Test. To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc. This is accomplished with external test equipment and does not include operation of the equipment and operator type tests using internal meters or indicating devices.

c. Service. To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents, and air. If it is desired that elements, such as painting and lubricating, be defined separately, they may be so listed.

d. Adjust. To rectify to the extent necessary to bring into proper operating range.

e. Align. To adjust two or more components or assemblies of an electrical or mechanical system so that their functions are properly synchronized. This does not include setting the frequency control knob of radio receivers or transmitters to the desired frequency.

f. Calibrate. To determine the corrections to be made in the

readings of instruments or test equipment used in precise measurement. Consists of the comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared with the certified standard.

g. Install. To set up for use in an operational environment such as an encampment, site, or vehicle.

h. Replace. To replace unserviceable items with serviceable like items.

i. 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.

j. Overhaul. Normally, the highest degree of maintenance performed by the Army in order to minimize time work in process is consistent with quality and economy of operation. It consists of that maintenance necessary to restore an item to completely serviceable condition as prescribed by maintenance standards in technical publications for each item of equipment. Overhaul normally does not return an item to like new, zero mileage, or zero hour condition.

k. Rebuild. The highest degree of materiel maintenance. It consists of restoring equipment as nearly as possible to new condition in accordance with original manufacturing standards. Rebuild is performed only when required by operational considerations or other paramount factors and then only at the depot maintenance category. Rebuild reduces to zero the hours or miles the equipment, or component thereof, has been in use.

l. Symbols. The uppercase letter placed in the appropriate column indicates the lowest level at which that particular maintenance function is to be performed.

A2-3. Explanation of Format

a. Column 1, Group Number. Not applicable.

b. Column 2, Functional Group. Column 2 lists the noun names of components, assemblies, subassemblies and modules on which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the maintenance category at which performance of the specific maintenance function is authorized. Authorization to perform a function at any category also includes authorization to perform that function

tion at higher categories. The codes used represent the various maintenance categories as follows:

Code	*Maintenance Category*
C	Operator/Crew
0	Organizational Maintenance
F	Direct Support Maintenance
H	General Support Maintenance
D	Depot Maintenance

d. Column 4, Tools and Test Equipment. Column 4 specifies, by code, those tools and test equipment required to perform the designated function. The numbers appearing in this column refer to specific tools and test equipment which are identified in table I.

e. Column 5, Remarks. Self-explanatory.

A2-4. Explanation of Format of Table I, Tool and Test Equipment Requirements

The columns in table I are as follows:

a. Tools and Equipment. The numbers in this column coincide with the numbers used in the tools and equipment column of the maintenance allocation chart. The numbers indicate the applicable tool for the maintenance function.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated the facility.

c. Nomenclature. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

d. Federal Stock Number. This column lists the Federal stock number of the specific tool or test equipment.

e. Tool Number. Not used.

SECTION II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	Signal Lamp Equipment SE-11 and SE-11A	O	O						0				1 and 3	Exterior. Rest and replace batteries. Inspect and clean filters.
			F		F					F			2 and 4	Test and repair complete equipment. Clean and adjust relay.
											H		2, 3 and 4	All tests adjustments and repairs.
												D	2, 3 and 4	Rebuild and checkout complete equipment.

TABLE I. TOOL AND TEST EQUIPMENT REQUIRMENTS

TOOLS EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
1	O	Multimeter, AN/URM-105( )	6625-581-2036	
2	F, H, D	Multimeter, TS-352( ) /U	6625-242-5023	
3	H, D	Tool Equipment TE-49	5180-408-1863	
4	F, H, D	Tool Kit, Radar and Radio Repairman, TK-87/U	5180-690-4552	

Page 31, appendix III. Delete and substitute:

APPENDIX III

BASIC ISSUE ITEMS

Section I. INTRODUCTION

A3-1. Scope

This appendix lists items which accompany the Signal Lamp Equipments SE-11 and SE-11A or are required for installation, operation, or operator's maintenance.

A3-2. General

This basic issue items list is divided into the following sections:

a. Basic Issue Items-Section II. A list of items which accompany the SE-11 and SE-11A and are required by the operator/ crew for installation, operation, or maintenance.

b. Maintenance and Operating Supplies-Section III. Not applicable.

A3-3. Explanation of Columns

The following provides an explanation of columns in section II.

a. Source, Maintenance, and Recoverability Codes (SMR), Column 1.

(1) Source codes indicate the selection status and source for the listed item. Source codes are --

Code	***Explanation***
P	Repair parts which are stocked in or supplied from the GSA/DSA, or Army supply system and authorized for use at indicated maintenance categories.
P2	Repair parts which are procured and stock for insurance purposes because the combat or military essentiality of the end item dictates that a minimum quantity be available in the supply system.
P9	Assigned to items which are NSA design controlled: unique repair parts, special tools, test, measuring and diagnostic equipment, which are stocked and supplied by the Army COMSEC logistic system, and which are not subject to the provisions of AR 380-41.

Code ***Explanation***

P10--Assigned to items which are NSA design controlled: special tools, test, measuring, and diagnostic equipment for COMSEC support, which are accountable under the provisions of AR 380-41, and which are stocked and supplied by the Army COMSEC logistic system.

M--Repair parts which are not procured or stocked, but are to be manufactured at indicated maintenance levels.

A--Assemblies which are not procured or stocked as such, but are made up of two or more units. Such component units carry individual stock numbers and descriptions, are procured and stocked separately and can be assembled to form the required assembly at indicated maintenance categories.

X--Parts and assemblies which are not procured or stocked and the mortality of which normally is below that of the applicable end item or component. The failure of such part or assembly should result in retirement of the end item from the supply system.

X1--Repair parts which are not procured or stocked. The requirement for such items will be filled by use of the next higher assembly or component.

X2--Repair parts which are not stocked. The indicated maintenance category requiring such repair parts will attempt to obtain same through cannibalization. Where such repair parts are not obtainable through cannibalization, requirements will be requisitioned with accompanying justification, through normal supply channels.

C--Repair parts authorized for local procurement. Where such repair parts are not obtainable from local procurement, requirements will be requisitioned through normal supply channels accompanied by a supporting statement of nonavailability from local procurement.

G--Major assemblies that are procured with PEMA funds for initial issue only as exchange assemblies at DSU and GSU level. These assemblies will not be stocked above DS and GS level or returned to depot supply level.

