

INCH-POUND

MS90557G
 26 October 2005
 SUPERSEDING
 MS90557F
 14 June 1995

DETAIL SPECIFICATION SHEET

CONNECTOR, PLUG, ELECTRICAL, CABLE CONNECTING,
 (WITHOUT COUPLING RING), CLASS L

This specification is approved for use by all Departments
 and Agencies of the Department of Defense

The requirements for acquiring the product described herein
 shall consist of this specification sheet and MIL-DTL-22992.

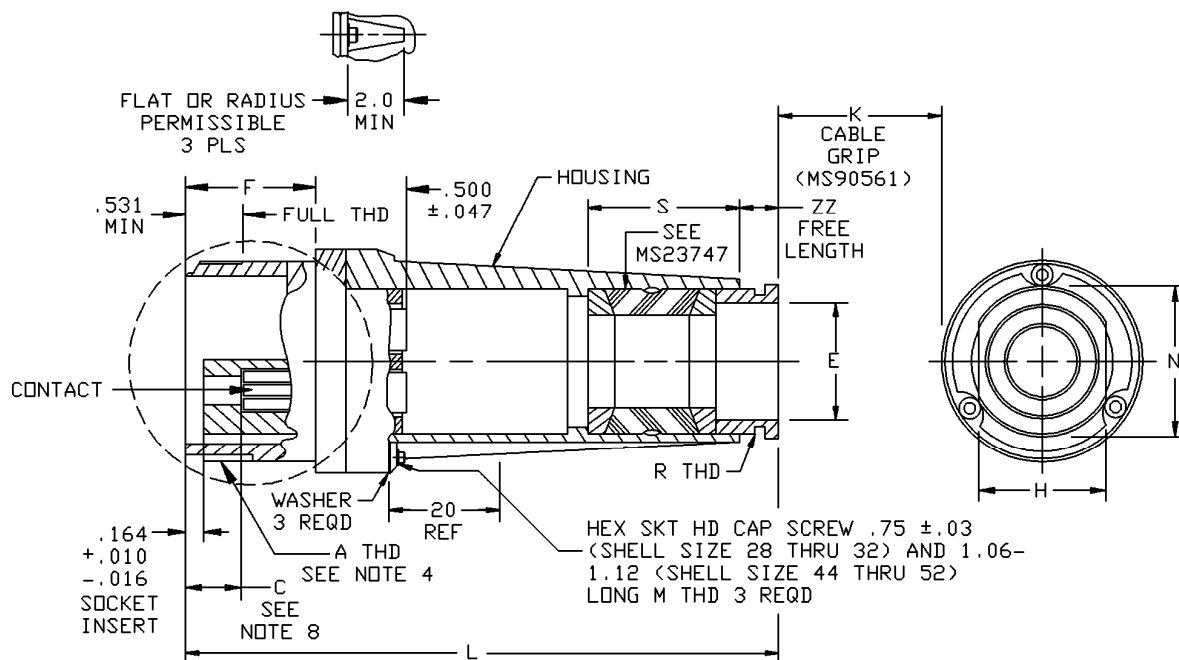


FIGURE 1. Dimensions and configuration.

