

INCH-POUND

MIL-DTL-83513/31A  
 24 May 2004  
 SUPERSEDING  
 MIL-DTL-83513/31  
 26 November 2002

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, RECTANGULAR, RECEPTACLE, MICROMINIATURE,  
 POLARIZED SHELL, STRAIGHT, SOCKET CONTACTS, 2 ROW, SOLDER TYPE,  
 STANDARD PROFILE, 9 THROUGH 37 CONTACTS, PRINTED CIRCUIT BOARD

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-83513.

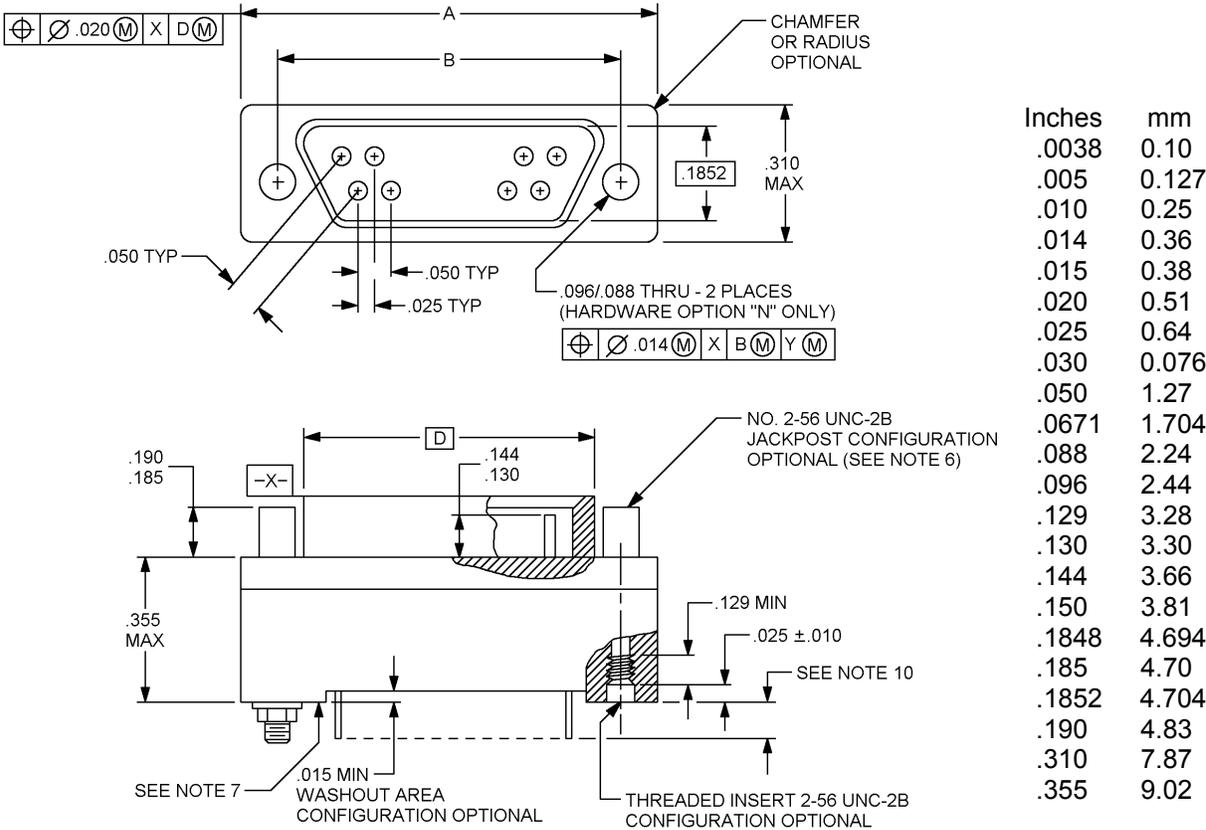
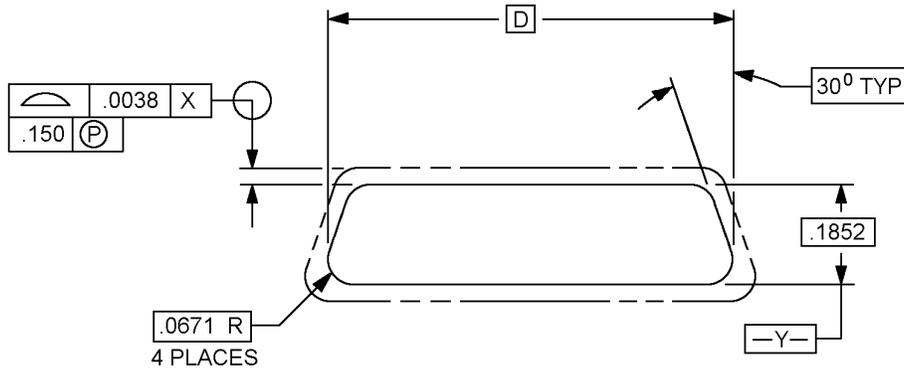