(2) Maintenance code indicates the lowest category of maintenance authorized to install the listed item. The maintenance level code is:

Code	***Explanation***
C	Operator/crew

(3) Recoverability codes indicate whether unserviceable items should be returned for recovery or salvage. Items not coded are expendable. Recoverability codes are

Code	***Explanation***
R	Repair parts and assemblies that are economically repairable at DSU and GSU activities and are normally furnished by supply on an exchange basis.
S	Repair parts and assemblies which are economically repairable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. When items are determined by a GSU to be uneconomically repairable, they will be evacuated to a depot for evaluation and analysis before final disposition.
T	High-dollar value recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts normally are repaired or overhauled at depot maintenance activities.
U	Repair parts specifically selected for salvage by reclamation units because of precious metal content, critical materials, or high-dollar value reusable casings or castings.

b. Federal Stock Number, Column 2. This column indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Description, Column 3. This column indicates the Federal item name and any additional description of the item required. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses.

d. Unit of Measure (U/M), Column 4. A 2-character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ft, ea, pr, etc.

e. Quantity Incorporated in Unit, Column, 5. This column indicates the quantity of the item used in the SE-11 and SE-11A. A "V" appearing in this column in lieu of a quantity indicates that a definite quantity cannot be indicated (e.g., shims, spacers, etc.).

f. Quantity Furnished With Equipment, Column 6. This column indicates the quantity of an item furnished with the equipment.

g. Illustration, Column 7. This column is divided as follows:

(1) Figure number, column 7a. This column indicates the figure number of the illustration in which the item is shown.

(2) Item number, column 7b. This column indicates the call out number used to reference the item in the illustration.

A3-4. Explanation of Columns in the Tabular List of Maintenance and Operating Supplies-Section III

Not applicable.

A3-5. Special Information

a. Identifications of the usable on codes included in column 3 of this appendix are

Code	***Used on--***
1	SE-11
2	SE-11A

b. Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization, in accordance with SB 11-6.

A3-6 Federal Supply Code for Manufacturer's.

Code	*Manufacturer's name*
80063	Army Electronics Command

SECTION II. BASIC ISSUE ITEMS SE-11 & SE-11A

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NO. & MFR. CODE	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC. IN UNIT	(6) QTY FURN WITH EQUIP	(7) ILLUSTRATIONS (a) FIG. NO.	(7) ILLUSTRATIONS (b) ITEM NO.
C-C-S	5850-407-6671	Signal Lamp Equipments SE-11 and SE-11A: (THIS ITEM IS NONEXPENDABLE) TECHNICAL MANUAL TM 11-5850-201-12 Requisition through pinpoint account number if assigned; otherwise through nearest Adjutant General facility. **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 the minimum actual requirements as determined by the commanding officer of the unit.**					1 4	1
P-C--	5850-407-6630	BAG, BG-194: SCD17326; (80063)	1.2	ea	1		1	1A1
P-C--	6135-120-1020	BATTERY BA-30 (Not Furnished With Equipment. Order Separately) Dry Cell, 1-1/2V:	1, 2	ea	5		1 4	
P-C--	5850-170-5162	COVER: Used as protective cover; 56 in. Lg X 8 in. W: Waterproof: Q.M. Part No. 24-C-7300	1	ea	1			
P-C--	5995-162-6953	CABLE ASSEMBLY, PWR, ELEC CD-701: SCD8978; (80063)	1, 2	ea	1		1 4	1W1
P-C--	6650-246-2404	FILTER ASSEMBLY MC-430: SCD7083; (80063)	1, 2	ea	1		1 4	1A2

SECTION II. BASIC ISSUE ITEMS SE-11 & SE-11A

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NO. & MFR. CODE	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC. IN UNIT	(6) QTY FURN WITH EQUIP	(7) ILLUSTRATIONS (a) FIG. NO.	(7) ILLUSTRATIONS (b) ITEM NO.
P-C--	4240-540-0757	GOGGLES, SUN M-172A: SCD6615; (80063)	1, 2	ea	1		1 4	1A3
P-C--	5850-407-6643	GUNSTOCK M-341: SCD-8977; (80063)	1	ea	1		1 2	1A4
P-C--	5850-099-0678	GUNSTOCK M-437: SCD17390; (80063)	2	ea	1		1	1A4
P-C--	5805-162-1292	KEY, TELEGRAPH J-51: SCD8976; (80063)	1, 2	ea	1		1 4	1A5
P-C--	5850-498-8141	TRIPOD, ELECTRICAL EQUIP LO-21: SCD8975; (80063)	1, 2	ea	1		1 4	1A6
P-C-S	5850-537-7751	SIGNAL LAMP M-227: SCD8967; (80063)	1	ea	1		1 2	1A7
P-C-S	5850-356-3718	SIGNAL LAMP M-438: SCD17317 .(80063)	2	ea	1		1 2	1A7
P-C--	6240-299-6767	LAMP, INCANDESCENT LM-61. SCD17317-10; (80063)	1, 2	ea	1	10	1 2	1A7DS1
		NO ACCESSORIES, TOOLS OR TEST EQUIPMENT ARE TO BE ISSUED WITH THIS EQUIPMENT NO BASIC ISSUE ITEMS ARE MOUNTED IN OR ON THIS EQUIPMENT						

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:

KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:
Active Army:

USASA (2)
CNGB (1)
ACSC-E (2)
Dir of Trans (( )
CofEngrs (1)
TSG (1) WSMR (5)
CofSptS (1)
USAARENBD (2)
USACDC Agcy (1)
USAMC (1)
USCONARC (5)
ARADCOM (5)
ARADCOM Rgn (2)
OS Maj Comd (4)
LOGCOMD (2) except
1st & 9th (10)
USAMICOM (4)
USATECOM (2)
USASTRATCOM (4)
USAESC (70)
MDW (1)
Armies (2)
Corps (2)
1st Cav Div (5)
Svc Colleges (2)
USASCS (2)
USASESS (5)
USAADS (2)
USAFAS (10)
USAARMS (10)
USAIS (10)
USAES (2)
USAINTS (3)
USATC Armor (2)
USATC Inf (2)
USAS/TC&FG (2)
WRAMC (1)
Army Pic Cen (2)
USACDCEC (10)
USMACV (50)
USACRREL (2)
Instl (2) except
Fort Gordon (10)
Fort Huachuca (10)
Fort Carson (25)
Fort Knox (12)

Army Dep (2) except
LBAD (14)
SAAD (30)
TOAD (14)
LEAD (7)
SHAD (3)
NAAD (5)
SVAD (5)
CHAD (3)
ATAD (10)
Gen Deps (2)
Sig Sec Gen Deps (5)
Sig Dep (12)
Sig FLDMS (2)
USATOPOCOM (1)
USAERDAA (2)
USAERDAW (13)
MAAG (2)
USARMIS (2)
Units org under fol TOE:
(2 copies each)
1-55
1-56
1-76
1-100
1-101
1-165
1-166
1-167
1-256
5-405
5-408
7-168

10-206
11-57
11-97
11-98
11-117
11-127
11-1658
11-500 (AA-AC)
29-7
29-56
31-105
31-107
55-116
55-128
55-129
55-138

NG: None.

USAR: None.

For explanation of abbreviations used, see AR 310-50.

