

**TECHNICAL MANUAL**  
**ORGANIZATIONAL MAINTENANCE REPAIR**  
**PARTS AND SPECIAL TOOLS LISTS**  
**FOR**  
**NONAIRCRAFT NICKEL-CADMIUM**  
**BATTERIES**

**BB-422/U (NSN 6140-00-789-2118)**

**BB-651/U IH6(V) (NSN 6140-00-935-5265)**

**BB-429/U (NSN 6140-00-996-3746)**

**BB-501/U (NSN 6140-00-134-0850)**

**BB-693/U (NSN 6140-00-862-2979) AND**

**BB-651 /U (NSN 6140-01-037-7344)**

This copy is a reprint which includes current pages from Change 1.

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**7 OCTOBER 1977**

TECHNICAL MANUAL }  
 No. 11-6140-203-20P-3 }

HEADQUARTERS  
 DEPARTMENT OF THE ARMY  
 WASHINGTON, DC, 7 October 1977

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**BB-651/U (NSN 6140-01-037-7344)**

**REPORTING OF ERRORS**

You can improve this manual by recommending improvements using DA Form 2028-2 located in the back of the manual. Simply tear out the self addressed form, fill it out as shown on the sample, fold it where shown, and drop it in the mail.

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In either case a reply will be furnished direct to you.

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\*This manual T/W TM 11-6140-203-34P-3, supersedes so much of TM 11-6140-203-153, 1 December 1969, including Change 3, 23 December 1975, as pertains to organizational repair parts and special tools list.

**SECTION I  
INTRODUCTION**

**1. Scope**

This manual lists spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of organizational maintenance of the B-422/U, BB-651/ UIH6(V), BB-429/U, BB-501/U, BB-693/U, BB-672/U, and BB-651/U. It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes.

**2. General**

This Repair Parts and Special Tools Lists is divided into the following sections:

a. *Section II. Repair Parts List.* A list of spares and repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in numeric sequence, with the parts in each group listed in figure and item number sequence.

b. *Section III. Special Tools List.* Not applicable.

c. *Section IV. National Stock Number and Part Number Index.* A list, in National item iden-stock numbers (NSN) appearing in the listings, followed by a list, in alphameric sequence, of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

**3. Explanation of Columns**

a. *Illustration.* This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration on which the item is shown.

(2) *Item number.* The number used to identify item called out in the illustration.

b. *Source, Maintenance, and Recoverability (SMR) Codes.*

(1) *Source code.* Source codes indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

<i>Code</i>	<i>Definition</i>
PA -	Item procured and stocked for anticipated or known usage.

**NOTE**

Cannibalization or salvage may be used as a source of supply for any items source coded above except those coded XA and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

<i>Code</i>	<i>Application/Explanation</i>
O -	Support item is removed, replaced, used at the organizational level.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

<i>Code</i>	<i>Application/Explanation</i>
Z -	Nonrepairable. No repair is authorized.

(3) *Recoverability code.* Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

<i>Recoverability codes</i>	<i>Definition</i>
Z -	Nonrepairable item. When unserviceable, condemn and dispose at the level indicated in position 3.

c. *National Stock Number.* Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

d. *Part Number.* 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.

**NOTE**

When a stock numbered item is requisitioned, the repair part received may have a different part number than the part being replaced.

e. *Federal Supply Code for Manufacturer (FSCM).* The FSCM is a 5-digit numeric code listed

in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. *Description*. Indicates the Federal item name and, if required, a minimum description to identify the item.

g. *Unit of Measure (U/M)*. Indicates the standard of the 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.

h. *Quantity Incorporated in Unit*. Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly.

**4. Special Information**

a. Useable on codes are shown in the description column. Uncoded items are applicable to all models. Identification of the usable on codes used in this publication are:

<i>Code</i>	<i>Used on</i>
AEI	BB-422/U
AV5	BB-501/U
CJU	BB-693/U
2YF	BB-651/UIH6(V)
4HP	BB-429/U
DQ9	BB-651/U

b. The following publications pertain to the BB-422/U, BB-651/UIH6(V), BB-429/U, BB-501/U, BB-693/U, and BB-651/U and its components:

TM 11-6140-203-15-3, Nonaircraft Nickel Cadmium Batteries.

c. The illustrations in this manual are identical to those published in TM 11-6140-203-34P-3. Only those parts assigned the third position SMR maintenance code "C" or "O" are listed in the tabular listing; therefore, there may be a break in the item number sequence. Only illustrations containing organizational authorized items appear in this manual.

**5. How to Locate Repair Parts**

a. When National stock number or part number is unknown.

- (1) *First*. Using the table of contents, determine the functional group within which the item belongs. This is necessary since illustrations are prepared for functional groups and listings are divided into the same groups.
- (2) *Second*. Find the illustration covering the functional group to which the item belongs.
- (3) *Third*. Identify the item on the illustration and note the illustration figure and item number of the item.
- (4) *Fourth*. Using the Repair Parts Listing, find the figure and item number noted on the illustration.