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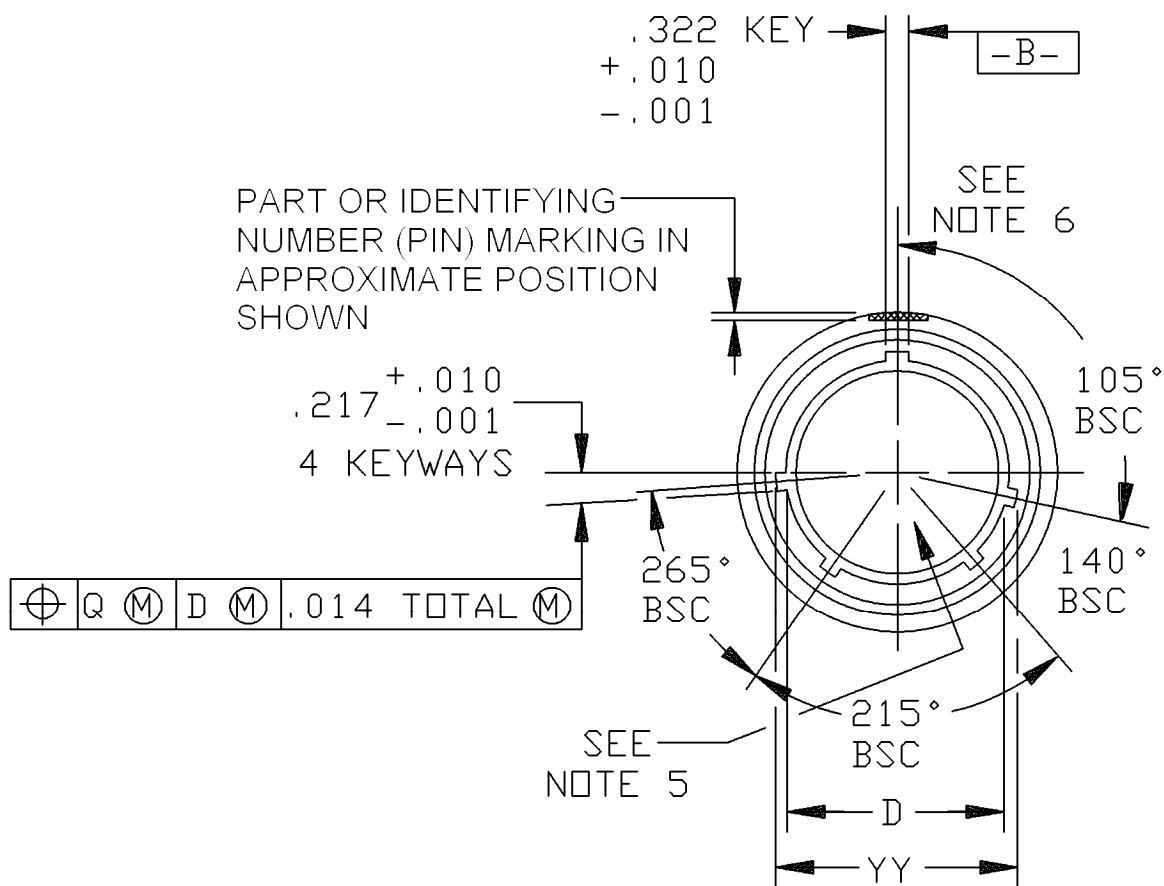


FIGURE 1. Dimensions and configuration - Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	.03	.016	.41	.120	3.05	.380	9.65
.002	.05	.020	.51	.130	3.30	.381	9.68
.005	.13	.022	.56	.135	3.43	.500	12.70
.006	.15	.025	.64	.142	3.61	.531	13.49
.008	.20	.031	.79	.164	4.17	.750	19.05
.010	.25	.047	1.19	.217	5.51	1.125	28.58
.014	.36	.062	1.57	.322	8.18	2.0	50.8
.015	.38	.100	2.54	.375	9.53		

Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.005	0.13	1.138	28.91	1.935	49.15	2.678	68.02	3.156	80.16
.137	3.48	1.156	29.36	1.937	49.20	2.685	68.20	3.174	80.62
.143	3.63	1.281	32.54	1.938	49.23	2.687	68.25	3.185	80.90
.187	4.75	1.405	35.69	1.943	49.35	2.689	68.30	3.187	80.95
.198	5.03	1.514	38.46	2.015	51.18	2.693	68.40	3.193	81.10
.223	5.66	1.531	38.89	2.026	51.46	2.744	69.70	3.265	82.93
.229	5.82	1.539	39.09	2.104	53.44	2.765	70.23	3.276	83.21
.275	6.99	1.562	39.67	2.125	53.97	2.776	70.51	3.406	86.51
.286	7.26	1.655	42.04	2.188	55.58	2.781	70.64	3.646	92.61
.322	8.18	1.674	42.52	2.239	56.87	2.789	70.84	3.656	92.86
.338	8.59	1.685	42.80	2.354	59.79	2.905	73.79	3.667	93.14
.406	10.31	1.687	62.85	2.405	61.09	2.924	74.27	3.896	98.96
.617	10.59	1.693	63.00	2.428	61.67	2.935	74.55	3.917	99.49
.510	12.95	1.733	44.02	2.639	61.95	2.937	76.60	4.146	105.31
.526	13.36	1.765	44.83	2.494	63.35	2.943	74.15	4.167	105.84
.594	15.09	1.776	45.11	2.531	64.29	3.015	76.58		
.605	15.37	1.181	45.24	2.539	64.49	3.026	76.86		
.663	16.84	1.789	45.44	2.655	67.44	3.031	76.99		
.913	23.19	1.926	48.87	2.674	67.92	3.039	77.19		