TECHNICAL MANUAL
No. 11-5850-201-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *21 August 1964*

Operator and Organizational Maintenance Manual

SIGNAL LAMP EQUIPMENTS SE-11 AND SE-11A

* This manual supersedes so much of TM 11-392, 30 June 1943, with C 1, 6 March 1963; C 2, 9 May 1963; C 3, 2 October 1963; TB 11-392-1, December 1944, and TB 11-392-2, 30 August 1946, as pertains to operator's and organizational maintenance.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual describes Signal Lamp Equipments SE-11 and SE-11A and covers installation, operation, and operator's and organizational maintenance. It includes operation under usual and unusual conditions, cleaning and inspection of the equipment, and replacement of parts available to the operator and organizational maintenance personnel.

b. The maintenance allocation chart and the basic issue items list appear in appendixes II and III, respectively.

c. Official nomenclature followed by (*) is used to indicate all models of the equipment item covered in this manual. Thus, Signal Lamp Equipment SE-11 (*) represents Signal Lamp Equipment SE-11 and Signal Lamp Equipment SE-11A.

2. 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 the equipment. DA Pam 310-4 is an index of current technical manuals, technical bulletins, supply manuals, supply bulletins, lubrication orders, and modification work orders 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.

3. Forms and Record.

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 publications) 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 General, U.S. Army Electronics Command, ATTN: AMSEL-MR-MP-P, Fort Monmouth, N.J., 07703. One information copy will be furnished to the individual's immediate supervisor (officer, noncommissioned officer, supervisor, etc.).

Section II. DESCRIPTION AND DATA

4. Purpose and Use

a. Purpose. Signal Lamp Equipment SE-11(*) (fig. 1) is used for slow-speed, point-to-point, visual Morse code communications requiring some degree of security.

b. Use. The SE-11(*) is used to transmit red or white flashes of light under field conditions. It may be hand-held or tripod-mounted for direct or remote operation.

5. Technical Characteristics

Code speed:
- Normal ..... 10 words per minute.
- Maximum ..... 12 words per minute.

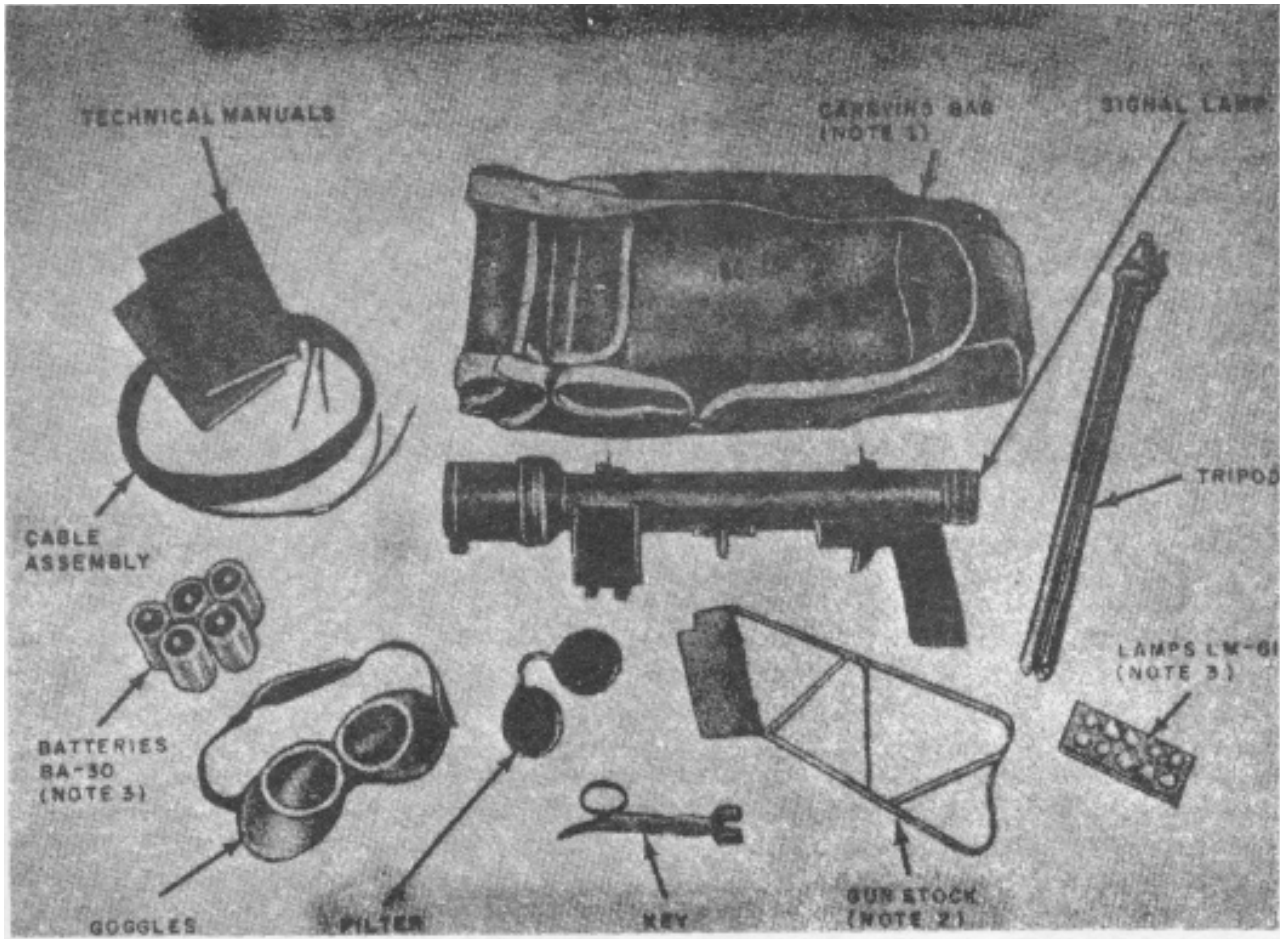
Filters ..... Three red polystyrene; one transmitting, two receiving.

Maximum ranges:
- Daylight with no filter ..... 2,000 yards.
- Daylight with red filter ..... 1,000 yards.
- Night with no filter ..... 5 miles.
- Night with red filter ..... 2 ½ miles.

Beam projection angle ..... 8°

Weight:
- Operating ..... 5.8 lb.
- Total (including spares) ..... 9.1 lb (max).

Power source ..... Five self-contained batteries BA-30.



