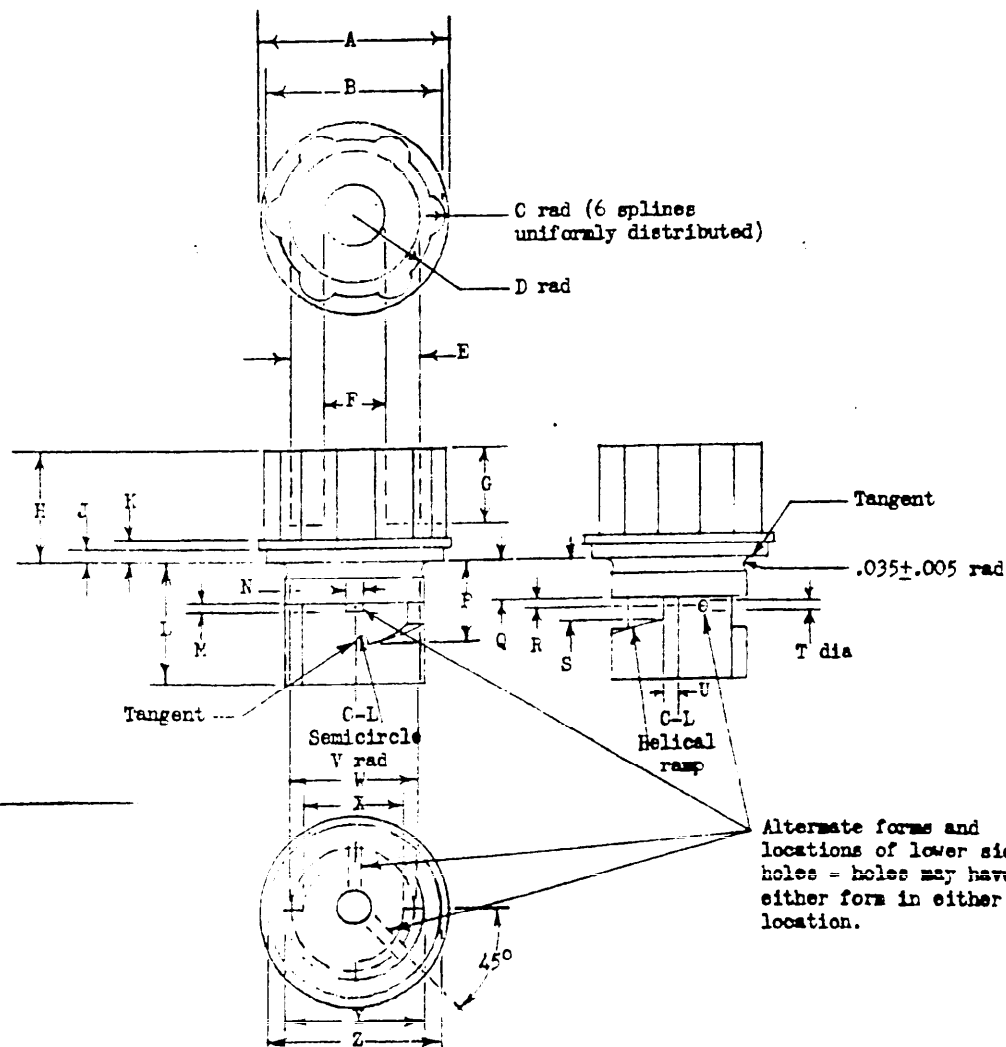


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MS Part Number	Id-mit	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MS3510	max	.690	.620	.083	.281	.474	.273	-	.433	0	.101	.385	-	-	.261
-1	min	.670	.610	.062	.276	.454	-	.338	.413	0	.081	.365	-	-	.256
MS3510	max	.870	.802	.103	.360	.605	.364	-	.555	.080	.127	.557	.085	.115	.329
-2	min	.860	.792	.082	.355	.595	-	.406	.545	.070	.107	.537	.075	.105	.324