FIGURE 1. Connector, receptacle.

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DETAIL OF INTERFACE

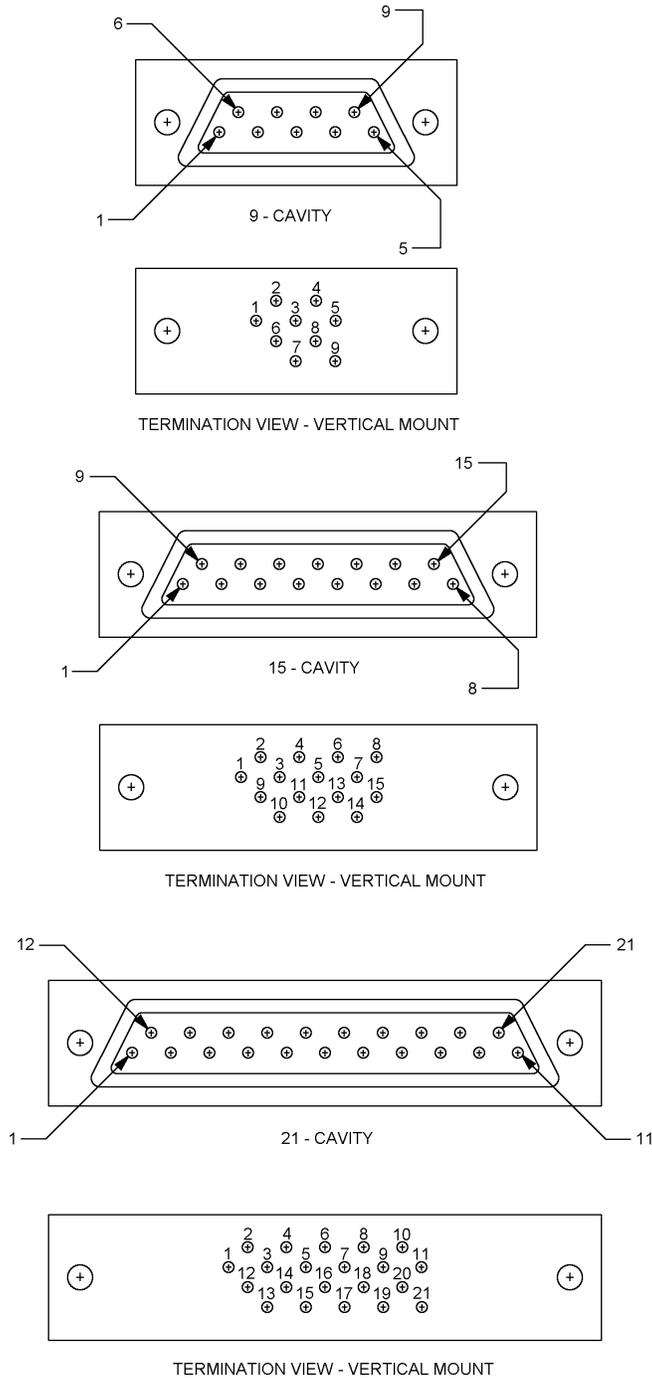
Number of contacts	A Max	B ±.005 (0.13)	D
9	.785 (19.94)	.565 (14.35)	.3342 (8.489)
15	.935 (23.75)	.715 (18.16)	.4842 (12.299)
21	1.085 (27.56)	.865 (21.97)	.6342 (16.109)
25	1.185 (30.01)	.965 (24.51)	.7342 (18.649)
31	1.335 (33.91)	1.115 (28.32)	.8842 (22.459)
37	1.485 (37.72)	1.265 (32.13)	1.0342 (26.269)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerances are  $\pm .005$  (0.13 mm).
4. Termination organization area to be optionally molded or filled with a potting fill material capable of passing the electrical and environmental requirements of MIL-DTL-83513. Plastic molding shall conform to type GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.
5. Metal shell shall be of material in accordance with MIL-DTL-83513 for class M parts.
6. Jackpost (permanently attached), and threaded insert when specified: Corrosion resistant steel in accordance with ASTM A484 and ASTM A582, 300 series stainless steel, passivated in accordance with SAE-AMS-QQ-P-35.
7. Separately molded plastic body (if used) shall conform to type GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.
8. Wire termination sockets shall conform to A-A-59551, number 24 AWG copper or be of a single piece contact with a tail of suitable conductive copper base alloy.
9. Interfacial seals are included with each type receptacle connector.
10. Termination lengths available: .109 (2.77 mm), .140 (3.56 mm), or .172 (4.37 mm). The tolerance shall be  $\pm .015$  (0.38 mm) for all termination lengths.