NOTES:

1. **SIGNAL LAMP EQUIPMENT SE-11 USES BAG BG-131; SIGNAL LAMP EQUIPMENT SE-11A USES BAG BG-194.**
2. **SIGNAL LAMP EQUIPMENT SE-11 USES GUNSTOCK M-541 SIGNAL LAMP EQUIPMENT SE-11A USES GUNSTOCK M-457**
3. **SIGNAL LAMP EQUIPMENT SE-11 HAS 10 SPARE LAMPS LM -61 AND 5 SPARE BATTERIES; SIGNAL LAMP EQUIPMENT SE-11A HAS 5 SPARE LAMPS LM-61 AND NO SPARE BATTERIES.**

*Figure 1. Signal Lamp Equipment SE-11 (*), components and spares.*

6. Table of Components

Note. **This listing is based on the original shipment by the contractor on Order No. 16320-Phila-43 (Signal Lamp Equipment SE-11) and Order No. 37909-PC-62 (Signal Lamp Equipment SE-11A). For the current official listing of components of individual models, see the basic issue items list, appendix III.**

Quantity			Dimensions (in.)			
Signal Lamp Equipment SE-11	Signal Lamp Equipment SE-11A	Item	Length	Width	Height	Weight (lb)
1	- - - - - - -	BAG BG-131	20	8	5 1/2	1.2
	1	BAG BG-194	20 1/2	8	5 1/2	1.2
5[a]	5	Battery BA-30	2 1/4	1 1/4 (dia)		0.2
1	1	Cable Assembly, Power Electrical CD-701,	180 lg			0.4
1 pr	1 pr	Goggles M-172	8	2 3/4 (dia)		0.3
1 pr	1 pr	Filter MC-430		1 15/16 (dia)	1	0.1
1		Gunstock M-341		4 1/2 dia	3/8	0.4
	1	Gunstock M-437	11	4 1/2	3/8	0.4
1	1	Key, Telegraph J-51	5 3/4	1/2	1 1/16	0.1
1		Signal Lamp M-227	18 1/2	1 3/4	6	2.1
	1	Signal Lamp M-438	18 1/2	1 3/4	6	2.1
1	1	Tripod LG-21	17	1 5/8 (dia)		1.4
1[a]	1	Lamp, Incandescent LM-61	1 19/32	9/16 (dia)		0.1

[a] Signal Lamp Equipment SE-11 has 5 spare batteries and 10 spare Lamps LM-61; Signal Lamp Equipment SE-11A ha no spare batteries and 5 spare Lamps LM-61.

7. Common Names

A list of common name assignments for the components of Signal Lamp Equipments SE-11 and SE-11A is given below. The nomenclature assignment is indicated after each common name.

Common name	Nomenclature
Carrying bag	Bag BG-131 or Bag BG-194
Cable assembly	Cable Assembly, Power, Electrical CD-701
Goggles	Goggles M-172
Filter	Filter MC-430
Gunstock	Gunstock M341 or Gunstock M-437
Key	Key, Telegraph J-51
Signal lamp	Signal Lamp M-227 or Signal Lamp M438
Tripod	Tripod LG-21
Battery	Battery BA30

8. Description of Components

a. Bag BG-131 (fig. 1) and Bag BG-194 are used to house the components of SE-11 and SE-11A respectively. Each bag has three sections. The smaller front section of each bag is divided into two compartments. Each section of Bag BG-131 has an individual coverflap and is secured with a snap fastener. Bag BG-194 has one overall coverflap for all the sections. An adjustable shoulder strap is secured to the top of each bag for carrying.

b. The cable assembly is a 15-foot, two-conductor cable which connects the key to the signal lamp for remote operation. The conductor ends terminate in phone tips which are inserted into the key and signal lamp binding post.

c. The goggles are red filters mounted in a rubber frame. Straps with a hook fastener are attached to the frame to hold the goggles firmly over the eyes. Red light flashes from the signal lamp can best be seen through these goggles.

d. Filter MC-430 is used in conjunction with various field glasses to enable the observer to detect distant red flashes.

e. Gunstock M-341 and Gunstock M-437 are used with Signal Lamp Equipments SE-11 and SE-11A respectively to enable the operator to sight the signal lamp like a rifle.

f. The key is a hand-held telegraph key used to operate the signal lamp remotely.

g. Signal Lamp M-227 (fig. 1) and Signal Lamp M-438 each contain five batteries, front and rear sights (fig. 2), a trigger, a

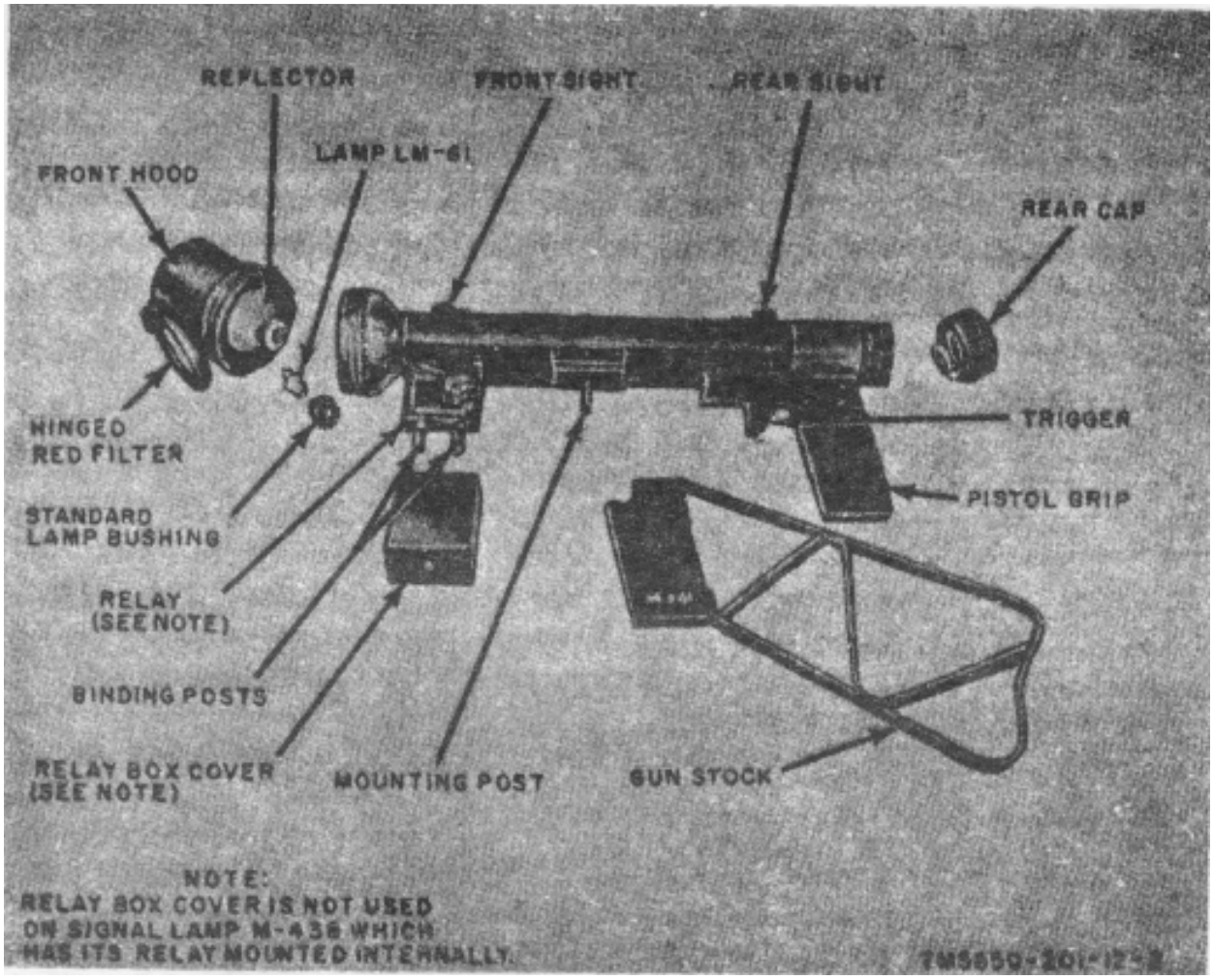


Figure 2. Signal lamp, part location

pistol grip, a mounting post, two binding posts, a relay, a lamp, a hinged red filter, and a front hood.

h. Tripod LG-21 (fig. 1) supports the signal lamp and prevents undesired motion during transmissions.

