

INCH-POUND

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PERFORMANCE SPECIFICATION

SYSTEMS, ILLUMINATED, WARNING, CAUTION, AND ADVISORY, GENERAL SPECIFICATION FOR

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

1. SCOPE

1.1 Scope. This specification covers the general requirements for illuminated warning, caution, and advisory indicators and systems for use at aircrew stations.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are cited in sections 3 and 4 of this specification. These lists do not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of these lists, document users are cautioned that they must meet the requirements specified in the documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the applicable issues of these documents are those listed in the specific issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data that may be of use in improving this document should be addressed to: Resources & Logistics Services Division, SA-ALC/TILDD, 485 Quentin Roosevelt Rd., Kelly AFB, TX 78241-6425, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

SPECIFICATIONS

DEPARTMENT OF DEFENSE

- | | | |
|-------------|---|--|
| MIL-P-7788 | - | Panels, Information, Integrally Illuminated |
| MIL-M-18012 | - | Markings for Aircrew Station Displays
Design and Configuration of |

STANDARDS

DEPARTMENT OF DEFENSE

- | | | |
|-------------|---|--|
| MIL-STD-411 | - | Aircrew Station Signals |
| MIL-STD-461 | - | Electromagnetic Interference Characteristics
Requirements for Equipment |
| MIL-STD-462 | - | Electromagnetic Interference Characteristics,
Measurement of |
| MIL-STD-783 | - | Legends for Use in Aircrew Stations and on
Airborne Equipment |

(Unless otherwise indicated, copies of the above specifications and standards are available from the Defense Automated Printing Service, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following document forms a part of this document to the extent specified herein. Unless otherwise specified, the applicable issues of the documents which have been adopted by the DoD are those listed in the specific issue of the DoDISS cited in the solicitation. Unless otherwise specified, the documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

RADIO TECHNICAL COMMISSION FOR AERONAUTICS (RTCA)

- | | | |
|-------------|---|--|
| RTCA/DO-160 | - | Environmental Conditions and Test Procedures for
Airborne Equipment |
|-------------|---|--|

(Application for copies should be addressed to RTCA Inc., 1140 Connecticut Avenue, NW, Suite 1020, Washington, D.C. 20036-4001.)

AMERICAN SOCIETY FOR QUALITY (ASQ)

- | | | |
|---------------|---|--|
| ANSI/ASQ Z1.4 | - | Sampling Procedures And Tables For Inspection By
Attributes (DoD-adopted) |
|---------------|---|--|

(Application for copies should be addressed to the American Society for Quality Control, P.O. Box 3006, Milwaukee, WI 53201-3006 or the American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

3.2 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle cost.

3.3 Materials. All materials shall be suitably treated to resist corrosion due to electrolytic decomposition, fungus, salt spray, and any other atmospheric condition that may be encountered during operational use or storage.

3.3.1 Nonmagnetic materials. Nonmagnetic materials shall be used for all parts, except where magnetic materials are essential.

3.3.2 Toxic chemicals, hazardous substances, and ozone depleting chemicals (ODCs). The use of toxic chemicals, hazardous substances, or ODCs shall be avoided, whenever feasible.

3.4 Design. The design criteria, display, and presentation characteristics of the indicators and their corresponding systems shall be in accordance with MIL-STD-411. All components shall be readily accessible.

3.4.1 Indicator display.

3.4.1.1 Dimensions. The length of indicator displays shall not exceed 1.500 ± 0.015 inches. The minimum height of letters in the individual legends shall be as specified in MIL-M-18012. The legend marking shall be a minimum of 0.140 inch high unless more than one line is required in which case it shall be a minimum of 0.125 inch high.

3.4.1.2 Visibility and legibility. All legends shall be sharply defined and readable when viewed from within an operational environment. When illuminated, the visibility of all legends shall not be restricted by the periphery of the enclosure for the indicator display.

3.4.1.3 Lighting requirements.

3.4.1.3.1 High ambient lighting conditions. Legend visibility and legibility under high ambient lighting conditions shall be provided. Contrast between the lighted and unlighted portions of each indicator display, under high ambient lighting conditions, shall be at least 1.0 when energized at rated voltage (5V).

3.4.1.3.2 Reduced voltage. Reduced voltage, when the primary panel lighting is ON, shall be in accordance with MIL-STD-411 and this specification.