FIGURE 1. Connector, receptacle - Continued.

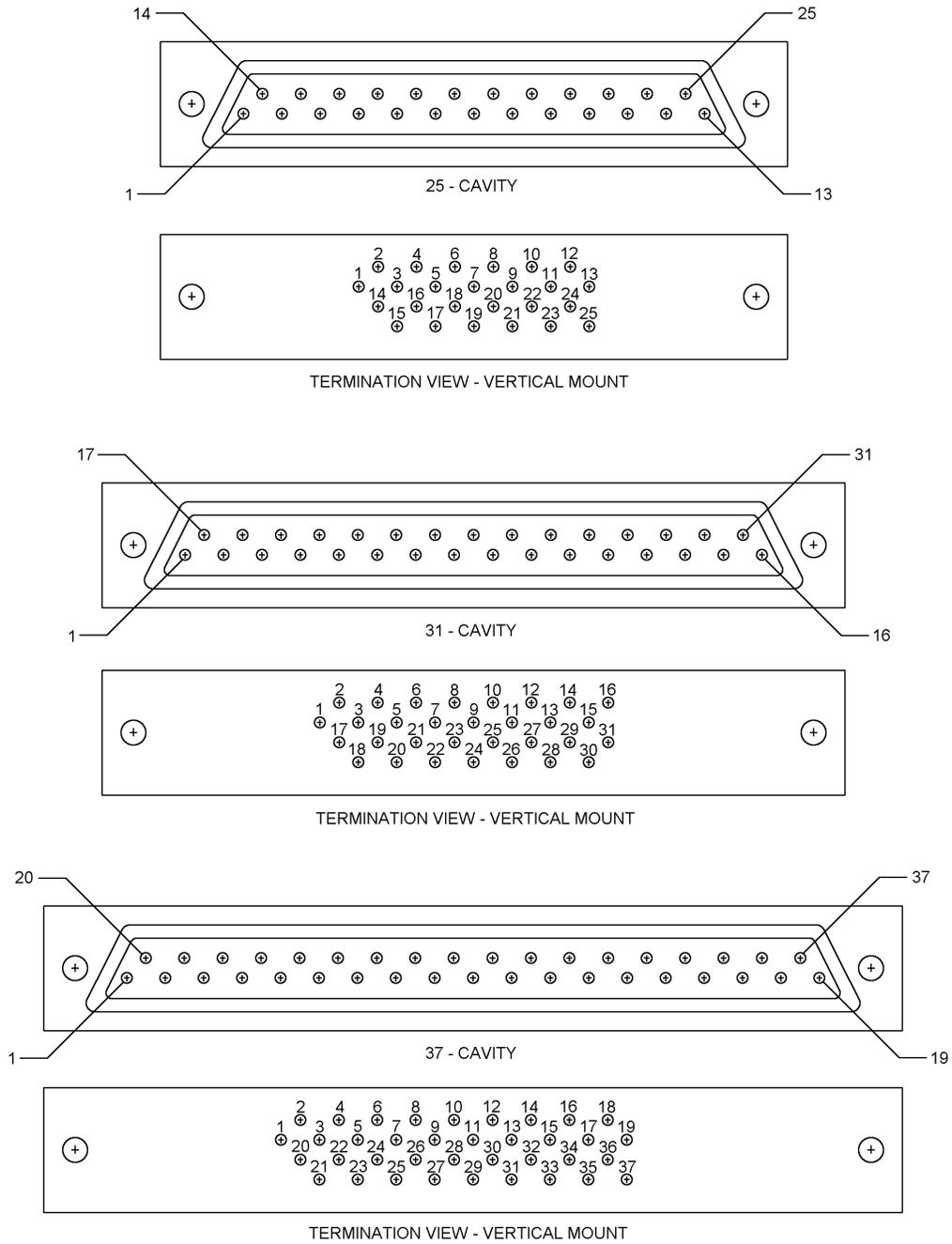
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NOTE: Engaging face of socket insert shown, cavity identification numbers are for reference only and do not appear on the part.

FIGURE 2. Insert arrangement.