9. Differences in Models

The following table lists the differences between Signal Lamp Equipments SE-11 and SE-11A.

Item	Signal Lamp Equipment SE-11	Signal Lamp Equipment SE-11A
Bag BG-131 and BG-194.	Bag BG-131 is flexible, smaller than bag BG-194, and has an individual cover flap for each section.	Bag BG-194 is rigid, larger than Bag BG-131, and has only one overall cover flap for all sections.
Gunstock M-341 and M-437.	Gunstock M-341 is similar to Gunstock M-437 except that metal sleeve used to attach gunstock to signal lamp is smaller.	Gunstock M-437 has a larger metal sleeve than that used on M-341.
Signal Lamp M-227and M-438	Signal Lamp M-227 has relay assembly mounted externally on signal lamp barrel, and binding posts are mounted on relay assembly.	Signal Lamp M-438 is larger than M-227 and has a different pistol grip. M-438 is waterproof and had relay assembly mounted in signal lamp barrel, and binding post mounted directly on forward under side of signal lamp barrel.
Batteries BA-30	5 spares supplied.....	No spares supplied
Lamp LM-61	10 spares supplied.....	5 spares supplied

CHAPTER 2

INSTALLATION AND OPERATION

Section I. SERVICE ON RECEIPT OF EQUIPMENT

10. Unpacking

For shipment, the equipment is packed in a weather-resistant fiberboard box. The equipment is further protected by an inner weather-resistant fiberboard box. The dimensions of the packed equipment are 21 by 9 by 6 inches, the volume is 0.6 cubic feet, and the weight is 9.1 pounds.

a. Select a location where the equipment may be unpacked without exposure to the elements.

Caution: **Do not thrust tools into the interior of the fiberboard boxes; the equipment might become damaged.**

b. Open the outer fiberboard box (fig. 3) and remove the inner fiberboard box.

c. Open the inner fiberboard box and remove the contents.

11. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DA Form 6 (para. 3).

b. Check to see that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the basic issue items list (appx. III). Report all discrepancies in accordance with TM 38-750. Shortage of a minor assembly or part that does not affect the proper functioning of the equipment should not prevent use of the equipment.

c. If the equipment has been used or reconditioned, see whether it has been changed by a modification work order (MWO). If the equipment has been modified, the MWO number will appear on the equipment. Check to see whether the MWO number (if any) and appropriate notations concerning the modification have been entered in the equipment manual.

Note. Current MWO's applicable to the equipment are listed in DA Pam 310-4.

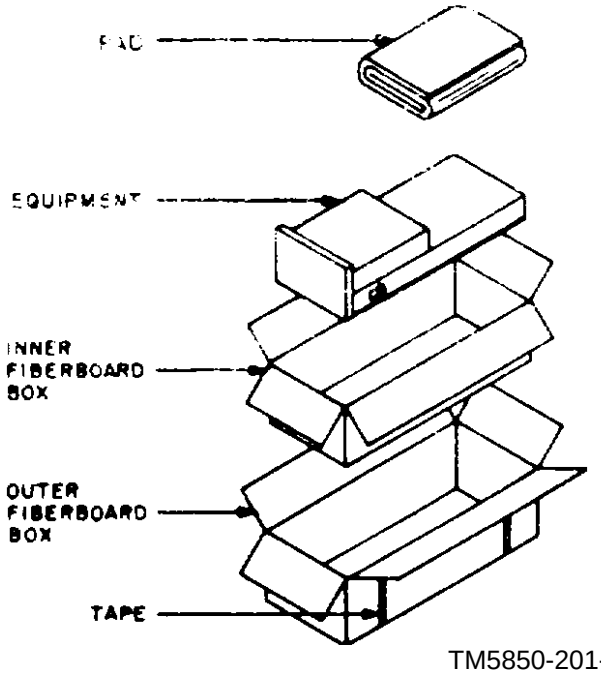


Figure 3. Typical packing diagram.

12. Installation

Prepare the signal lamp for operation as follows:

a. Lamp Installation.

(1) Unscrew and remove the front hood assembly (fig. 2) from the signal lamp.

(2) Unscrew the lamp bushing and insert Lamp, Incandescent LM-61 in the front hood assembly.

(3) Secure the lamp with the bushing and assemble the front hood assembly to the signal lamp.

b. Battery Installation. Inspect the batteries before inserting them in the signal lamp. Check to see that they are clean, not deformed, and not leaking. Use Multimeter AN/URM-105 to check the voltage of each battery before installation.

(1) Remove the rear cap from the signal lamp.
Caution: **Do not hold the signal lamp so that the batteries can drop straight down; avoid damage to the internal components of the signal lamp by inserting the batteries horizontally and sliding them toward the front of the signal lamp.**

(2) Insert five batteries; use each battery to help slide the preceding battery toward the front of the signal lamp.

(3) Assemble the rear cap to the signal lamp.

c. Hinged Red Filter.

(1) Position the hinged red filter in front of the lamp for red transmissions.

(2) Position the hinged red filter below the front hood assembly for white transmissions.

d. Gunstock M-341 or M-437. Slide the gunstock on the pistol grip until the spring catch operates.