MS Part Number	Li-mit	G	F	S	T	U	V	W	X	Y	Z	Washer	Max. Wt, lb	Test Box Vol, cub ins
MS3510	max	.128	-	.223	-	.060	.031	.494	.387	.505	-	MS3510	0.007	10
-1	min	.128	-	.213	-	.055	.023	.484	.357	.495	-	-13	-	-
MS3510	max	.189	.055	.279	.060	.070	.040	.613	.470	.640	.815	MS3510	0.014	35
-2	min	.169	.030	.274	.050	.065	.030	.603	.465	.635	.805	-14	-	-

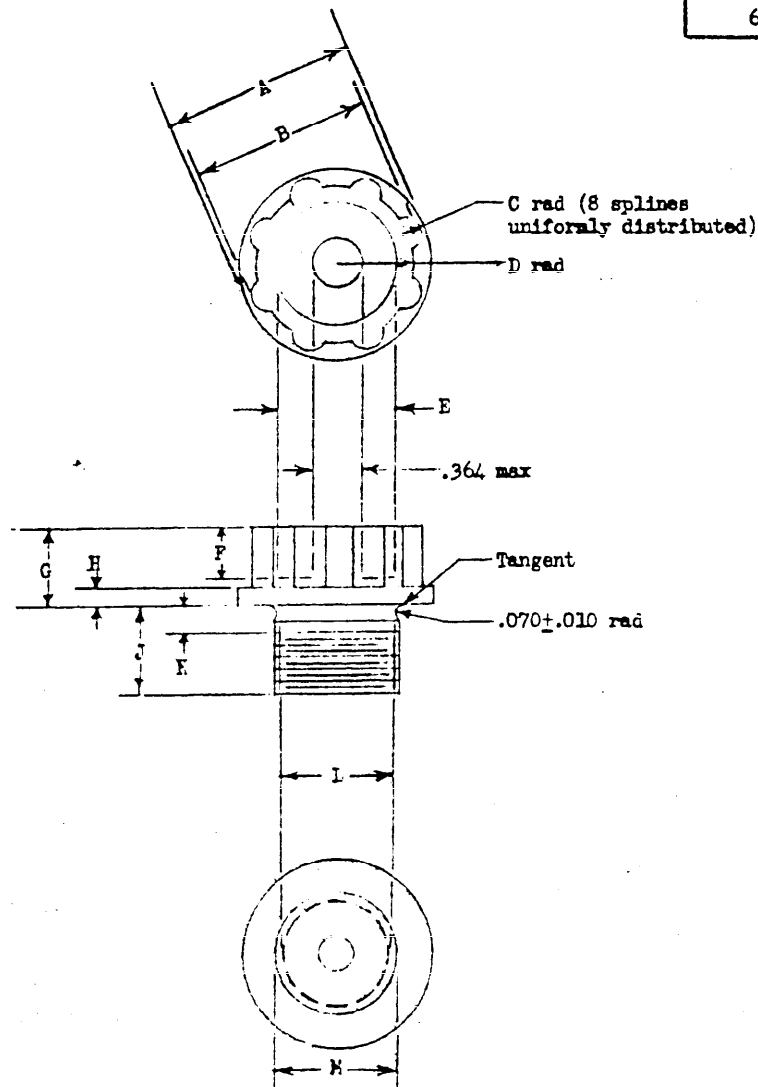
Old Style Bayonet Type Plug

Department of the Navy, and is mandatory for use by this activity. All other military activities are required to comply with standard when available.

P.A.	TITLE	MILITARY STANDARD
Navy - AS Other Cust	PLUGS, VENTING, ELECTROLYT. ACCESS HOLE, CELL, AIRCRAFT ALKALINE STORAGE BATTERY	MS 3510(AS)
Procurement Specification MIL-E-8-099	SUPERSEDES:	SHEET 1 OF 6

DD FORM 1 SEP 67 672 (Limited coordination) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

REVISED 27 Apr 1971
APPROVED 10 Dec 70

FED. SUP CLASS
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MS Part Number	Limit	A	B	C	D	E	F	G	H	J
MS3510	max	1.120	1.030	.103	.475	.840	-	.635	.130	.635
-3	min	1.100	1.020	.082	.462	.830	.403	.615	.120	.615
MS3510	max	1.438	1.317	.135	.561	.891	-	.630	.135	.595
-4	min	1.422	1.307	.115	.551	.859	.430	.620	.125	.585

