

INCH-POUND

MIL-DTL-12883/44D
18 February 2003
SUPERSEDING
MIL-PRF-12883/44C
28 June 1996

DETAIL SPECIFICATION SHEET

SOCKETS, PLUG-IN ELECTRONIC COMPONENTS, SOCKET FOR RELAYS, 4-POLE, 5 AMPERES
(MIL-PRF-6106 AND MIL-PRF 83536)

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 and MIL-DTL-12883.

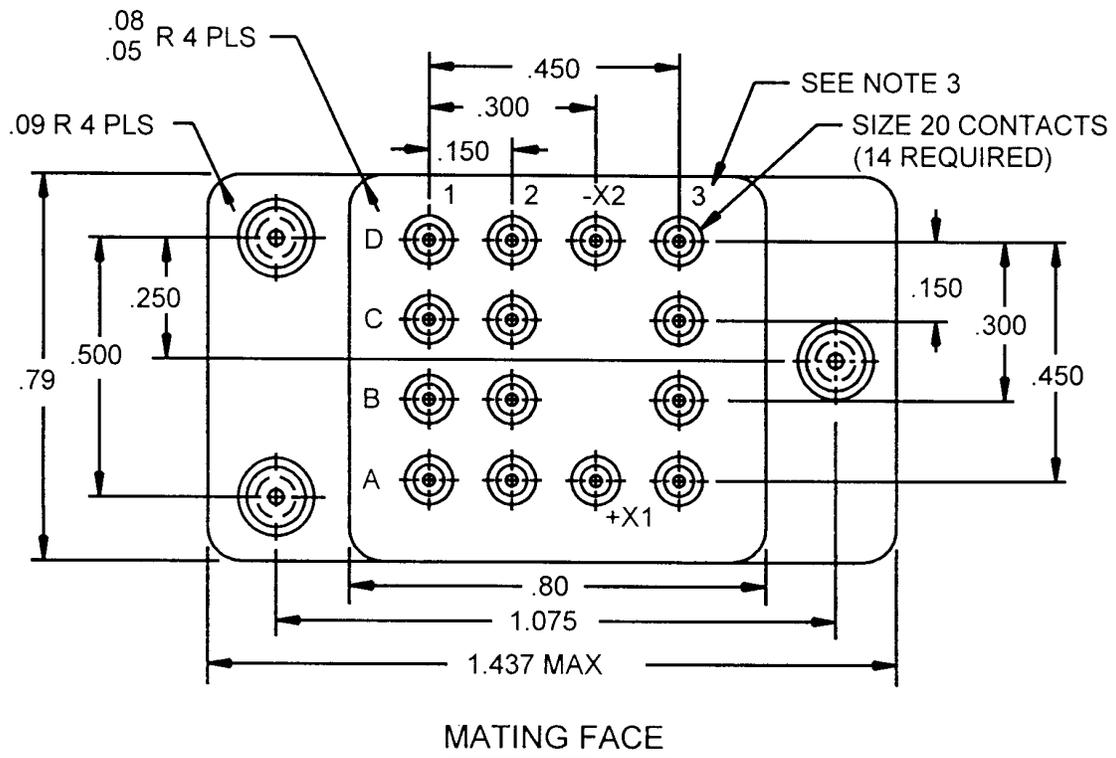
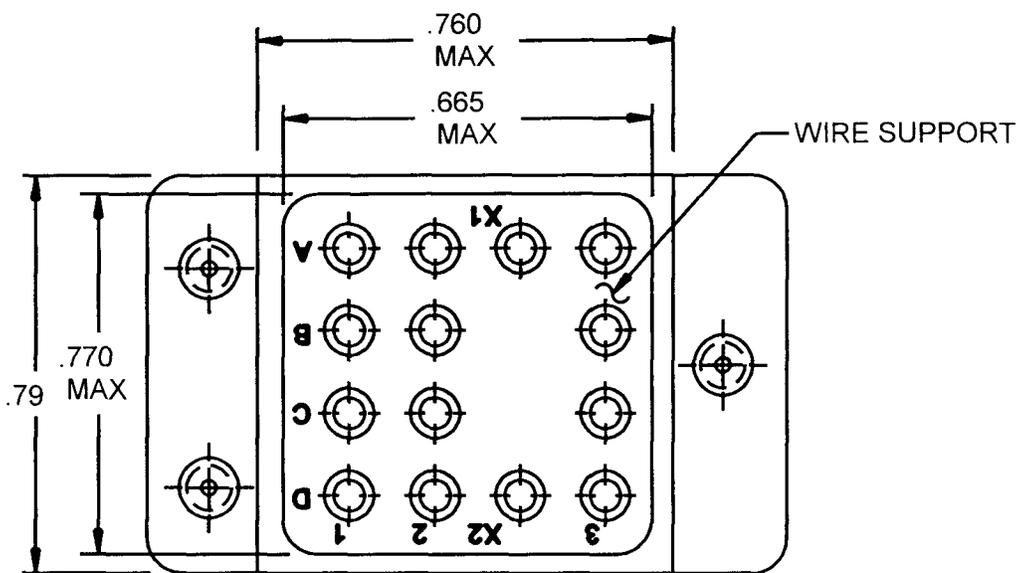