FIGURE 1. Dimensions and configuration - Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	1.130	28.70	1.609	40.87	2.453	62.31	8.688	220.68
.010	0.25	1.135	28.83	1.672	40.47	2.545	64.64	9.688	246.08
.011	0.28	1.187	30.15	1.692	42.98	2.692	68.38	10.125	257.18
.020	0.51	1.217	30.91	1.703	43.26	2.750	69.85	10.688	271.48
.035	0.89	1.250	31.75	1.734	44.04	2.755	69.98	11.062	280.97
.273	6.93	1.259	31.98	1.750	44.45	2.854	72.49	12.688	322.28
.523	13.28	1.312	33.32	1.786	45.36	2.875	73.02	13.688	347.68
.562	14.27	1.313	33.35	1.797	45.64	2.911	73.94	14.188	360.38
.672	17.07	1.342	34.09	1.867	47.42	2.953	75.01	17.188	436.58
.719	13.36	1.375	34.93	1.942	49.33	3.005	76.33	18.188	461.98
.742	18.85	1.391	35.33	2.000	50.80	3.161	80.29		
.844	15.37	1.438	36.53	2.183	55.45	3.250	82.55		
.922	18.26	1.516	38.51	2.250	57.15	6.688	169.88		
1.005	25.53	1.536	39.01	2.308	58.62	7.188	182.58		
1.047	26.59	1.547	39.29	2.328	59.13	8.156	207.16		
		1.558	39.57	2.448	62.18	8.188	207.98		

NOTES:

1. All dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are $\pm .016$ (0.41 mm).
4. Mates with receptacles shown on MS90558.
5. Inserts and contacts are removable.
6. Normal key position. For alternate key position, see figure 2.
7. G dimension from the front of the shell to the shoulder in the shell.
8. This depth is the point at which the square-ended gauge pin, of the same basic diameter as the mating pin, first engages the spring of the socket contact.

FIGURE 1. Dimensions and configuration - Continued.

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TABLE I. Plug dimensions.

Shell size	M thread	S max	R THD class 2 left hand	DD dia basic	GG dia	HH thread class 2B
28	.164-32UNC	1.817	1.8750-16UN	2.104	2.439 2.428	.164-32UNC
32	.164-32UNC	1.817	1.8750-16UN	2.354	2.689 2.678	.164-32UNC
44	.250-28UNF	1.943	1.3125-16UNS	3.156	3.667 3.646	.250-28UNF
48	.250-28UNF	2.130	2.7500-16UN	3.406	3.917 3.896	.250-28UNF
52	.250-28UNF	2.193	3.0000-16UN	3.656	4.167 4.146	.250-28UNF

TABLE I. Plug dimensions - Continued.

Shell size	KK thread		JJ dia	EE dia	FF dia
	Class 2B	Modified minor die			
28	.164-32UNC	.143/.137	.198 .187	1.693 1.687	1.776 1.765
32	.164-32UNC	.143/.137	.198 .187	1.943 1.937	2.026 2.015
44	.250-28UNF	.229/.223	.286 .275	2.693 2.687	2.776 2.765
48	.250-28UNF	.229/.223	.286 .275	2.943 2.937	3.026 3.015
52	.250-28UNF	.229/.223	.286 .275	3.193 3.187	3.276 3.265

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TABLE I. Plug dimensions - Continued.