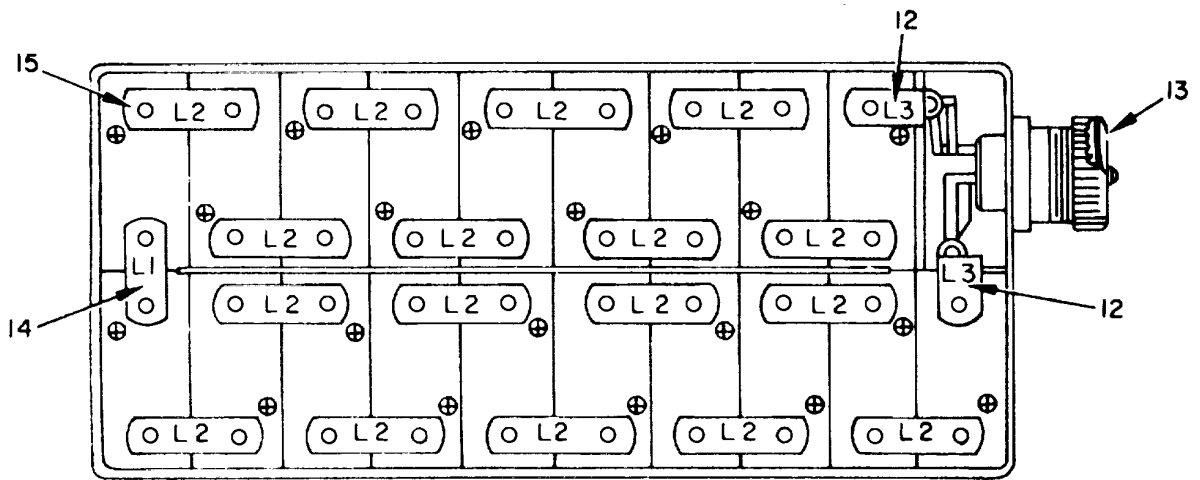
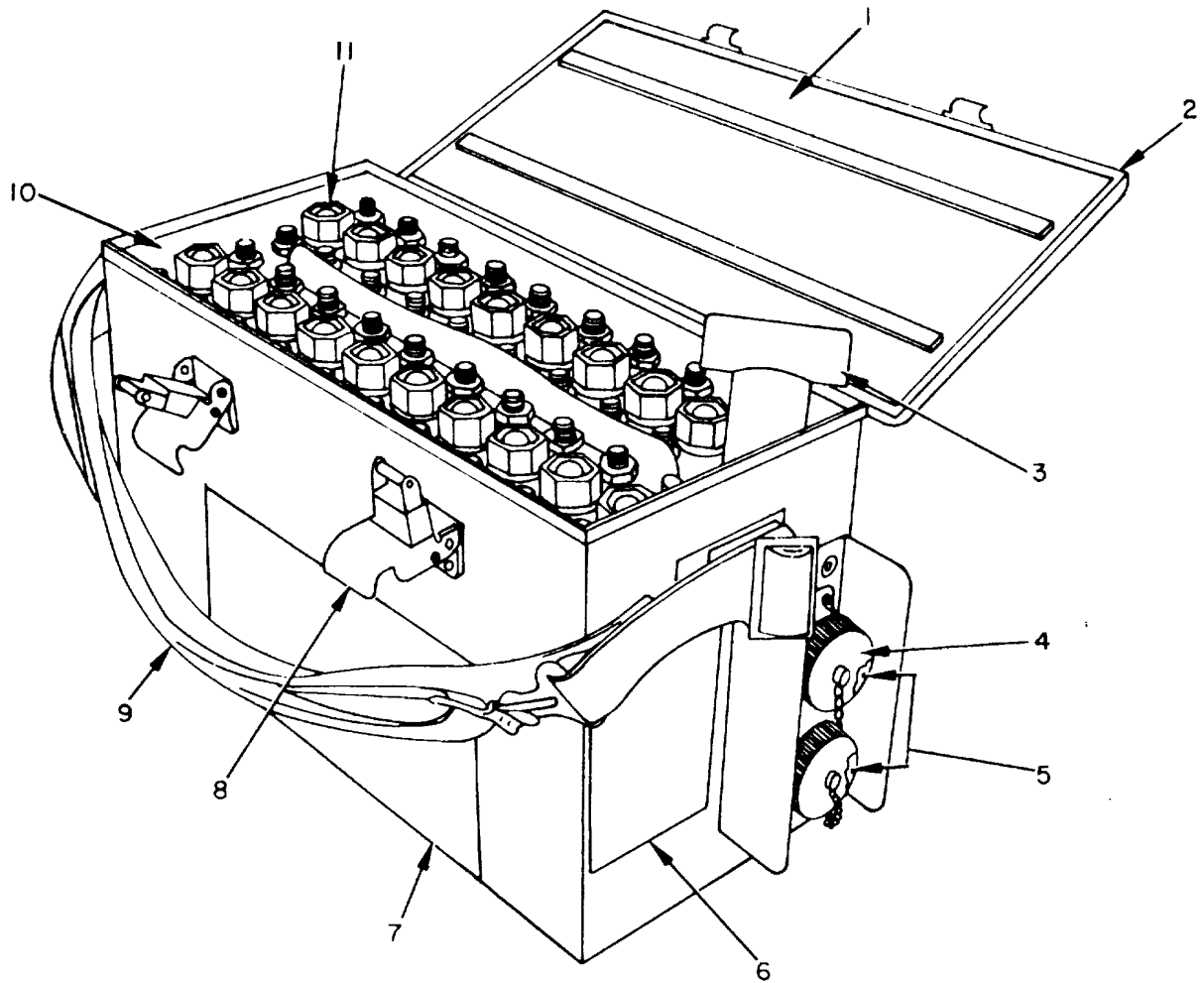
b. When National stock number or part number is known.

- (1) *First*. Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. This index is in NIIN sequence followed by a list of part numbers in alphameric sequence, cross-referenced to the illustration figure number and item number.
- (2) *Second*. After finding the figure and item number, locate the figure and item number in the repair parts list.

**6. Abbreviations**

Not applicable.

(Next printed page is 4.)