FIGURE 1. Socket configurations.

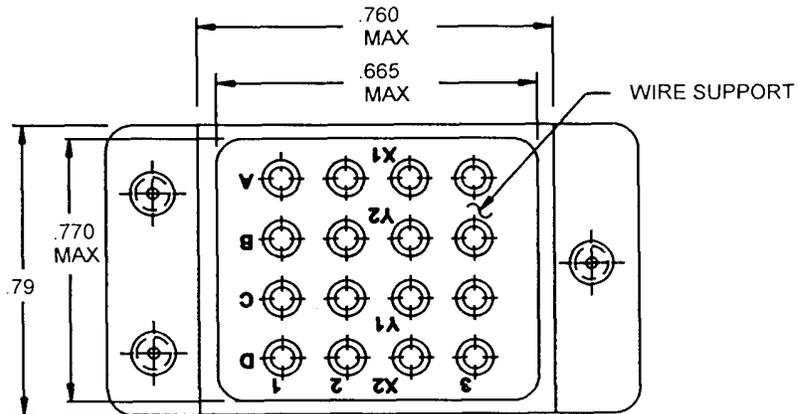
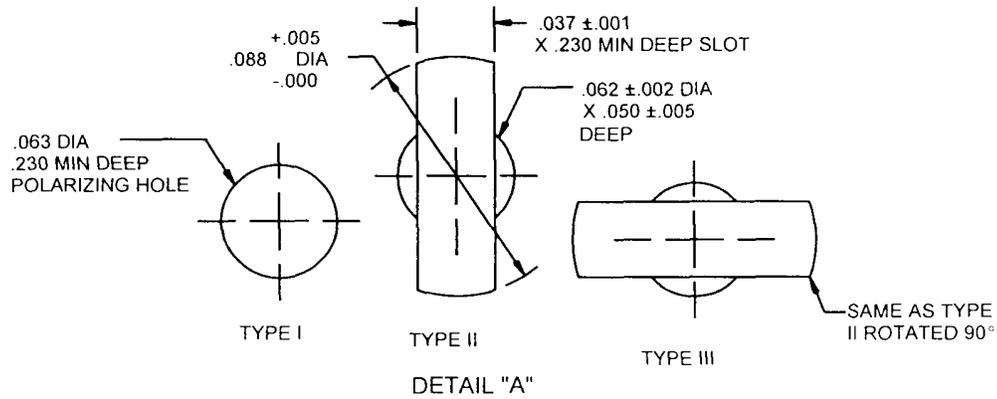
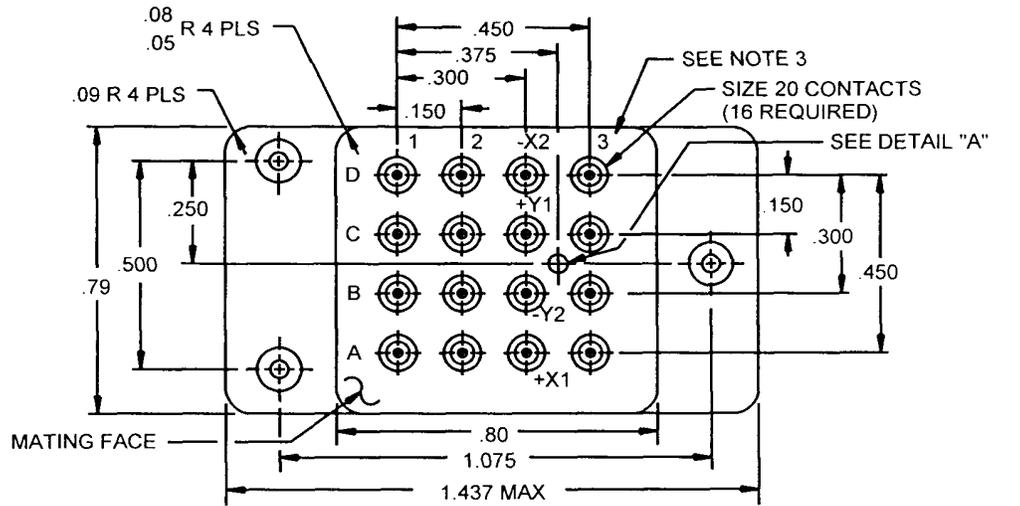