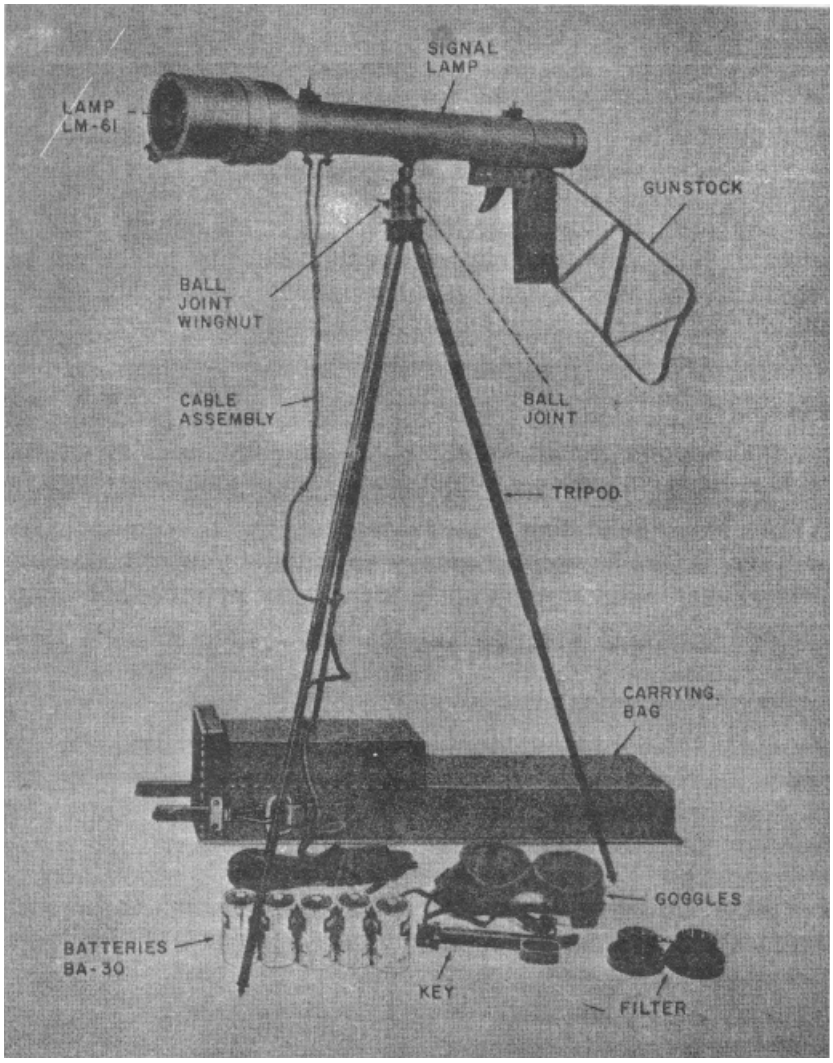
e. Tripod LG-21.

(1) Extend the legs of the tripod (fig. 4) to the desired height.

(2) Insert the mounting stud of the signal lamp into the opening of the tripod ball joint.

(3) Position the signal lamp for the approximate transmission path.

(4) Tighten the tripod ball joint wingnut to secure the signal lamp.



TM5850-201-12-3

*Figure 4. Signal Lamp Equipment SE-11 (*), components connected for remote control.*

f. Key, Telegraph J-1 Installation.

(1) Connect one end of the cable assembly to the binding posts of the signal lamp.

(2) Connect the remaining end to the binding posts of the key.

Section II. OPERATION UNDER USUAL CONDITIONS

13. Operating Procedures

a. General.

(1) The signal lamp has a normal keying range of 6 to 10 words per minute. Keying the signal lamp at a rate faster than 12 words per minute results in loss of signal detail. Key the signal lamp slowly; use a heavy touch to make the signals longer.

(2) Since the signal lamp projects a narrow beam, it is necessary to aim it carefully. Use the tripod for maximum aiming stability.

(3) When the hinged red filter (fig. 2) is used, the transmission range is reduced, and detection of the signal lamp flashes by the enemy becomes more difficult. Conversely, white light transmissions have greater range, but are more easily detectable.

(4) Red light transmissions from the signal lamp are best observed through the goggles or the filter (used in conjunction with a pair of field glasses).

b. Hand-Held Operation.

(1) Position the hinged red filter as desired (para. 12*c*).

(2) Attach the gunstock to the pistol grip of the signal lamp (para. 12*d*).

(3) Raise the front and rear sights (fig. 2) of the signal lamp.

(4) Aim the signal lamp like a rifle.

(5) Use the trigger to operate the signal lamp. Do not jerk the trigger during operation, because this may cause the signal lamp to pull off target. Monitor the transmitted signal by listening to the relay as it operates.

c. Remote Operation.

(1) Position the hinged red filter as desired (para. 12*c*).

(2) The gunstock may or may not be attached to the signal lamp for remote operation. If desired, remove the gunstock.

(3) Position the signal lamp on the tripod (para. 12*e*).

(4) Raise the front and rear sights (fig. 2), aim the signal lamp carefully, and tighten the ball joint wingnut (fig. 4).

(5) Install the key (para. 12f) and operate the signal lamp.

14. Stopping Procedures

a. Position the front and rear sights flat against the signal lamp.

b. Disconnect the cable assembly from the key and the signal lamp.

c. Remove the gunstock from the pistol grip of the signal lamp.

d. Loosen the tripod ball joint wingnut and remove the signal lamp from the tripod.

e. If the signal lamp is to be placed in limited storage, remove the batteries.

f. Collapse the tripod and place all components in the carrying bag.

Section III. OPERATION UNDER UNUSUAL CONDITIONS

15. Operation in Arctic Areas

a. At low temperatures, the batteries tend to lose their efficiency. Try to keep the signal lamp warm; if necessary, carry the batteries in your pocket.

b. Moisture condensation on the filters and goggles limits the effective transmission range. Wipe the filters ad goggles dry with clean lens tissue. Do not attempt to warm them by breathing on them; place them under your clothing until they are warm enough to dry.

16. Operation in Desert Climates

When the equipment is used under extremely dusty conditions, such as desert climates, large amounts of sand may enter the signal lamp. Observe the following precautions:

a. Keep the equipment in the carrying bag when not in use.

b. Keep the hinged red filter closed as much as possible.

c. Carefully dust both surfaces of the hinged red filter before use; use a camel's-hair brush.

Caution: **Unless the hinged red filter has been dusted with a camel's-hair brush, do not clean it with a lens tissue. Sand particles on the filter will scratch the filter when rubbed with a lens tissue.**

d. Check to see that the binding posts are clean (para. 24*c*(8)); observe that the relay functions properly.

17. Operation in Tropical Climates

When operating in climates of high humidity, such as the tropics, condensation of moisture on the equipment occurs whenever the temperature of the equipment becomes lower than that of the surrounding air. Proceed as follows:

a. Try to keep the equipment dry; if necessary, use waterproof tape and the protective cover to waterproof the signal lamp for amphibious operations.

b. Inspect the equipment for traces of fungus, mold, mites, and metallic corrosion; remove all fouling immediately (para. 24).

c. Thoroughly check the condition of the equipment after each mission.

CHAPTER 3

PREVENTIVE MAINTENANCE SERVICES

18. Scope of Maintenance

Note. The operator will perform operator and organizational preventive maintenance.

The maintenance duties assigned to the operator of the equipment are listed below together with a reference to the paragraphs covering the specific maintenance function. The duties assigned do not require materials and tools other than those specified in paragraph 19.

a. Daily preventive maintenance checks and services (para. 22).

b. Monthly preventive maintenance checks and services (para. 23).

c. Cleaning (para. 24).

d. Touchup painting (para. 25).

19. Materials, Tools, and Test Equipment Required

a. Fine sandpaper, No. 000(FSN 5350-235-0136).

b. Lens tissue.

c. Clean, lint-free cloth (FSN 8305-170-5062).

d. Cleaning compound (FSN 7930-395-9542).

e. Tool Equipment TE-49.

f. Multimeter AN/URM-105.