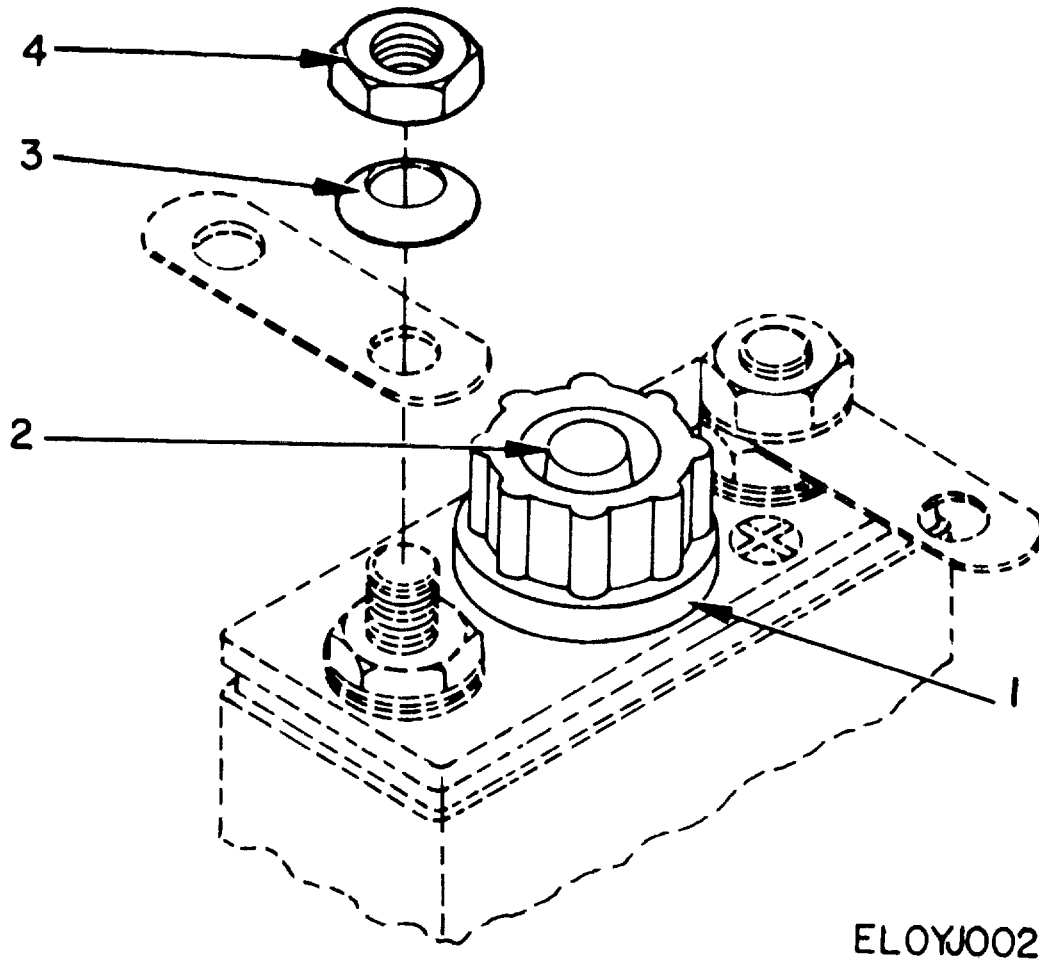
EL0YJ001

Figure 1. Battery, Storage BB-422/U.

SECTION II

TM 11-6140-203-20P-3

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	
ILLUSTRATION		SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	USABLE ON CODE	U/M	QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.								
						GROUP 00. BATTERY, STORAGE BB-422/U			
1	3	PAOZZ	5120-00-618-5305	SMC115287	80063	WRENCH, VENT CAP	AE1	EA	1
1	4	PAOZZ	5935-00-636-5983	2209-7	71468	CAP, PROTECTIVE.DUST AND MOISTURE SEAL	AE1	EA	2
1	13	PAOZZ	5330-00-822-3163	10343-20	74025	PACKING.PREFORMED O RING	AE1	EA	2



ELOYJ002

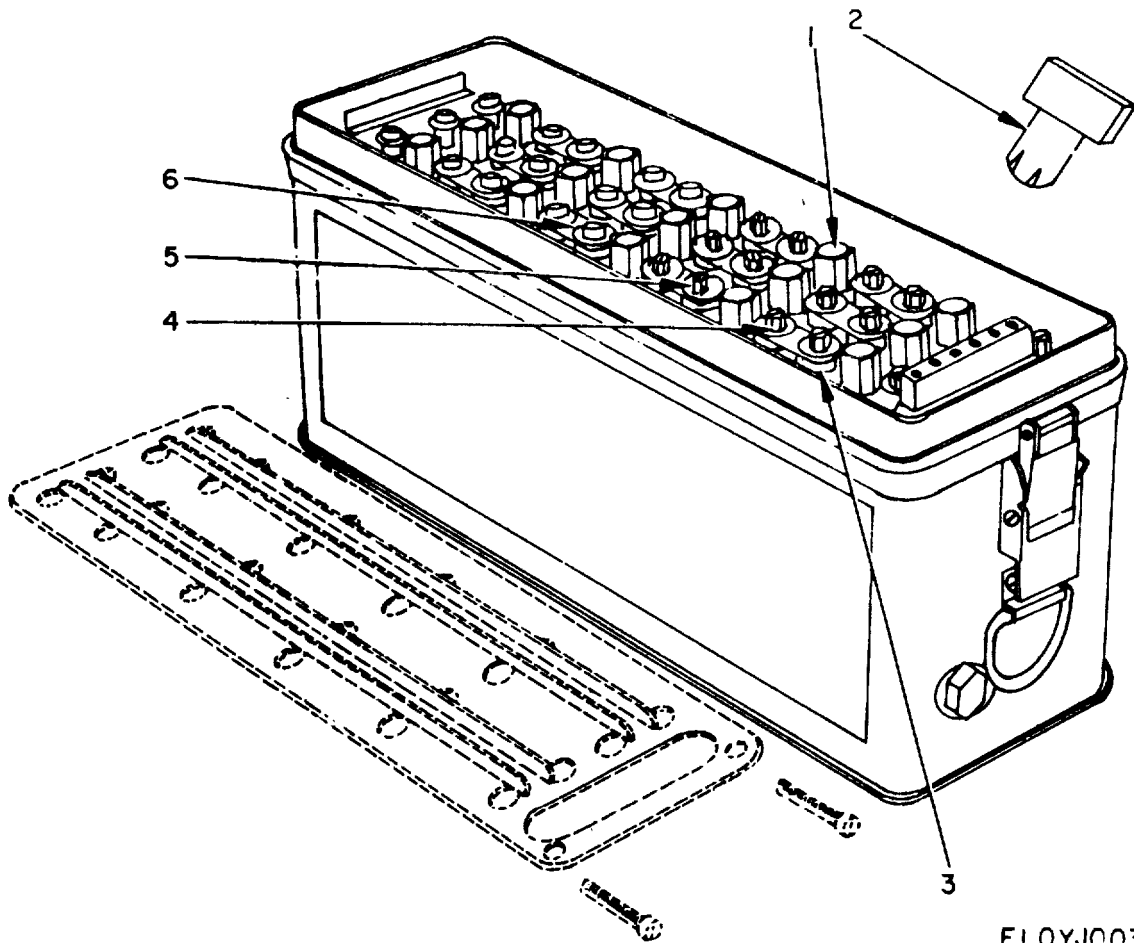
Figure 2. Battery, Storage BB-431/U (Cell).

SECTION II

TM 11-6140-203-20P-3

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
ILLUSTRATION		SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.							
2	1	PAOZZ	5330-00-731-7366	10343-5	74025	GROUP 01. BATTERY, STORAGE BB-431/U (CELL)		
2	2	PAOZZ	6140-00-676-3376	16934-1	74025	PACKING, PREFORMED O RING FILLER CAP, BATTERY	EA EA	19 19





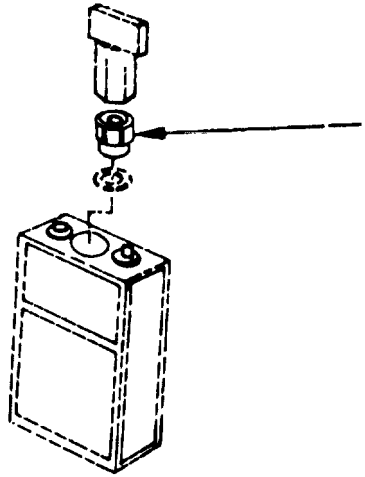
ELOYJ003

Figure 3. Battery, Storage BB-651/UIH6(V).