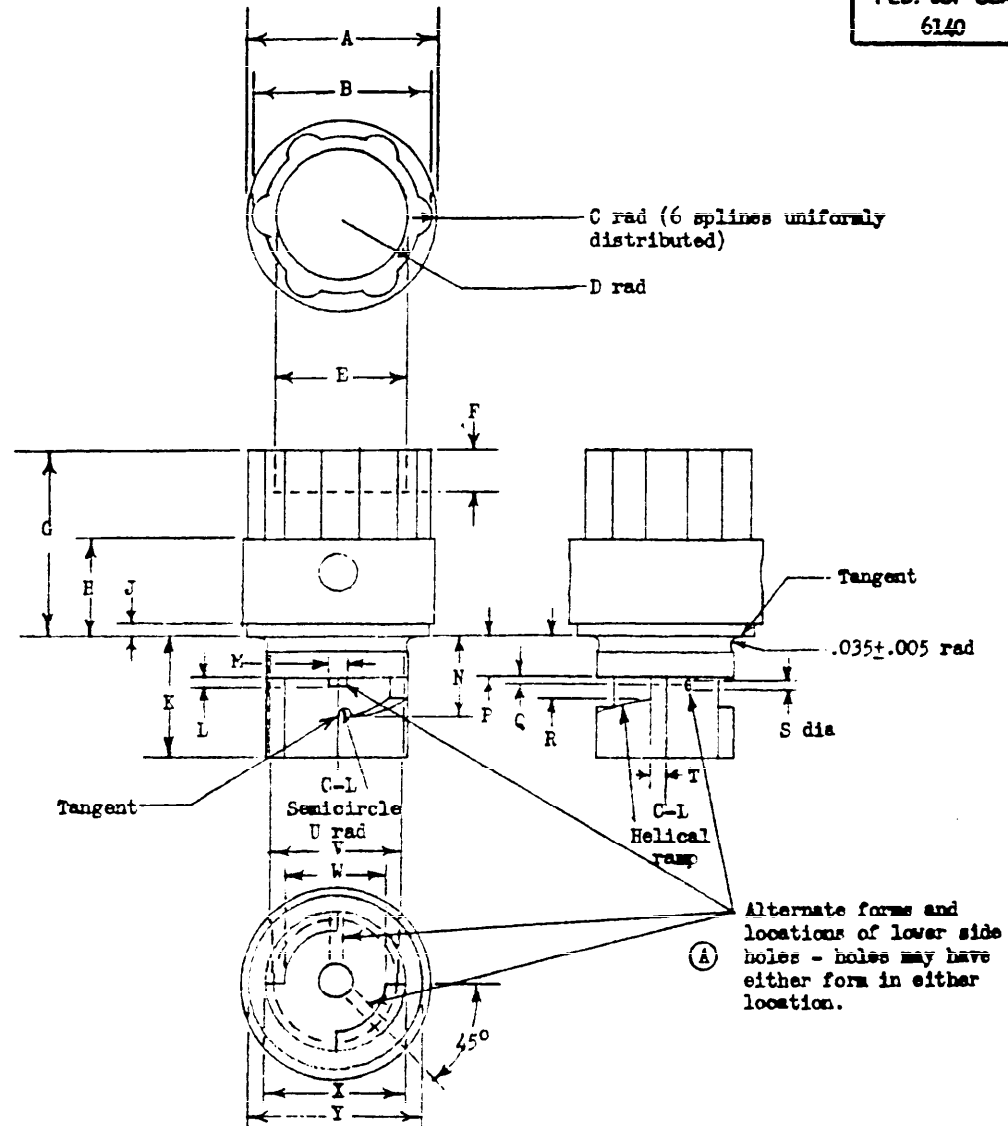
MS Part Number	Limit	F	I	M	Thread	Washer	Max. Wt. lb	Test Box Vol. cub. in.
MS3510	max	.291	.730	.760	3/4-16	MS3510	0.024	65
-3	min	.271	.710	.750	NF-2	-15	-	-
MS3510	max	.255	.860	.895	7/8-14	MS3510	0.034	110
-4	min	.245	.850	.885	UNF-24	-16	-	-

Old Style Threaded Type Plugs

P.A.	TITLE	MILITARY STANDARD
NAVY - AS Other Cost	PLUGS, VENTING, ELECTROLYTE ACCESS HOLE, CELL, AIRCRAFT ALKALINE STORAGE BATTERY	MS 3510(AS)
Procurement & Certification NIA-E-81099	SUPERSEDES	SHEET 2 OF 6

REVISED (A) 27 Apr 1971
APPROVED 10 Dec 70

Department of the Navy, and is necessary to use by that activity. All other military activities are required to comply with this standard when applicable.