Shell Size	B dia Max	G ± .005	C maximum		Packing preformed
			Phase Neutral	Ground	
28	1.281	1.514	.913	.913	MS29513-128
32	1.562	1.514	.913	.913	Ms29513-132
44	2.239	1.733	1.138	.663	Ms29513-144
48	2.494	1.733	1.156	.663	Ms29513-148
52	2.744	1.733	1.156	.663	Ms29513-151

TABLE I. Plug dimensions - Continued.

Shell Size	Hex socket head size	AA dia	BB dia	CC dia min	LL	MM
28	9/64	1.685	1.539	1.405	.417	.338
		1.674	1.531		.406	.322
32	9/64	1.935	1.789	1.655	.417	.338
		1.924	1.781		.406	.322
44	3/16	2.685	2.539	2.405	.605	.526
		2.674	2.531		.594	.510
48	3/16	2.935	2.789	2.655	.605	.526
		2.924	2.781		.594	.510
52	3/16	3.185	3.039	2.905	.605	.526
		3.174	3.031		.594	.510

TABLE II. "U" diameter by contact size.

Contact size	"U" diameter (metric equivalent in parentheses)
4/0	.510/.515 (12.95/13.08)
2/0	.416/.421 (10.57/10.69)
1/0	.367/.372 (9.32/9.45)
4	.235/.240 (5.97/6.10)
6	.188/.193 (4.27/4.90)

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TABLE III. Accessory interface dimensions.

Size	Arrangement no.	E cable range	K approx free length	H + .001 - .010	L max free length	N dia + .011 - .005	F +.011 -.005	YY dia + .010 - .006	ZZ ± .035 free length
28	-02, -04	.844 / .719	6.688	1.750	8.156	2.000	2.448	1.692	.562
	-03, -05, -06	.969 / .844	7.188						
	-07, -12,	1.047 / .922	7.188						
	-13	1.130 / 1.005	7.188						
32	-02, -04	.969 / .844	7.188	1.750	8.156	2.000	2.448	1.942	.562
	-03, -05, -12	1.130 / 1.005	7.188						
	-06	1.047 / .992	7.188						
	-07	1.259 / 1.135	8.188						
	-13	1.342 / 1.217	8.688						
44	-02, -04	1.312 / 1.187	10.688	2.250	10.125	2.500	2.854	2.692	.672
	-03, -05	1.438 / 1.313	9.688						
	-06	1.375 / 1.250	9.688						
	-12	1.516 / 1.391	10.688						
	-13	1.672 / 1.547	12.688						
	-51	1.734 / 1.609	11.688						
48	-13	2.000 / 1.867	14.188	2.750	10.688	2.953	2.854	2.911	.672
52	-02	1.703 / 1.558	13.688	2.875	11.062	3.250	2.854	3.161	.672
	-06	1.797 / 1.652	13.688						
	-12	2.328 / 2.183	17.188						
	-13	2.453 / 2.308	18.188						

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TABLE III. Accessory interface dimensions - Continued.

Size	Arrangement no.	E cable range	K approx free length	A thread class 2A	D dia +-.005 -.010	J +.020 -.010	
						Phase & neutral	Ground
28	-02, -04	.844 / .719	6.688	2.0000- .1428P-2857L	1.536	.523	.523
	-03, -05, -06	.969 / .844	7.188				
	-07, -12,	1.047 / .922	7.188				
	-13	1.130 / 1.005	7.188				
32	-02, -04	.969 / .844	7.188	2.250- .1428P-.2857L	1.786	.523	.523
	-03, -05, -12	1.130 / 1.005	7.188				
	-06	1.047 / .992	7.188				
	-07	1.259 / 1.135	8.188				
	-13	1.342 / 1.217	8.688				
44	-02, -04	1.312 / 1.187	10.688	3.000-.1428P-2857L	2.545	.742	.273
	-03, -05	1.438 / 1.313	9.688				
	-06	1.375 / 1.250	9.688				
	-12	1.516 / 1.391	10.688				
	-13	1.672 / 1.547	12.688				
	-51	1.734 / 1.609	11.688				
48	-13	2.000 / 1.867	14.188	3.250-.1428P-.2857L	2.755	.742	.273
52	-02	1.703 / 1.558	13.688	3.500- 1428P-.2857L	3.005	.742	.273
	-06	1.797 / 1.652	13.688				
	-12	2.328 / 2.183	17.188				
	-13	2.453 / 2.308	18.188				

1/ Arrangements 44-52 and 44-56 are for stub cable application only; they are not to be used in a cable.