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NOTE: Engaging face of pin insert shown, cavity identification numbers are for reference only and do not appear on the part.

FIGURE 2. Insert arrangement - Continued.

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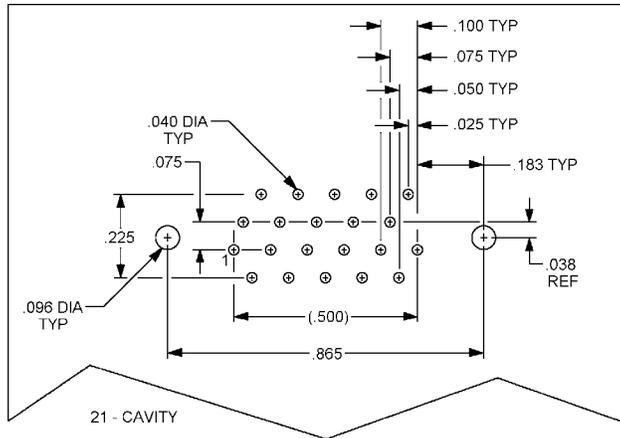
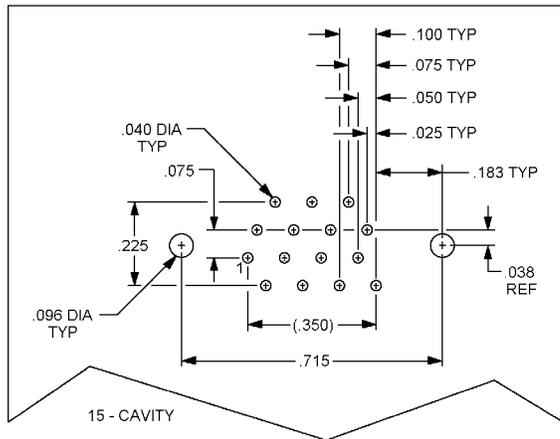
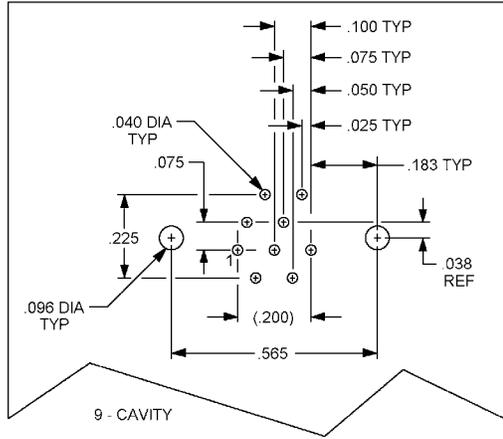