SECTION II

TM 11-6140-203-20P-3

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  <i>USABLE ON CODE</i>	U/M	QTY INC IN UNIT
3	2	PAOZZ	5120-00-064-5326	SCC204022	80063	GROUP 00. BATTERY, STORAGE BB-651/UIH6(V) WRENCH, BATTERY FILLER CAP 2YF	EA	1



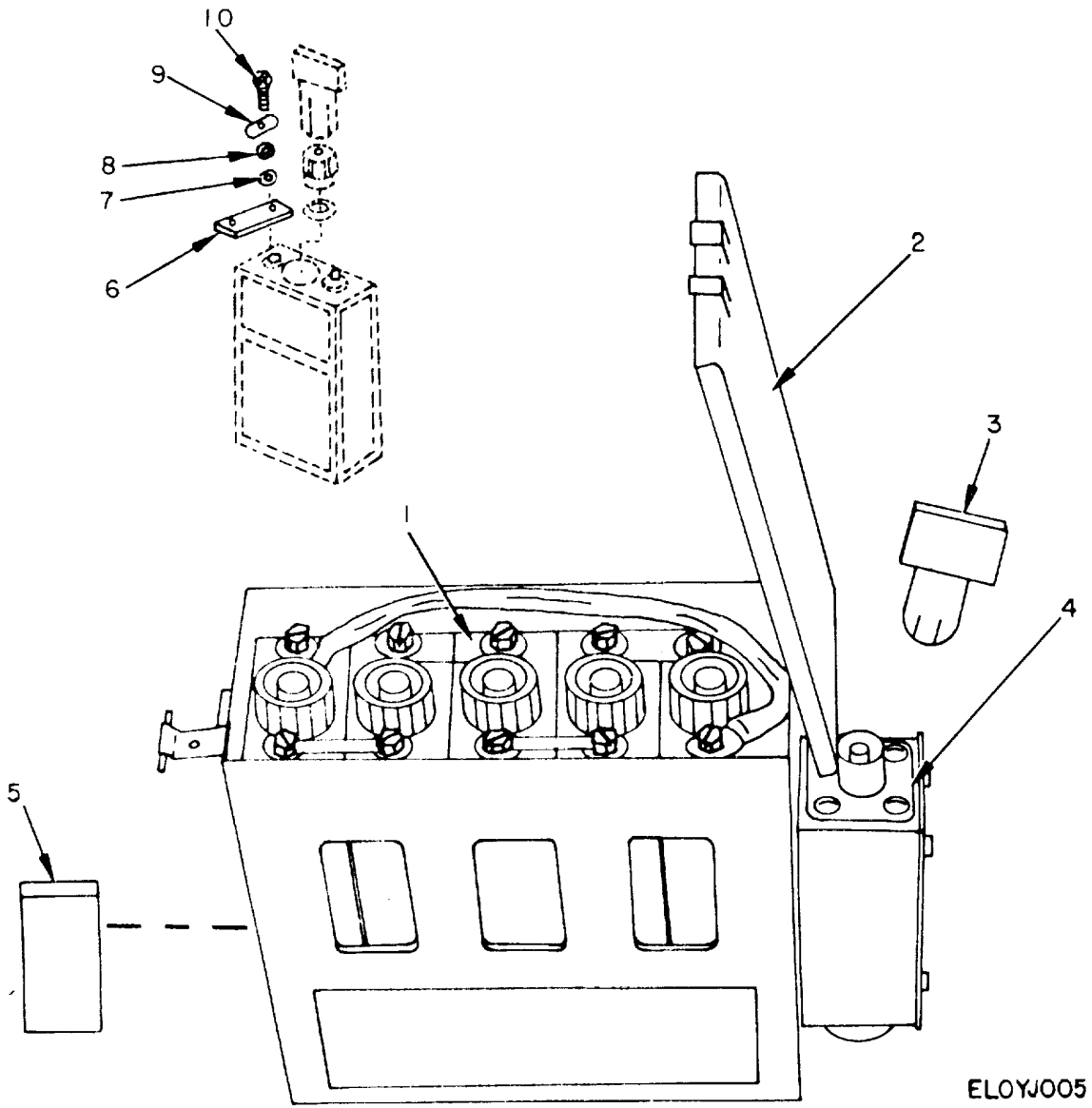
ELOYJ004

Figure 4. Battery, Storage BB-436/U (Cell).

## SECTION II

TM 11-6140-203-20P-3

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
ILLUSTRATION		SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.							
4	1	PAOZZ	6140-00-983-9289	MS75046-1	96906	GROUP 01. BATTERY, STORAGE BB-436/U (CELL) FILLER CAP 2YF	EA	20



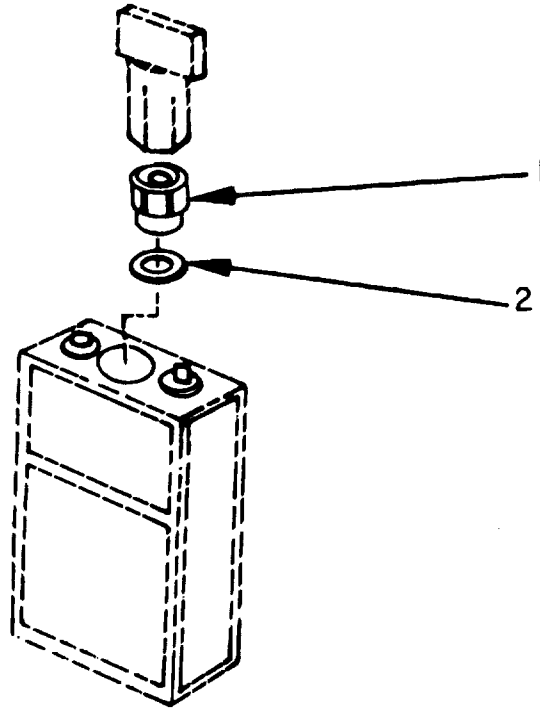
ELOYJ005

Figure 5. Battery, Storage BB-429/U.