BOTTOM VIEW

(-01)

FIGURE 1. Socket configurations – Continued.

MIL-DTL-12883/44D

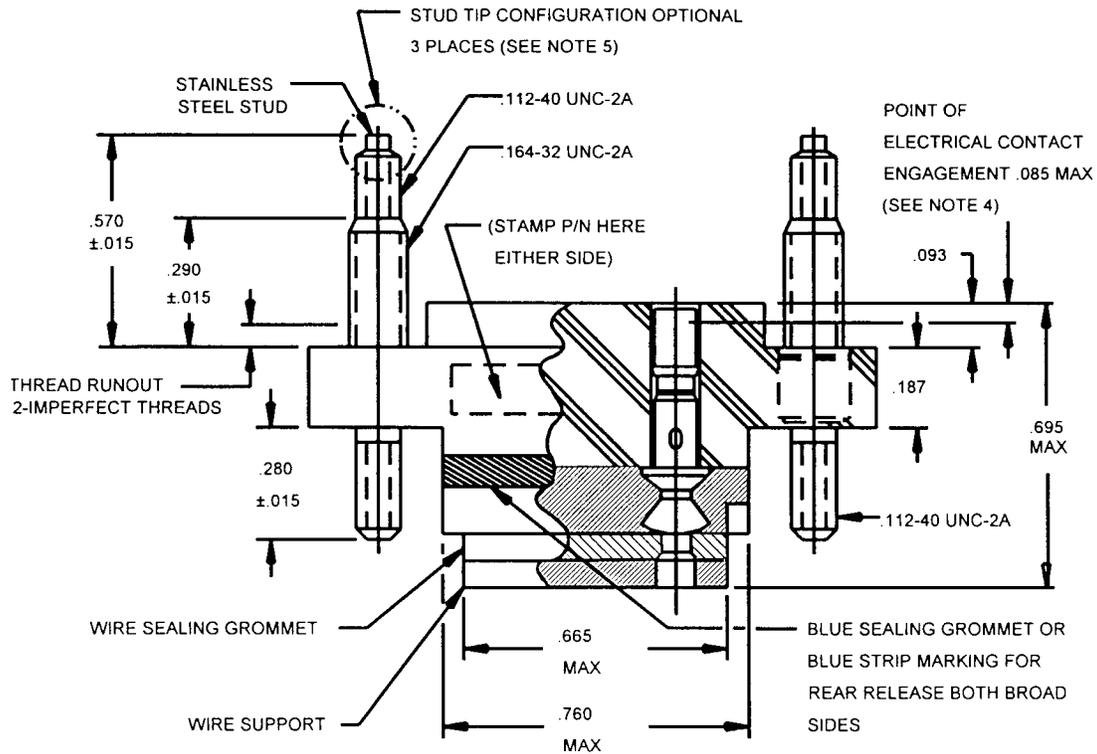


BOTTOM VIEW

(-02, -03, and -04)

FIGURE 1. Socket configurations – Continued.