FED. SUP CLASS
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MS Part Number	Co- lor	Li- mit	A	B	C	I	E	F	G	H	J	K	L	M	N	P
MS3510-5	Red	max	.690	.620	.083	.281	.474	-	.683	.351		.385			.261	.128
-6	Blue	min	.670	.610	.063	.276	.454	.200	.663	.331	0	.365	-	-	.256	.128
-7	Red	max	.880	.802	.103	.360	.605	-	.872	.440	.080	.557	.085	.115	.330	.190
-8	Blue	min	.860	.792	.083	.355	.585	.260	.852	.420	.070	.537	.075	.105	.325	.170

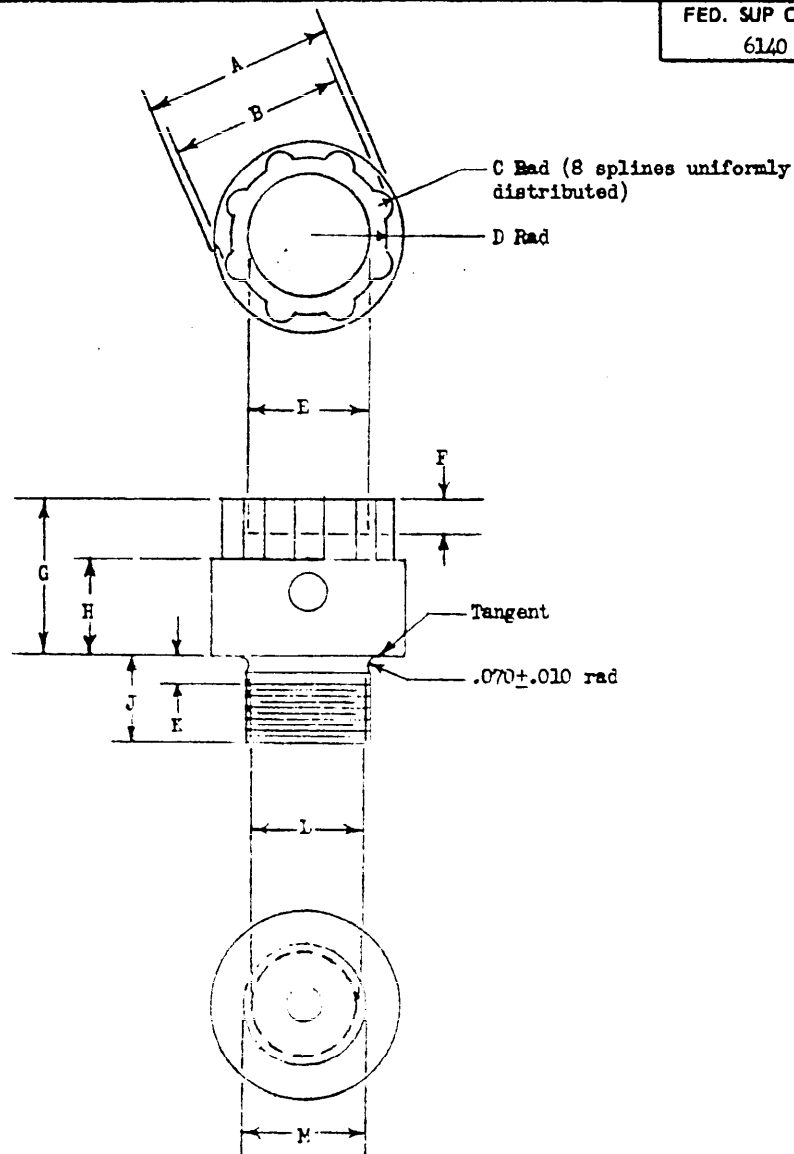
MS Part Number	Li- mit	Q	P	S	T	U	V	W	X	Y	Washer	Max. Wt. lb	Test Box Vol. cub ins
MS3510-5	max	-	.223	-	.060	.031	.494	.367	.505	-	MS3510	0.0086	10
-6	min	-	.213	-	.055	.023	.484	.357	.495	-	-13		
-7	max	.055	.280	.060	.070	.040	.613	.470	.640	.819	MS3510	0.017	35
-8	min	.030	.275	.050	.065	.030	.603	.465	.635	.805	-14		