SECTION II

TM 11-6140-203-20P-3

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  <i>USABLE ON CODE</i>	U/M	QTY INC IN UNIT
5	3	PAOZZ	5120-00-618-5305	SMC115287	80063	GROUP 00. BATTERY, STORAGE BB-429/U		1
5	5	PAOZZ	9330-00-877-2872	MILP22035	81349	WRENCH, VENT CAP PLASTIC SHEET, POLYAMIDE	4HP 4HP	EA EA



**ELOYJ006**

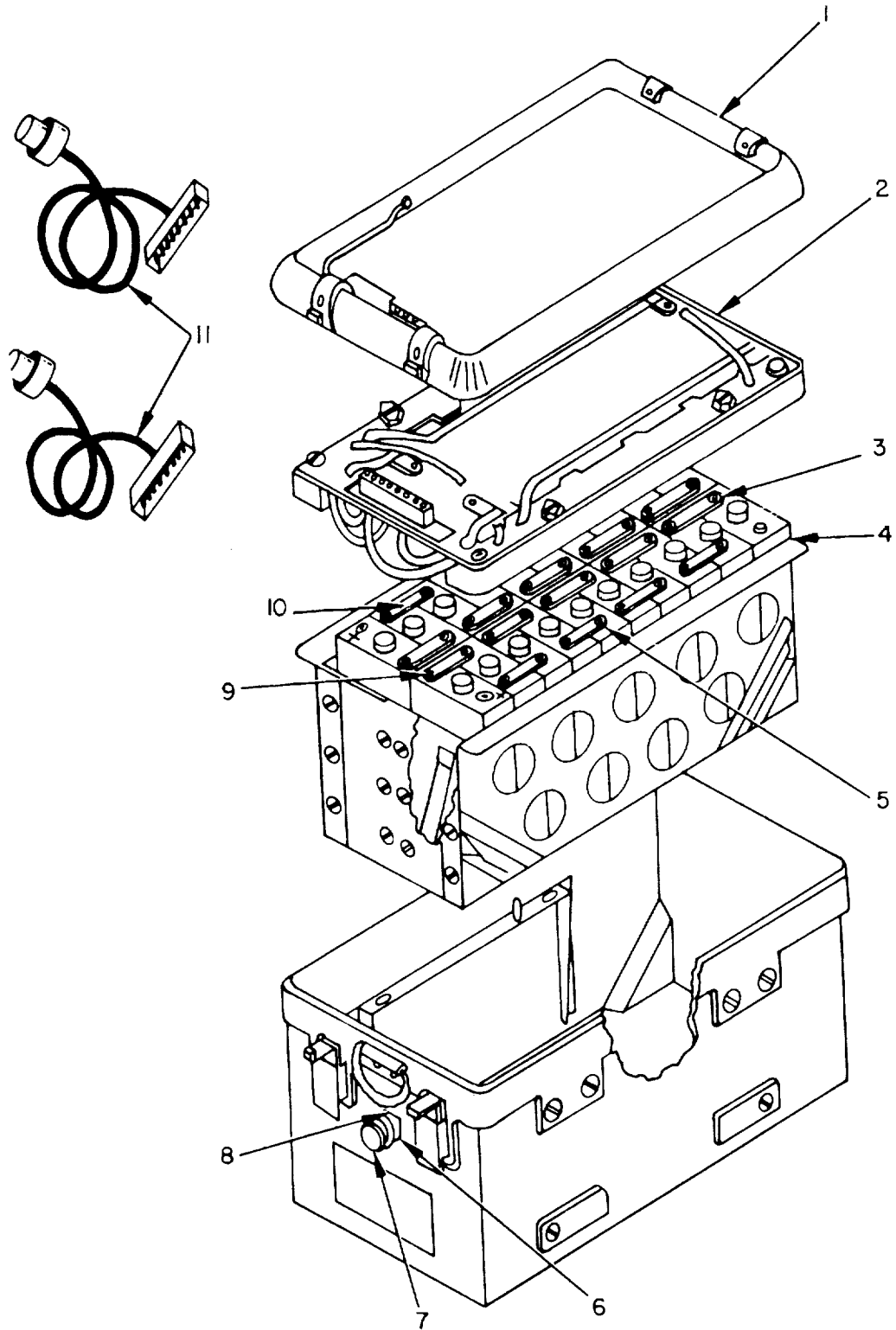
*Figure 6. Battery Storage BB-418/U (Cell).*

SECTION II

TM 11-6140-203-20P-3

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
ILLUSTRATION		SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.							
6	1	PAOZZ	6140-00-676-3376	16934-1	74025	GROUP 01.....BATTERY, STORAGE BB-418/U (CELL)		5
6	2	PAOZZ	5330-00-731-7366	10343-5	74025	FILLER CAP, BATTERY PACKING, PREFORMED O RING	4HP 4HP EA	5





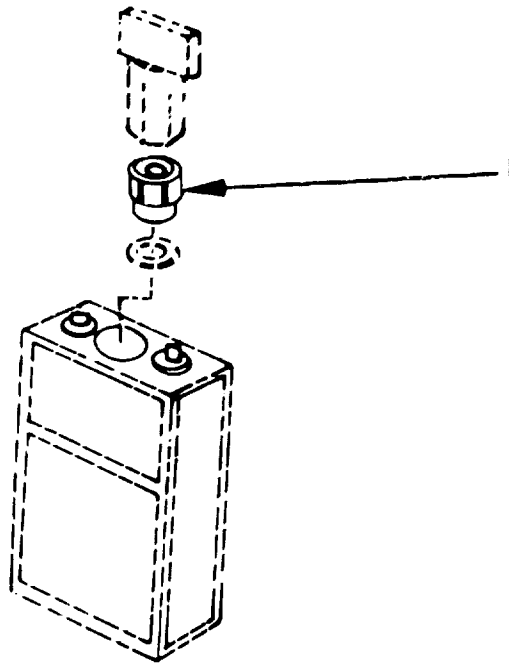
ELOYJ007

Figure 7. Battery, Storage BB-501/U.