2/ Arrangement 44-56 to include 4 each MS3348-1-6L contact bushings.

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Table IV. Insert arrangements, crimp bushings, and contacts.

Insert arrangement	Contacts <u>1/</u>		Cable conductors <u>1/</u>		Contact bushing required	
	Quantity	Size	Quantity	Size	Quantity	PIN MS3348-
28-02	2	6	2	8	2	6-8L
28-04	2	6	2	8	2	6-8L
	1	6 (G)	2	10 (G)	---	---
28-06	3	6	3	8	3	6-8L
	1	4 (G)	3	12 (G)	1	4-8L
28-07	3	6	3	8	---	---
	1	4 (G)	3	10 (G)	4	4-5L
28-12	4	6	4	8	4	6-8L
	1	6 (G)	4	12 (G)	---	---
32-02	2	4	2	6	2	4-6L
32-04	2	4	2	6	2	4-6L
	2	6 (G)	2	10 (G)	2	4-10L
32-05	2	4	2	4	---	---
	2	6 (G)	2	8 (G)	2	6-8L
32-06	3	4	3	6	3	4-6L
	1	4 (G)	3	12 (G)	1	4-8L
32-12	4	4	4	6	4	4-6L
	1	6 (G)	4	12 (G)	---	---
44-02	2	1/0	2	2	2	1-2L
44-04	2	1/0	2	2	2	1-2L
	2	4 (G)	2	6 (G)	2	4-6L
44-05	2	1/0	2	1	---	---
	2	4 (G)	2	5 (G)	2	4-5L
44-06	3	1/0	3	2	3	1-2L
	3	6 (G)	3	8 (G)	3	6-8L
44-12	4	1/0	4	2	4	1-2L
	4	6 (G)	4	9 (G)	4	6-9L
44-13	4	1/0	4	1	---	---
	4	6 (G)	4	8 (G)	4	6-8L
44-52	3	1/0	3	2	3	1-2L
	1	1/0 (G)	1	2 (G)	1	1-2L
44-56	3	1/0	3	6	3	1-6L
	1	1/0 (G)	1	6 (G)	1	1-6L
52-02	2	4/0	2	2/0	2	4/0-2/0L
52-06	3	4/0	3	2/0	3	4/0-2/0L
	3	4 (G)	3	5 (G)	3	4-5L

1/ (G) designates grounding.

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REQUIREMENTS:

Dimensions and configurations: See figures 1 and 2, and tables I, II, and III.

Mating: See MS90558 for mating receptacles.

Inserts and contacts: Removable.

For final installation: Contacts will be assembled in all insert holes.

Shell and nut finish: C (conductive) or N (nonconductive).

Normal keyway position: See figure 1.

Alternate keyway position: See figure 2.

Insert arrangements: See MS90565, MS90567, MS14054, MS14055, and MS16057.

Cover: In accordance with MS90563. Cover shall be attached to cap screw on body.

Crimp bushings: Shall be supplied with the contacts in accordance with MS33348 and table IV herein.