New Style Bayonet Type Plugs

P.A.	TITLE	MILITARY STANDARD
Navy - AS Other Cust	PLUGS, VENTING, ELECTROLYTE ACCESS HOLE, CELL, AIRCRAFT ALKALINE STORAGE BATTERY	MS 3510(AS)
Procurement Specification MIL-E-81099	SUPERSEDES:	SHEET 3 OF 6

This standard has been approved by the Naval Air Systems Command,
Department of the Navy and is mandatory for use by
that activity. All other military activities are requested
to employ this standard where suitable.

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MS Part Number	Color	Limit	A	B	C	D	E	F	G	H
MS3510-9	Red	Max	1.120	1.030	.103	.473	.840	-	1.010	.510
-10	Blue	Min	1.100	1.020	.083	.463	.830	.330	.990	.490
-11	Red	Max	1.438	1.317	.135	.561	.891	-	1.072	.578
-12	Blue	Min	1.422	1.307	.115	.551	.850	.390	1.052	.558

MS Part Number	Limit	J	K	L	M	Thread	Washer	Max. Wt., lb	Test Box Vol., cub. ins.
MS3510-9	Max	.635	.291	.730	.760	3/4-16	MS3510	-	-
-10	Min	.615	.271	.710	.750	NF-2	-15	0.027	65
-11	Max	.595	.255	.660	.695	7/8-14	MS3510	-	-
-12	Min	.585	.245	.650	.685	UNF-2A	-16	0.043	110

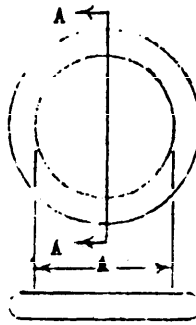
New Style Threaded Type Plug

NAVY - AS	TITLE	MILITARY STANDARD
Other Cost	PLUGS, VENTING, ELECTROLYTE ACCESS HOLE, CELL, AIRCRAFT ALKALINE STORAGE BATTERY	MS3510(AS)
Specification	SUPERSEDES	SHEET 4 OF 6
STC-E-81099		

This standard has been approved by the Naval Air Systems Command, Department of the Navy, and is mandatory for use by the activity. All other military activities are required to comply with this standard where applicable.

DD FORM 1 SEP 67 672 (Limited coordination) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

REVISED (A) 27 Apr 1971
APPROVED 10 Dec 70

FED. SUP CLASS
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A-A

MS Part Number	A ±.006	B ±.004
MS3510-13	.426	.070
-14	.612	.103
-15	.734	.139
-16	.859	.139

WashersNOTES.

1. **DIMENSIONS.** Each item shall conform to the dimensions shown on this standard. All linear dimensions are in inches.

2. **MS PART NUMBERS.** The MS part numbers of the items shall be as listed on this standard.

3. **CONSTRUCTION.** Each plug shall be made entirely of electrically non-conductive materials. Each plug shall be symmetrical about an axis as shown on this standard except for threads. Threads shall conform to MIL-S-7742. Each plug shall include a washer conforming to the MS part number listed on this standard. Each plug shall be made so that it can be installed in a suitable hole in a flat plate, and shall make an airtight seal with the plate. Each plug shall include a hole in its bottom end on the axis, and a hole in its top end on the axis, as shown on this standard. Each large size bayonet type plug shall also include two holes in the side in the lower part of the plug as shown on this standard, which shall be connected to the hole in the bottom end of the plug. Each red plug shall also include two or more holes in the side in the upper part of the plug, uniformly distributed in the region shown on this standard, which shall be connected to the hole in the top end of the plug. Each plug shall be airtight except for the specified holes. Each plug shall include a pressure-operated check valve connecting the lower and upper holes together, which shall control flow of air from the lower hole(s) to the upper hole(s) according to pressure, and shall prevent flow from the upper hole(s) to the lower hole(s). The orientation of the splines, upper side holes, and bayonet locks of bayonet type plugs, and the splines and upper side holes of threaded type plugs, relative to one another, is optional.