20. 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 25 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 (para. 22 and 23) outline

functions to be performed at specific intervals. These checks and services are to maintain Army equipment in a combat serviceable condition; that is, in good general (physical) conditions and in good operating condition. To assist operators in maintaining combat serviceability, the chart indicates what to check, how to check, and the normal conditions. The References column lists the paragraphs that contain supplementary data. If the defect cannot be remedied by the operator, direct support maintenance is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38750.

21. Preventive Maintenance Checks and Services Periods

a. Daily. Preventive maintenance checks and services of the equipment are required on a daily basis while the equipment is in use. If the equipment is being maintained on a standby (ready for immediate operation) condition, the daily checks and services should be performed once each week. Paragraph 22 specifies the checks and services that must be accomplished daily and under the following special conditions:

(1) When the equipment is initially placed in service

(2) Before the state of a mission.

(3) When the equipment or any of its major components are removed from service for any reason.

b. Monthly. Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart (para. 23) once each month at the same time that the daily procedures (para. 22) are performed. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours a day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage (requires service before operation) does not require monthly preventive maintenance.

22. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedures	References
1	Cleanliness	Check to see that equipment is clean	Para. 24
2	Operation.....	During operation, be alert for any unusual operating conditions.	

23. Monthly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedures	References
1	Completeness	Check to see that equipment is complete	Appx. II
2	Batteries	Check to see that batteries are clean and not deformed. Replace defective, deformed, and corroded batteries.	
8	Cable assembly.....	Check to see that cable assembly is free of cuts, kinks, and frayed insulation. Replace defective cable assembly.	
4	Carrying bag.....	Inspect carrying bag for fungus, tears, and broken fasteners.	
5	Lubrication.....	Check to see that signal lamp rotates smoothly when mounted in tripod; lightly oil ball joint (fig. 4) and mounting post (fig. 2) if necessary.	
6	Publications.....	Check to see that all publications are complete, serviceable, and current.	DA Pam 310-4.
7	Modifications	Check DA Pam 310-4 to determine if new applicable MWO's have been published. ALL URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	TM 38-750 and DA Pam 310-4.

24. Cleaning

a. *Goggles, Hinged Red Filter, and Filter MC-430.*

Caution: **The goggles and filters are made of soft, red polystyrene and are easily scratched. They cannot withstand hot water or chemical solvents. Do not remove the filter material from either the goggles or the filters; clean them in their holders. Do not use chemical solvents to clean the filter material.**

(1) Carefully remove all dust, dirt, and foreign matter from the, red polystyrene surfaces; use a camel's-hair brush.

(2) Slightly dampen a wad of lens tissue with clear water.

(3) Gently wipe the exposed surfaces with the moistened lens tissue; use a circular motion, starting from the edge of the exposed surface and working toward the center.

(4) Dry the cleaned surfaces with a fresh piece of lens tissue; use the same circular motion described in (3) above.

(5) If necessary, mild soap may be used to make the cleaning more effective.

b. Lamp LM-61 and Reflector.

Caution: **The reflector is highly polished and easily scratched. Inspect the reflector after dusting it with the camels-hair brush. Do not wash the bulb and its reflector unless inspection reveals it to be necessary.**

(1) Unscrew and remove the front hood assembly (fig. 2) from the signal lamp.

(2) Unscrew and remove the lamp bushing and the lamp.

(3) Remove the retaining ring that holds the reflector in place, and remove the reflector.

(4) Dust the lamp and its reflector with the camel's-hair brush.

(5) If necessary, dampen a wad of lens cleaning tissue with water.

(6) Gently wipe the polished surfaces of the reflector and the lamp with the moistened lens tissue; mild soap may be used for more effective cleaning.

(7) Dry the cleaned surfaces with a fresh piece of lens tissue; remove all streaks from the reflector.

c. Signal Lamp Exterior, Tripod, and Key.

(1) Remove dust and loose dirt with a clean soft cloth.

Warning: **Cleaning compound is flammable and its fumes are toxic. Provide adequate ventilation. Do not use near a flame:**

Caution**: Do not allow cleaning compound to come in contact with the filter material or reflector; use cleaning compound sparingly.**

(2) Remove grease, fungus, and ground-in dirt from the exterior surfaces; use a cloth dampened with cleaning compound.

(3) Remove dust, dirt, and foreign matter from the binding posts with a brush.

d. Trigger Contacts.

(1) Remove the screw at the side of the trigger housing.

(2) Lower the trigger to expose the contacts.

(3) Remove grease, fungus, and foreign matter from the trigger contacts; use a cloth dampened with cleaning compound.

25. Touchup Painting

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TM 9-213.

CHAPTER 4

SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

26. Repacking for Shipment or Limited Storage

a. General. The exact procedure for repacking depends on the materials available and the conditions under which the equipment is to be packed, shipped, and stored. Adapt the procedures outlined below to the packing circumstances. The information pertaining to the original packing (para. 10) may be helpful.

b. Materials Required. The following materials are required for repacking the equipment. Refer to SB 38100 for Federal stock numbers.

Materials	Quantity
Paperboard, wrapping, PPP-P-201	4 sq ft
Box, fiberboard, PPP-B-636, type I, class 2, W6c, style RSC, size 20 1/2 x 8 1/2 x 5 3/4 inches.	1 each
Box, fiberboard, PPP-B-636, type I, class 2, W6c, style RSC, size 20 7/8 x 8 7/8 x 6 3/8 inches.	1 each
Tape, pressure-sensitive, water-resistant.	18 ft
Tape, pressure-sensitive, filament-reinforced, PPP-T-97	6 ft

c. Packing. Pack the equipment as follows:

(1) Perform the stopping procedures (para. 14); check to see that the batteries are not packed with the equipment.

(2) Place the equipment in the smaller fiberboard box.

(3) Make a pad of the paperboard wrapping. Insert the pad in the box containing the equipment; check to see that the pad prevents equipment movement.

(4) Close the smaller fiberboard box and seal it with the pressure-sensitive water-resistant tape.

(5) Insert the smaller fiberboard box in the larger fiberboard box, close the larger fiberboard box, and band the box girthwise with two strips of pressure-sensitive filament reinforced tape.

d. Marking. Refer to MILSTD-129 for marking instructions.

27. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. Use the destruction procedures out-lined in paragraph 28 to prevent further use of the equipment.

28. Methods of Destruction

Any or all of the methods of destruction given below may be used. The time available and the tactical situation will determine the method to be used when destruction of the equipment is ordered.

a. Smash. Smash the signal lamp, spares, filters, and goggles; use sledges, axes, hammers, crowbars, or any other heavy tools available.

b. Cut. Cut the cable assembly and carrying bag in several places.

c. Bend. Bend the gunstock, tripod legs, key, and the hinged red filter.

Warning: **Be extremely careful with flammable materials and incendiary devices. Use these items only when the need is urgent.**

d. Burn. Burn the cable assembly, batteries, and technical manuals; use gasoline, oil, flame-throwers, incendiary grenades, and similar materials.