SECTION II

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(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
ILLUSTRATION		SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	USABLE ON CODE	QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.							
						GROUP 00..... BATTERY, STORAGE BB-501/U		
7	5	PAOZZ	5310-00-973-2654	MS75044-2	96906	WASHER, BELLEVILLE	AV5 EA	40
7	7	PAOZZ	4820-00-908-1571	190ARL	98021	VENT VALVE ASSEMBLY	AV5 EA	1
7	9	PAOZZ	5310-00-983-8317	25636-1	74025	ASHER.DOUBLE D	AV5 EA	40
7	11	PAOZZ	5995-00-404-753	CX11935/U	80058	CABLE ASSEMBLY, PWR ELEC	AV5 EA	2



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Figure 8. Battery, Storage BB-613/U (Cell).

SECTION II

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(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
ILLUSTRATION		SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.							
8	1	PAOZZ	6140-00-983-9289	MS75046-1	96906	GROUP 01..... BATTERY STORAGE BB-613/U (CELL) VENT CAP AV5	EA	20

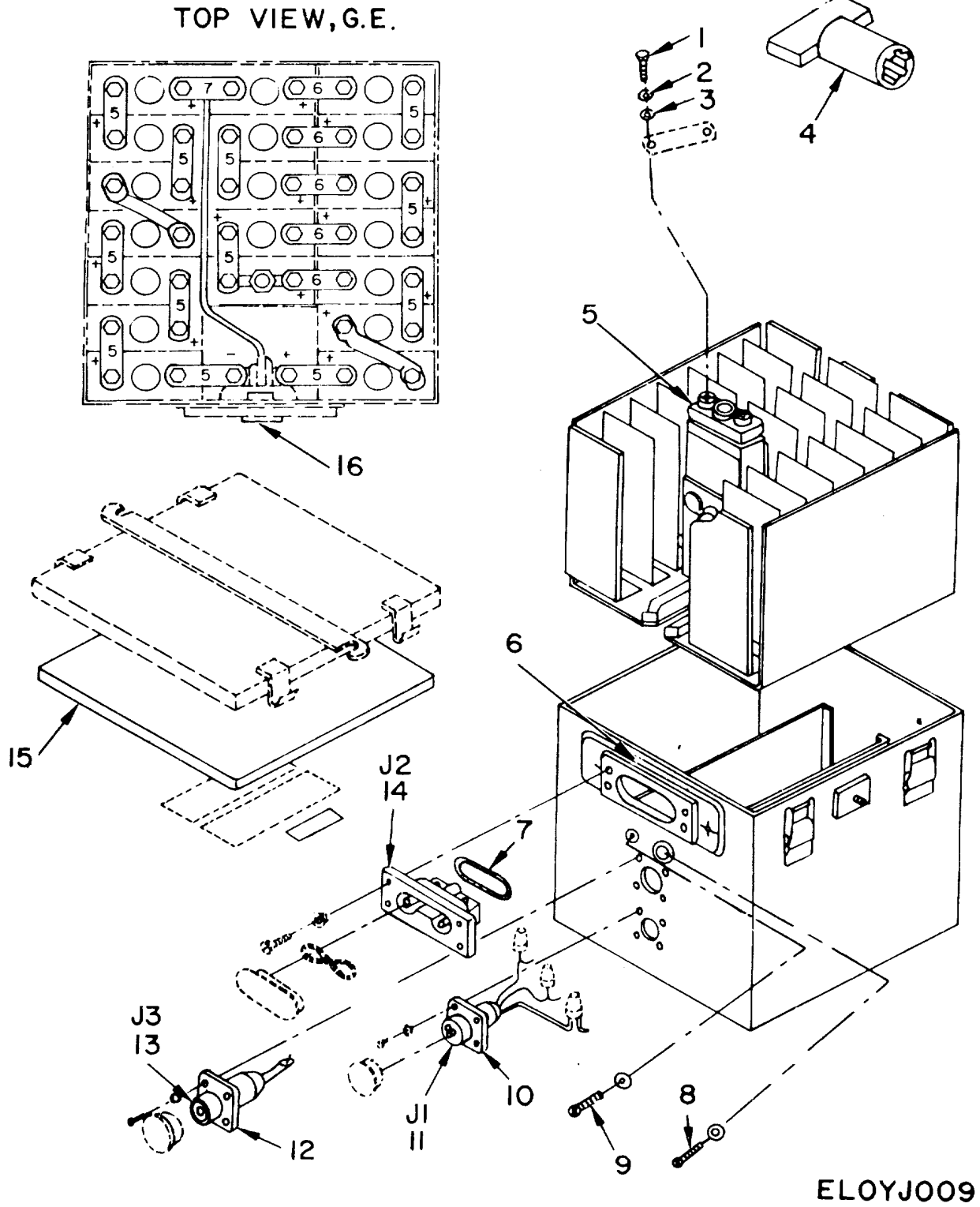


Figure 9. Battery, Storage BB-693/U (Sheet 1 of 2).