MIL-DTL-12883/44D



(01, -02, -03, and-04)

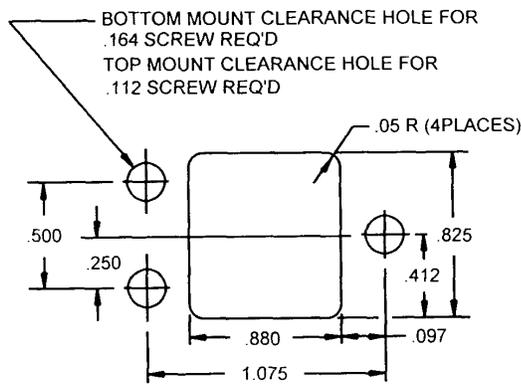
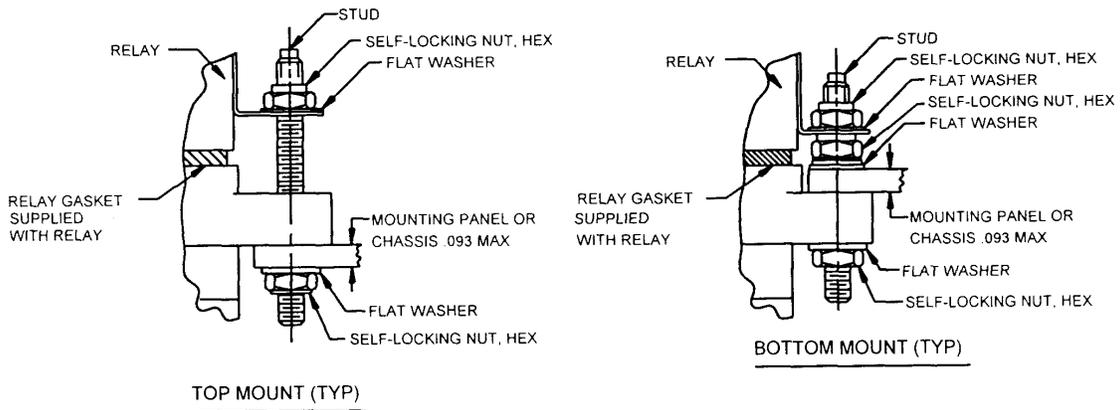
| Inches | mm | Inches | mm | Inches | mm |
|--------|------|--------|------|--------|-------|
| .001 | 0.03 | .088 | 2.24 | .375 | 9.53 |
| .002 | 0.05 | .093 | 2.36 | .450 | 11.43 |
| .005 | 0.13 | .112 | 2.84 | .500 | 12.70 |
| .015 | 0.38 | .150 | 3.81 | .570 | 14.48 |
| .037 | 0.94 | .164 | 4.17 | .665 | 16.89 |
| .05 | 1.3 | .187 | 4.75 | .695 | 17.65 |
| .050 | 1.27 | .230 | 5.84 | .760 | 19.30 |
| .062 | 1.57 | .250 | 6.35 | .770 | 19.59 |
| .063 | 1.60 | .280 | 7.11 | .79 | 20.07 |
| .08 | 2.0 | .290 | 7.37 | 1.075 | 27.31 |
| | | .300 | 7.62 | 1.437 | 36.50 |

NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is $\pm .005$ inch (0.13 mm) for three place decimals and $\pm .01$ inch (0.25 mm) for two place decimals.
3. Marking shall be characters, which are molded .035 inch (0.89 mm) minimum. Ink marking optional (see MIL-STD-1285).
4. Point of electrical contact engagement, from mating face of socket insulator to the socket contact.
5. The configuration of the stud tip shall be optional provided it meets all requirements of this specification.
6. Metric equivalents are given for general information only.

FIGURE 1. Socket configuration – Continued

MIL-DTL-12883/44D



| Inches | mm |
|--------|-------|
| .05 | 1.3 |
| .093 | 2.36 |
| .097 | 2.46 |
| .112 | 2.84 |
| .164 | 4.17 |
| .250 | 6.35 |
| .412 | 10.46 |
| .500 | 12.70 |
| .825 | 20.96 |
| .880 | 22.35 |
| 1.075 | 27.31 |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are $\pm .005$ (0.13 mm) for three place decimals and $\pm .01$ (0.25 mm) for two place decimals.

FIGURE 2. Mounting (hardware and panel cutout).