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

APPENDIX I

REFERENCES

Following is a list of applicable references available to the user of Signal Lamp Equipment SE-11 or SE-11A.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 4, 6, 7, 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders.
MIL-STD-129	Marking for Shipment and Storage.
SB 11-6	Dry Battery Supply Data.
SB 38-100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used by the Army.
TM 9-213	Painting Instructions for Field Use.
TM 11-5850-201-20P	Organizational Maintenance Repair Parts and Special Tool Lists: Signal Lamp Equipments SE-11 and SE-11A.
TM 11-6625-203-12	Operator and Organizational Maintenance: Multimeter AN/URM-105, Including Multimeter ME-77/U.
TM 38-750	Army Equipment Record Procedures.

APPENDIX II

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

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

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 the 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 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, and other test devices.

(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 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 as prescribed by serviceability standards. 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) *1st, 2d, 3d, 4th, 5th echelons* (operator, organization, direct support, general support, and depot). The symbol X placed in columns 3 through 7 indicates the category of maintenance 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 column.

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) *1st, 2d, 3d, 4th, 5th echelon* (operator, organizational, direct support, general support, and depot). The dagger (t) symbol in these columns 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 ALLOCATIONS CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON					TOOL REQUIRED	REMARKS
		1	2	3	4	5		
SIGNAL LAMP EQUIPMENT SE-11 and SE-11A	service	X						Exterior
			X				3	Interior
	adjust		X				3	Relays, contacts
	inspect	X						Exterior
			X				3	Interior
	test		X				1	Continuity and voltage
				X			2	All testing
	repair			X			4	All repair
	overhaul				X		2, 3, 4	

SECTION III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	ECHELON					TOOL CODE	REMARKS
	1	2	3	4	5		
SE-11 and SE-11A (continued)							
MULTIMETER AN/URM-105		t				1	
MULTIMETER TS-352/U			t	t	t	2	
TOOL EQUIPMENT TE-49		t	t	t	t	3	
TOOL KIT TK-87			t	t	t	4	

APPENDIX III

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. General

a. This appendix lists items supplied for initial operation. 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.

b. 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.* The dagger (t) indicates 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.

(5) *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.

(6) *Expendability*. Nonexpendable items are indicated by NX. Expendable items are not annotated.

(7) *Quantity authorized.* Under "Items comprising an operable equipment"; the column lists the quantity of items supplied for the initial operation of the equipment.

(8) *Illustrations.* Not used.

2. Batteries

Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization, in accordance with SB 11-6.

SECTION II FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL						DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
											FIGURE NO.	ITEM NO.
5850							SIGNAL LAMP EQUPMENTS SE-11 AND SE-11A Portable; for visual code signaling; can be used with or without tripod Sig dwg SC-D-8966 NOTE: Model column 1 refers to SE-11; column 2 refers to SE-11A ITEMS COMPRISING AN OPERABLE EQUIPMENT		NX			
ORD thru AGC	†	†					TECHNICAL MANUAL TM-11-392					
5850-407-6629	†						BVAG, BG-131; fro transporting all components of signal lamps equipment SE-11; Sig dwg SC-D-8979			1		
5850-407-6630		†					BAG, BG—194; for transporting all components of signal lamp equipment SG-11A; Sig dwg SC-D-17326			1		
6135-120-1020	†	†					BATTERY BA-30; dry cell, 1-1/2v (not furnished with equipment. Order separately)					
5995-162-6953	†	†					CABLE ASSEMBLY POWER ELECTRICAL CD-701: for remote control; 15 ft lg; SC-D-88788			1		
5850-407-6643	†						COVER: used as protective cover; 56 inches lg x 6 inches w; wasterproof; QM part; St. No. 24-C-7300					
6650-246-2405	†	†					FILTER MC-430: Rod cir. Disk; Sig dwg SC-DL-86486			1		
4240-540-0757	†	†					GOGGLES M-172: ventilzted; Sig dwg SC-D-6615 Wilson Product Co. Part No. X-41					
5850-4076643	†						GUNSTOCK M-341: attaches to M-227 for shoulder use; Sig dwg SC-D-8977			1		
5850-099-0678		†					GUNSTOCK M-437: attaches to M-438 for shoulder use; Sig dwg SC-D-17317					
5805-162-1292	†	†					KEY, TELEGRAPH J-51: For sending dots and dashes; Sig dwg 8976			1		
6240-299-6767	†	†					LAMP, INCANDESCENT, LM-61: 5.95v; GE part No. PR-12			1		
5850-537-7751	†						SIGNAL LAMP M-227: for holding btry, lamp socket, and ry; Sig dwg SC-D-8967			1		
5850-356-3718		†					SIGNAL LAMP M-436: holds btry, lamp socket, and fryi; Sig dwg SC-D-17317			1		
SE-11 and SE-11A 1												

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL						DESCRIPTION	UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATION	
											FIGURE NO.	ITEM NO.
							SE-11 and SE-11A (continued)					
5850-498-8141	†	†					TRIPOD LG-21: Mts M-227 and M-438; Sig dwg SC-D-8975			1		
							RUNNING SPARE ITEMS					
							NO PARTS AUTHORIZED FOR STOCKAGE AT FIRST ECHELON					

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Corps (2)
USA Corps (3)
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USARSOUTHCOM Sig
    Agcy (2)
USAEMA (25)
USASTC (2)
USATC AD (2)
USATC Armor (2)
USATC Engr (2)
USATC Inf (2)
WRAMC (1)
Army Pic Cen (2)
CRREL (2)
USAEDDL (2)
MDW (1)
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    Oakland (5)
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NG: State AG (3); units-same as active army except allowance is one copy.

USAR: None.

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

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THE METRIC SYSTEM AND EQUIVALENTS

NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

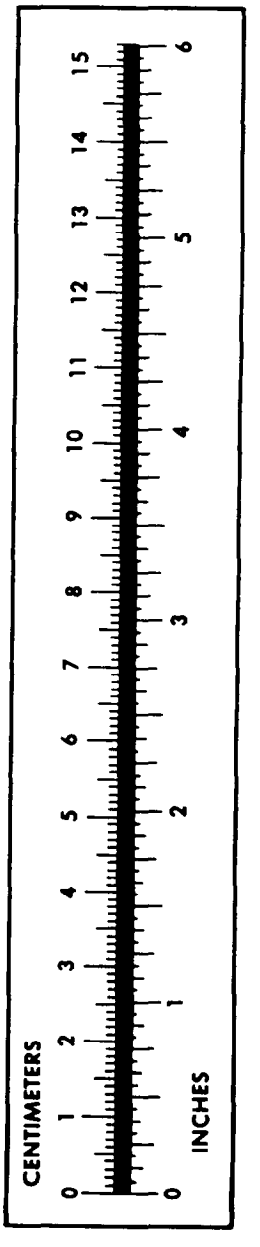
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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