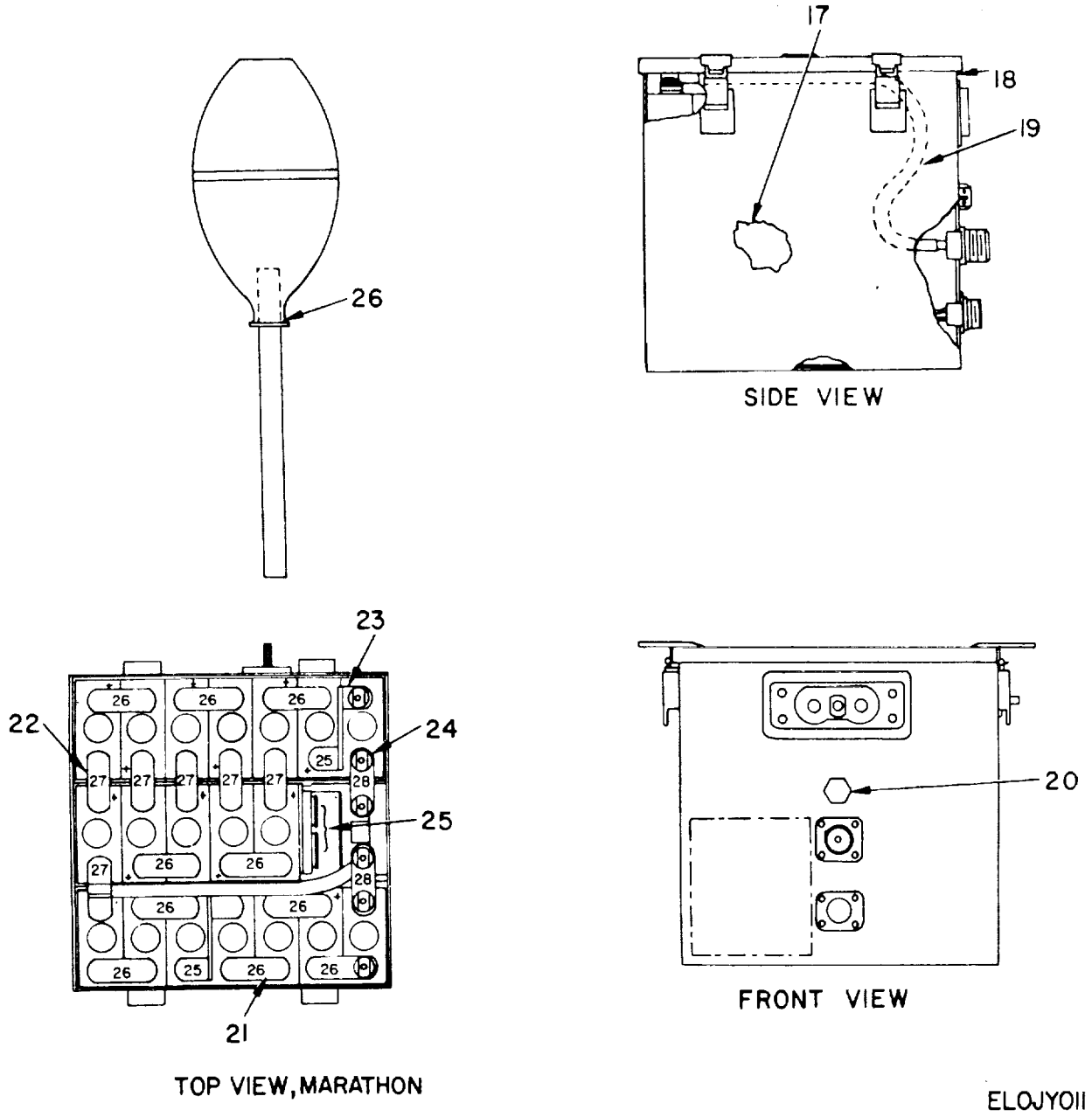


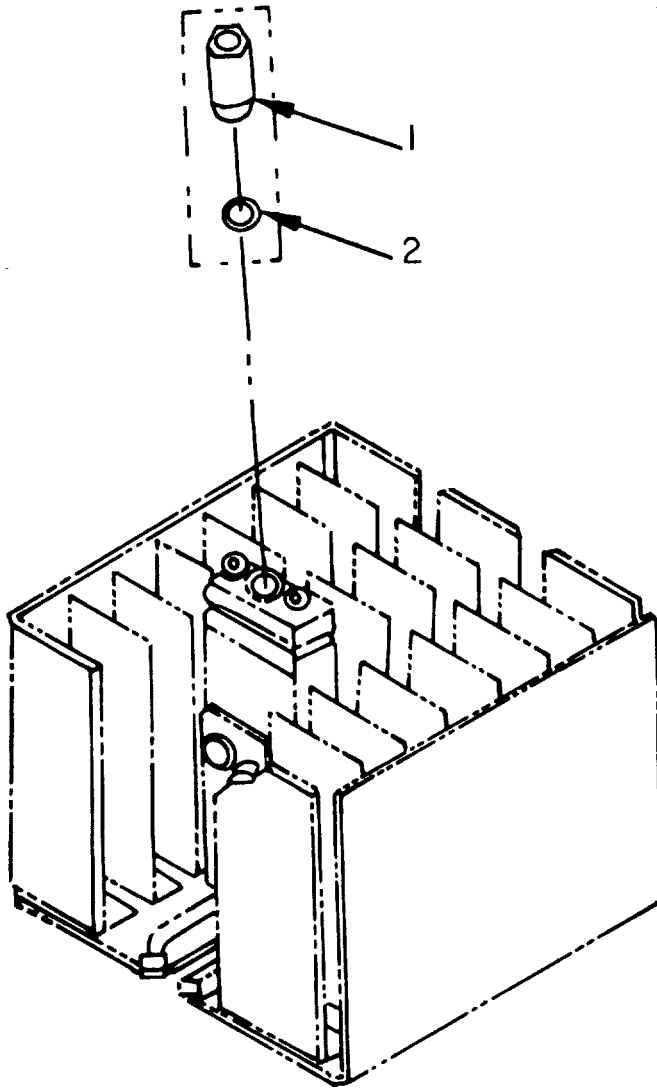
Figure 9. Battery, Storage BB-693/U (Sheet 2 of 2).

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SECTION II

TM 11-6140-203-20P-3

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
ILLUSTRATION		SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  <i>USABLE ON CODE</i>	U/M	QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.							
						GROUP 00..... BATTERY, STORAGE BB-693/U		
9	4	PAOZZ	5120-00-618-5305	SMC115287	80063	WRENCH, BATTERY FILL	CJU EA	1
9	8	PAOZZ	4820-00-187-5522	178A3369G2	19209	VALVE, PRESSURE RELIEF (G.E.ONLY)	CJU EA	1
9	9	PAOZZ	6140-00-295-1721	162A8032G4	19209	VALVE, PRESSURE RELIEF (G.E.ONLY)	CJU EA	1
9	20	PAOZZ	4820-00-324-4335	28077	74025	VALVE, PRESSURE RELIEF (MARATHON ONLY)	CJU EA	1
9	26	PAOZZ	6140-01-028-9287	28190	74025	SYRINGE, BATTERY FILLER	CJU EA	1



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Figure 10. Battery, Storage P/N 18191-14 (Cell) or P/N 43BO34AC05G5.