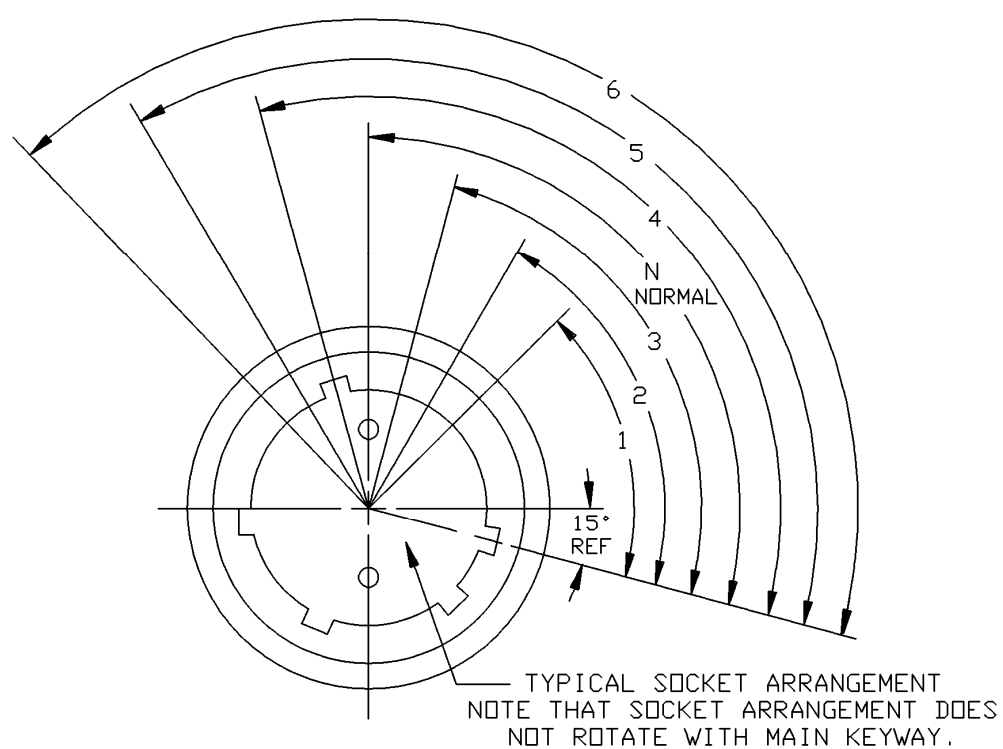
Cable sealing gland: In accordance with MS23747. Shall be supplied with each connector.

Cable grip: In accordance with MS90561. Shall be supplied with each connector.

PIN example:

	<u>MS90557</u>	<u>N</u>	<u>32</u>	<u>N</u>	<u>08</u>	<u>S</u>	<u>W</u>
MS number							
Finish							
Shell size							
Shell key position							
Insert arrangement							
Contact style							
Alternate position (No letter required for normal position)							

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Finish N (non grounding assemblies)

Shell size	Shell main key positions 2 wire, 28 V dc
28	N (105°)
32	N (105°)
46	N (105°)
48	N (105°)
52	N (105°)

FIGURE 2. Alternate key position.

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Finish C (grounding assemblies)

Shell size	Shell main key position (see note 3)						
	60 Hz and 400 Hz (see note 1)						
	1 Φ			3 Φ			3 Φ (see note 2)
	2 wire		3 wire	4 wire			3 wire
	120 V	240 V	120/260 V	120/208 V	240/416 V	277/480 V	450/480 V
28	4 (120°)	5 (135°)	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
32	4 (120°)	5 (135°)	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
44	4 (120°)	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	1 (60°)
48	---	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
52	---	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---

NOTES:

1. Discrimination of 60 Hz and 400 Hz assemblies is accomplished by alternate positioning of inserts. See applicable insert drawing for keying.
2. For Navy ground support equipment use only.
3. Shell main key positions 2 and 3 are not used.

FIGURE 2. Alternate key position - Continued.

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Referenced documents. In addition to MIL-DTL-22992, this document references the following:

MS3348
MS14054
MS14055
MS14057
MS23747
MS90558
MS90561
MS90563
MS90565
MS90567

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CONCLUDING MATERIAL

Custodians:

Army – CR
Navy – EC
Air Force – 11
DLA – CC

Preparing activity:

DLA – CC

Review activities:

Army – AT, AV, CR4, MI
Navy – AS, CG, MC, OS, SH
Air Force – 13, 19, 99

(Project 5935–4719–012)

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