FIGURE 3. Layout arrangement.

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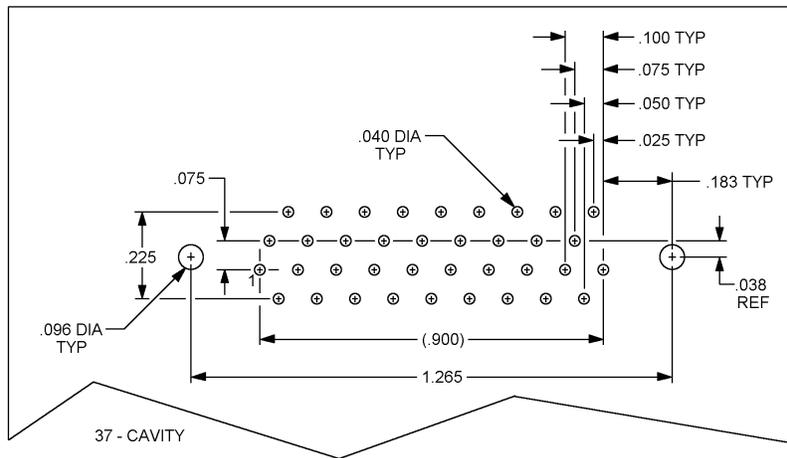
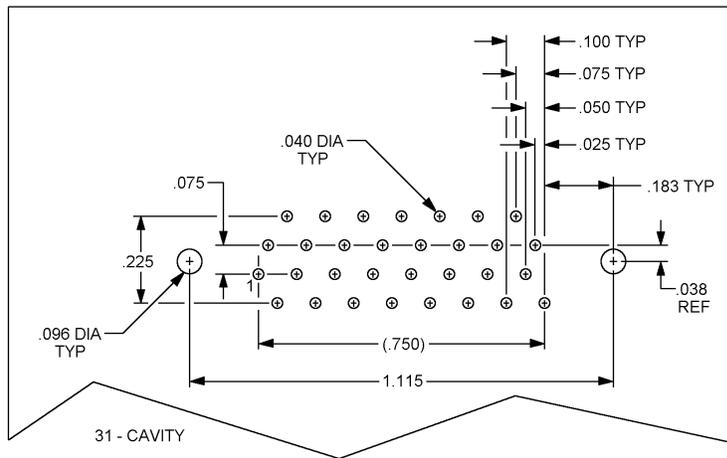
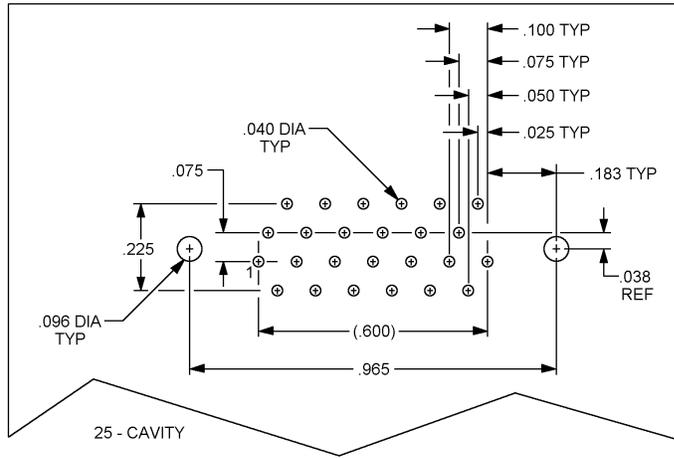


FIGURE 3. Layout arrangement - Continued.