SECTION II

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(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
ILLUSTRATION		SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  <i>USABLE ON CODE</i>	U/M	QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.							
10	1	PAOZZ	6140-00-676-3376	Y16934	74025	GROUP 01. BATTERY, STORAGE P/N 18181-14 (CELL) OR P/N 43B34AC05G5	EA	19
10	2	PAOZZ	5330-00-731-7366	10343-5	74025	FILLER CAP, BATTERY PACKING, PREFORMED O RING	EA	19

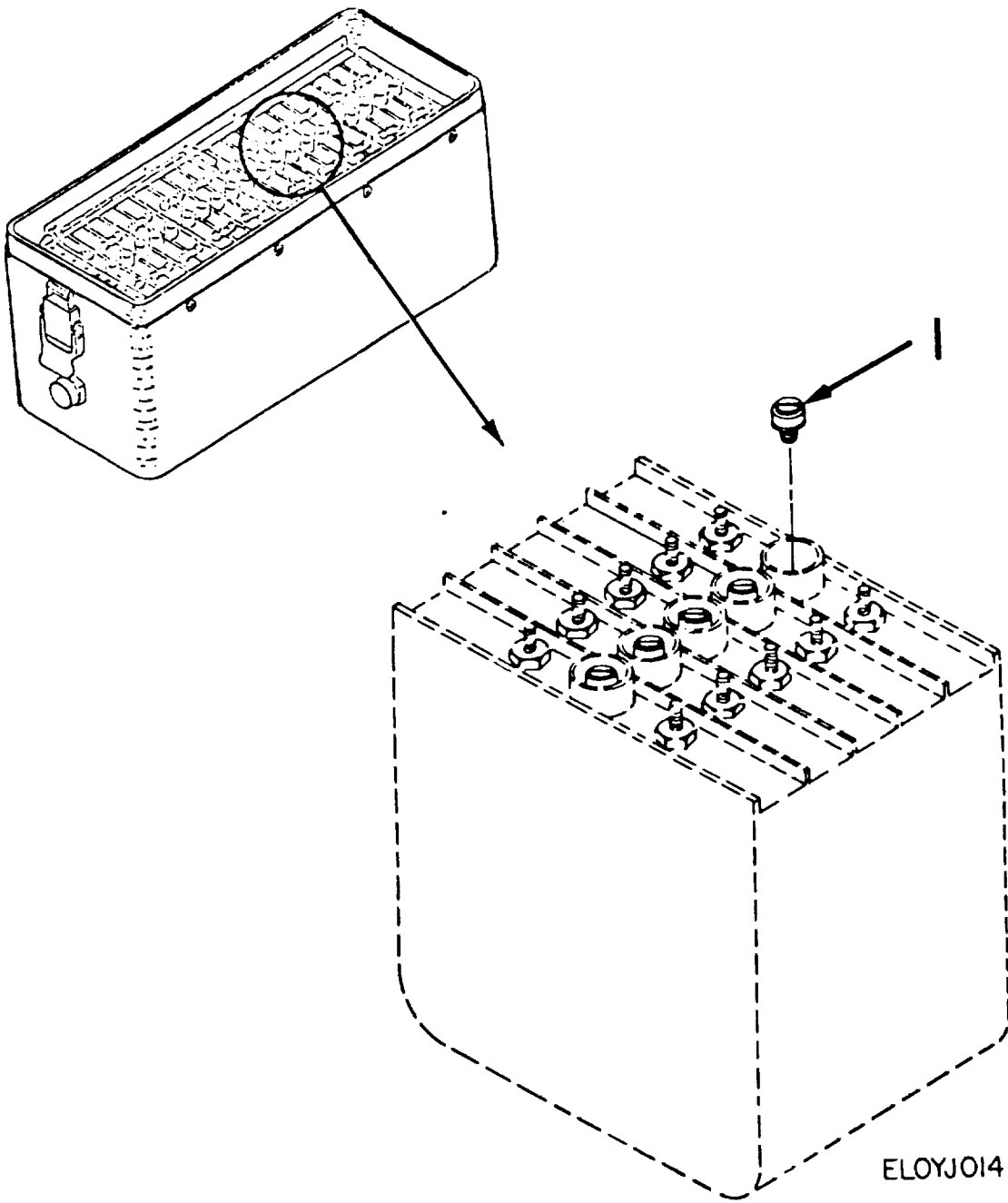


Figure 11. Battery, Storage BB-651/U, (Cell).

SECTION II

TM 11-6140-203-20P-3

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  <i>USABLE ON CODE</i>	U/M	QTY INC IN UNIT
11	1	PAOZZ		SNC794495	80063	GROUP 01..... BATTERY, STORAGE BB-651/U CELL VENT PLUG ASSY ..... DQ9	EA	20

NOTE: LATEST PART NUMBER ASSIGNMENT IS INCLUDED AT END OF INDEX.

SECTION IV NATIONAL STOCK NUMBER AND PART NUMBER INDEX

STOCK NUMBER	FIGURE NO.	ITEM NO.	STOCK NUMBER	FIGURE NO.	ITEM NO.
5120-00-064-5326	3	2	6140-00-676-3376	10	1
4820-00-187-5522	9	10	5330-00-731-7366	2	1
6140-00-295-1721	9	9	5330-00-731-7366	6	2
4820-00-324-4335	9	20	5330-00-731-7366	10	2
5995-00-404-7535	7	11	5330-00-822-3163	1	13
5120-00-618-5305	1	3	9330-00-877-2872	5	5
5120-00-618-5305	5	3	4820-00-908-1571	7	7
5120-00-618-5305	9	4	5310-00-973-2654	7	5
5935-00-636-5983	1	4	5310-00-983-8317	7	9
6140-00-676-3376	2	2	6140-00-983-9289	4	1
6140-00-676-3376	6	1	6140-00-983-9289	8	1
			6140-01-028-9287	9	26

PART NUMBER	FSCM	FIG. NO.	ITEM NO.	PART NUMBER	FSCM	FIG. NO.	ITEM NO.
CX11935/U	80058	7	11	10343-5	74025	2	1
MILP22035	81349	5	5	10343-5	74025	6	2
MS75044-2	96906	7	5	10343-5	74025	10	2
RS75046-1	96906	4	1	162A8032G4	19209	9	9
MS75046-1	96906	8	1	16934-1	74025	2	2
SCC204022	80063	3	2	16934-1	74025	6	1
SMC115287	80063	1	3	178A3369G2	19209	9	10
SMC115287	80063	5	3	190ARL	98021	7	7
SMC115287	80063	9	4	2209-7	71468	1	4
Y16934-1	74025	10	1	25636-1	74025	7	9
10343-20	74025	1	15	28077	74025	9	20
				28190	74025	9	26

LATEST PART NUMBER ASSIGNMENT

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
SMC794495	80063	11	1

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*

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PUBLICATION DATE

PUBLICATION TITLE

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PAGE NO.

PARA-GRAPH

FIGURE NO.

TABLE NO.

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.

TEAR ALONG PERFORATED LINE

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

# The Metric System and Equivalents

## Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

## Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 dekagram = 10 grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

## Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

## Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

## Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

## Temperature (Exact)

°F Fahrenheit temperature      5/9 (after subtracting 32)      Celsius temperature      °C

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