MIL-DTL-12883/44D

REQUIREMENTS:

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

Insulator: Diallyl phthalate, in accordance with ASTM D5948, type SDG-F, or any glass filled thermoplastic material in accordance with ASTM D5204.

Color: Material color shall be optional providing that the color provides a contrasting background for the blue sealing grommet or blue color bands indicating rear release contacts.

Grommet: Silicon rubber.

Mounting hardware: Corrosion resistant steel or steel with cadmium/chromate finish.

Electrical

Test gauge: A mating relay in accordance with table I shall be used as a test gauge or mating connector.

Insulation resistance: 1,000 megohms minimum.

Dielectric withstanding voltage:

Sea level: Test voltage: 1,000 V rms.

High altitude, 80,000 feet (24,384 meters): Test voltage: 500 V rms.

Contact resistance: In accordance with MIL-C-39029/101 (see table I).

TABLE I. Dash numbers and configurations.

| Dash number/socket configuration | Contact size mating end wire barrel | | Number of contacts | Contact designation M39029/101 | Mating relay MIL-PRF-83536 <u>1/</u> | Polarization (see figure 1 detail A) |
|----------------------------------|-------------------------------------|----|--------------------|--------------------------------|---|--------------------------------------|
| -01 | 20 | 20 | 14 | -553 | /5-019, -022, -014, /6-003, -006, -011, -014, 019, -022, -029, -032 | None |
| -02 | 20 | 20 | 16 | -553 | /7-022 | I |
| -03 | 20 | 20 | 16 | -553 | TBA | II |
| -04 | 20 | 20 | 16 | -553 | TBA | III |

1/ Reference MIL-PRF-83536 for supersession data on MIL-PRF-6106 relays.

MIL-DTL-12883/44D

Environmental:

Temperature range:

Operating temperature range -70°C to ± 125 °C.

Wire sealing: A resilient socket grommet is permanently bonded to the wire entry face of the socket so as to provide moisture sealing capabilities, contact M39029/101-553 wire sealing range diameter .040 min to .083 max, (1.02 to 2.11 mm), for AWG size 20 wire (for coil contacts) and AWG size 20 wire (for load contacts).

Contacts: Contacts shall be in accordance with table I. Contacts shall be crimp removable type rear release and accept relay pins size 20 (.039 through .041 inch diameter (0.99 through 1.04 mm)).

Insertion and withdrawal force: The insertion and withdrawal forces shall be as specified in table II.

TABLE III. Insertion and withdrawal forces.

| Condition | | M12883/44 | |
|---|------------------------|----------------------|----------------------|
| | | -01 | -02 through -04 |
| Initial | Insertion force (max) | 16 lbf (71.2 newton) | 19 lbf (84.5) |
| | Withdrawal force (min) | .61 lbf (2.7 newton) | .70 lbf (3.1 newton) |
| After 10 insertions and withdrawals, before vibration | Insertion force (max) | 18 lbf (80.0 newton) | 22 lbf (97.7 newton) |
| | Withdrawal force (min) | .52 lbf (2.3 newton) | .60 lbf (2.7 newton) |
| After vibration | Insertion force (max) | 18 lbf (80.1 newton) | 22 lbf (97.9) |
| | Withdrawal force (min) | .52 lbf (2.3 newton) | .60 lbf (2.7 newton) |

Durability: Shall be in accordance with MIL-PRF-12883.

Vibration (sinusoidal): In accordance with MIL-STD-202, method 204, test condition G.

- a. Except that the frequency range shall be varied logarithmically between the limits of 10 and 3,000 Hz.
- b. Except that the procedure of method of 201 of MIL-STD-202, or an equivalent industry standard, may be applied during 10-55 Hz band of the vibration frequency range.

Vibration (random): In accordance with MIL-STD-1344, method 2005, test condition V, letter G, with a duration of 15 minutes. The mating relay shall be used as the test gage.

Shock (mechanical): In accordance with MIL-STD-202, method 213, condition C, except peak value shall be 200 g's.

Torque: Relay sockets and hardware shall be subjected to testing torque as specified in table III. Sockets shall be installed in mounting panel when test torque is applied. No physical damage will be permitted. Torque shall be maintained for a reasonable period of time to insure stud, socket, and associated hardware have not been damaged.