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Inches	mm	Inches	mm	Inches	mm
.025	0.64	.183	4.65	.715	18.16
.038	0.97	.200	5.08	.750	19.05
.040	1.02	.225	5.72	.865	21.97
.050	1.27	.350	8.89	.900	22.86
.075	1.91	.500	12.70	.965	24.51
.096	2.44	.565	14.35	1.115	28.32
.100	2.54	.600	15.42	1.265	32.13

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are for information only.
3. Unless otherwise specified, tolerances are  $\pm 0.005$  (0.13 mm).
4. Patterns shown are for connector mounting side of PC board.

FIGURE 3. Layout arrangement - Continued.

REQUIREMENTS:

Dimensions and configurations: See figures 1, 2 and 3.

Current rating, maximum: 3 amperes per contact.

Materials:

Termination organization area: Potting fill material capable of passing the electrical and environmental requirements of MIL-DTL-83513.

Shell: The requirements for shell materials shall be in accordance with MIL-DTL-83513.

Plastic body or plastic molding: Shall conform to the requirements of GDI-30F or SDG-30F of ASTM D5948, or GPT-30F or GET-30F or GCT-30F of ASTM D5927 or MIL-M-24519 or GST-40F of ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50F in accordance with ASTM D5138 or MIL-M-24519.

Jackpost: Corrosion resistant steel in accordance with ASTM A484 and ASTM A582, 300 series stainless steel, passivated in accordance with SAE-AMS-QQ-P-35.

Wire termination pins: Wire termination pins shall be in accordance with A-A-59551, number 24 AWG copper or shall be of a single piece contact with a tail of suitable conductive copper based alloys.

Mating connector: Shall be in accordance with MIL-DTL-83513/1 and MIL-DTL-83513/3.

Plating of termination leads: Solder dipping of termination leads will be accomplished in SN60 PB40 or SN63 PB37 in accordance with J-STD-006.

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Part or Identifying Number (PIN): The PIN shall consist of the letter M, the basic number of the specification sheet, a letter from the insert, a numerical code for the termination length, and a letter code for the shell finish and hardware column.

<u>M83513/31-</u>   _____ Specification sheet number	<u>D</u>   _____ Insert arrangements (see figure 2) A = 9 B = 15 C = 21 D = 25 E = 31 F = 37	<u>01</u>   _____ Termination length 01 = .109 02 = .140 03 = .172	<u>C</u>   _____ Shell finish (Interface critical) C = cadmium N = electroless nickel (space application) P = passivated stainless steel	<u>P</u>   _____ Hardware N = No jackpost P = Jackpost attached T = Threaded insert W = Jackpost with threaded insert
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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-83513, this document references the following:

MIL-DTL-83513/1	ASTM A484
MIL-DTL-83513/3	ASTM A582
MIL-M-24519	ASTM D4067
A-A-59551	ASTM D5138
J-STD-006	ASTM D5927
SAE-AMS-QQ-P-35	ASTM D5948

CONCLUDING MATERIAL

Custodians:  
 Army - CR  
 Navy - EC  
 Air Force - 11  
 NASA - NA  
 DLA - CC

Preparing activity:  
 DLA - CC  
 (Project: 5935-4589-005)

Review activities  
 Army - AT, CR4, MI  
 Navy - AS, CG, MC, SH  
 Air Force - 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://www.dodssp.daps.mil>.