4. **WASHERS.** Each washer shall be made of material conforming to MIL-G-22050.

5. **SPECIFICATION.** Plugs shall conform to MIL-E-81099 modified as follows (initial numbers refer to paragraphs of the specification):

3.6 COLOR. Replace the text with: "Each old style plug shall be white. Each new style plug shall have a color conforming to requirements of FED-STD-595 for color number 21136 (red) or 15102, 15123, or 15193 (blue), as listed on the standard. The criterion for conformance to this requirement is that the color shall be closer to the specified color than to any other color in FED-STD-595."

4.3.1 INDIVIDUAL TESTS. The individual tests shall be those of 4.6.1 and 4.6.2.

4.3.2 SAMPLING TESTS. One plug shall be selected at random by the Government inspector from each group of 1,000 plugs, or remaining group of 501 to 1,000 plugs, produced under the contract (representing 1,000 plugs, or remaining group of 500 to 999 plugs, to be delivered under the contract), but with a minimum of one plug being selected. Those plugs shall be subjected to the tests of 4.6.3 through 4.6.7. Acceptance of each group of plugs shall be withheld until the

This standard has been approved by the United States Air Force Command, Department of the Army, and is mandatory for use by that activity. All other military activities are required to comply with this standard when applicable.

NAME - AS	TITLE	MILITARY STANDARD
Other Code	PLUGS, VENTING, ELECTROLYTE ACCESS HOLE, CELL, AIRCRAFT ALKALINE STORAGE BATTERY	MS 1510 (AS)
Department Specification	SUPEROSESS	SHEET 5 OF 6
MIL-E-81099		

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plug representing the group has passed the tests.

Add: 4.5.1.1 MOUNTING. When the plug must be mounted, it shall be installed in a suitable hole in a flat plate of material conforming to requirements of MIL-P-17091 for Type 1.

Add: 4.6.3.1 IMMERSION IN ALKALI. The plug shall be immersed in potassium hydroxide of specific gravity 1.10 ± 0.05 for 4.0 ± 0.2 hours. There shall not be any damage done to the plug by this test. The plug shall be washed and dried after this test.

4.6.4 EVALUATION. The plug shall be installed on the top of a box having the internal volume called out on the standard, $\pm 10\%$. A pressure-vacuum gage shall also be installed on the box. The box shall be connected through a shut-off valve and a selector valve to sources of compressed air and vacuum which, when the shut-off valve is open, shall maintain a pressure of 20 ± 2 pounds per square inch or a vacuum of 10 ± 1 pounds per square inch, as selected, in the box regardless of the condition of the valve in the plug. The box shall be airtight except for the openings for the plug, pressure-vacuum gage, and shut-off valve, and the gage and valve shall have the smallest possible internal volume. A flat metal plate lined with a flat sheet of sponge elastomer shall be clamped onto the top of each red plug so as to make an airtight seal on the top of the plug. The plug shall be tested in accordance with 4.6.4.1 and 4.6.4.2.

Add: 4.6.4.1 PRESSURE TEST. Pressure shall be applied to the box and the shut-off valve shall be closed. The pressure shall decrease to ten pounds per square inch in not more than four seconds, but shall not decrease to less than two pounds per square inch in one minute.

Add: 4.6.4.2 VACUUM TEST. Vacuum shall be applied to the box and the shut-off valve shall be closed. The vacuum shall not decay by more than 10% in one minute.

(A) Entire standard revised, sheets 1 and 2 added.

Project Number 6140-N310

P.A. NAVY - AS	TITLE PLUGS, VENTING, ELECTROLYTE ACCESS HOLE, CELL, AIRCRAFT ALKALINE STORAGE BATTERY	MILITARY STANDARD
Other Cust		MS 3510(AS)
Procurement Specification MIL-E-81099	SUPERSEDES:	SHEET 6 OF 6

APPROVED 10 Dec 70 REVISED (A) 27 Apr 1971

This standard has been approved by the Naval Air Systems Command, Department of the Navy, and is mandatory for use by that activity. All other military activities are required to employ this standard where applicable.