MIL-DTL-12883/44D

TABLE III. Torque requirements (installed in panel conditions).

| Thread size | Torque | | | |
|-------------|-------------|--------------|--------------|--------------|
| | Testing | | Installation | |
| | Inch-pounds | Newton-meter | Inch-pounds | Newton-meter |
| .112-40 | 8 | 0.90 | 4 ±1 | 0.45 ± .11 |
| | + 1 | + .11 | | |
| | -0 | -0 | | |
| .164-32 | 20 | 2.26 | 15 ±1 | 1.70 ± .11 |
| | +1 | + .11 | | |
| | -0 | -0 | | |

Socket, contact tools shall be in accordance with table IV.

TABLE IV. Contact tools.

| Nomenclature | Part or Identifying Number (PIN) |
|----------------------------|----------------------------------|
| Crimp tool | M22520/7-01 |
| Positioner | M22520/7-12 |
| Insertion and removal tool | M81969/16-01 |

Weight: The socket, hardware, and electrical contacts shall have a maximum weight of .055 pounds (25 grams).

Mounting hardware: The mounting hardware shall allow mounting the socket above, or below the panel or chassis (see figure 2), and shall allow mounting and securing the relay to the socket without disturbing the mounted socket or access to the wiring side of the socket. The hardware shall provide the nominal .197 inch (5.00 mm) spacing between socket surface and relay mounting flange, regardless of mounting configuration.

Mounting hardware shall be supplied with the relay socket and shall consist of the following:

Self locking nuts .112-40 (6 each) (.206 max dia x .176 max height).

Flat washers .112 (6 each) (.206 max O.D. x .021 max thickness).

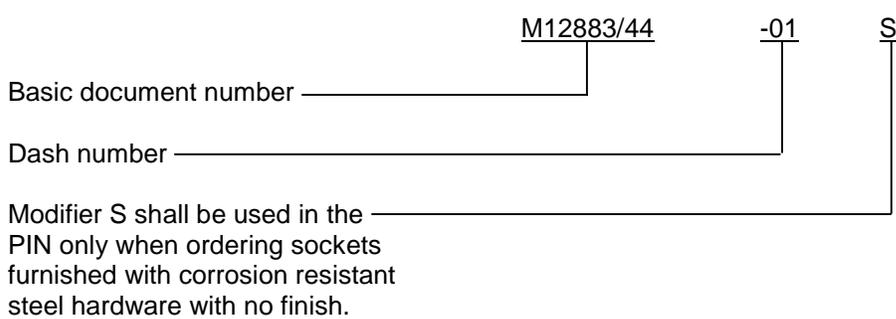
Self locking nuts .164-32 (3 each) (.290 max dia x .190 max height).

Flat washers .164 (3 each) (.290 max O.D. x .019 max thickness).

MIL-DTL-12883/44D

PIN: The PIN shall be marked on the socket body as shown in the example (see figure 1). The PIN shall consist of the basic number of this specification sheet and the dash number from table I.

Example:



* For future acquisition of these sockets as of the effective date of revision B, 20 December 1989, parts identified with an "S" modifier shall be corrosion resisting steel (CRS), and parts without an "S" modifier shall be cadmium chromate finish. No mixing of hardware types shall be permitted.

Ordering data: Sockets without contacts may be ordered when so indicated in the ordering data (see MIL-DTL-12883). This applies only to original equipment manufacturers (OEMs) and subcontractors. All direct shipments to the government shall include all applicable contacts and mounting hardware. The PIN to be marked on the socket shall be as shown in the PIN example (see figure 1 and table I).

Revision letters are not used to denote changes due to the extensiveness of the changes.

| Active Government PIN | Superseded manufacturer PIN | |
|-----------------------|-----------------------------|-------------|
| | CAGE 58982 | CAGE 99699 |
| M12883/44-01 | RSE120151 | SE405-1020 |
| M12883/44-02 | RSE120153 | SEL405-1021 |
| M12883/44-03 | RSE120155 | SEL405-1022 |
| M12883/44-04 | RSE120157 | SEL405-1023 |

MIL-DTL-12883/44D

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:
DLA - CC

(Project 5935-4344-09)

Review activities:

Army - AR, AT, AV, CR4
Navy - AS, MC, OS, SH
Air Force - 99