3.4.1.4 Mounting and interchangeability. Legend lights shall be mounted flush with the top surface of the panel whenever possible. To avoid possible obscuration by displays, the legend light may be raised to the level of the adjacent displays. If individual display indicators are used for the output of each of the readout circuits, they shall be interchangeable and the mounting shall be such that the displays may be changed from outside the assembly.

3.4.2 Master warning, master fire warning, and master caution light reset. Master warning, master fire warning, and master caution indicators shall incorporate push-to-reset light devices for extinguishing the light presentations. The load required to extinguish the push-to-reset light device shall be 2 ± 0.5 pounds.

3.4.3 Indicator system. If individual caution, warning, or advisory display indicators are functionally or categorically grouped in control panels, the following requirements shall apply.

3.4.3.1 Circuits. Only solid state circuits shall be used.

3.4.3.2 Label. The indicator display system, as exposed to the pilot, shall contain a PRESS TO TEST label and a WARNING, CAUTION, and ADVISORY SYSTEM label. The labels shall be prepared in accordance with an industrially accepted method (see 6.3.4).

3.4.3.3 Controls. The controls for the indicator system may be in either one or two sections. If in one section, the indicator displays shall be mounted on the visible portion of the case. The number of sections and size of the case shall be subject to the approval of the procuring activity (see 6.2).

3.4.3.3.1 Sealing. The case shall be filled and hermetically sealed. The label indicating the function of the panel (WARNING, CAUTION, or ADVISORY SYSTEM) shall not be within the hermetically sealed case. The case shall allow internal mechanisms to be removed, replaced, and the case refilled and resealed without the use of special tools or fixtures unless they are approved by the procuring activity (see 6.2).

3.4.3.3.2 Filling medium. The filling medium shall be of at least 98% purity, free of dust particles, and shall contain not more than 0.006 milligram of water vapor per liter (dewpoint – 65 °C at the filling pressure). The filling medium shall be 88% to 92% nitrogen and the remainder helium. The absolute pressure of the filling medium in the case shall be approximately 1 atmosphere.

3.4.4 Wiring. Internal wiring shall be color coded according to an industrially accepted method (see 6.3.1).

3.4.5 Test provisions. Provisions, such as test points, shall be made for testing all subsystem circuitry and indicator lamp circuitry.

3.4.5.1 Press-to-test control. All master warning, master fire warning, master caution, and advisory lights shall be activated when the press-to-test control is depressed. The indicator legends and warning lights shall be deactivated when the control is released. The master warning, master fire warning, and master caution lights must be reset.

3.5 Interface.

3.5.1 Light source. The indicator light source shall be replaceable without the use of special tools.

3.5.2 Finish. All nonfunctional portions of the system exposed to view from the cockpit shall be finished in lusterless gray or lusterless black (see 6.2 and 6.3.2).

3.5.3 Color and light diffusion. The color and light diffusion characteristics of components of an individual indicator shall be in accordance with MIL-STD-411.

3.5.3.1 Legend. The legend for components of an individual indicator display shall be in accordance with MIL-STD-783.

3.5.4 Control panel. The control panel for the grouped indicators shall be in accordance with MIL-P-7788, where applicable. Master warning, master fire warning, master caution, and summation (if used) lights that indicate the condition of an entire subsystem shall be set apart from the indicators which show the status of the subsystem components. The location of critical function indicators, if any, may be specified by the procuring activity (see 6.2).

3.6 Performance.

3.6.1 Expected life. The warning, caution, advisory, and press to test circuits shall have a life of 2,000 cycles and the master warning, master fire warning, and master caution circuits shall have a life of 40,000 cycles without overhaul or repair (except for indicator light source replacement).

3.6.2 Electromagnetic interference. The system shall meet the electromagnetic interference requirements of MIL-STD-461 as specified for class ID equipment.

3.6.3 Dielectric strength. The system shall withstand a potential, applied between the connector pins and the case, of 500V rms, commercial frequency, at sea level and 250V rms at 50,000 ft altitude pressure equivalent, without allowing current flow above 500 microamperes.

3.6.4 Structural integrity. There shall be no damage to the system electrical connector or the case when a force of 60 pounds is applied to the connector along each of the three mutually perpendicular axes of the case.

3.6.5 Power consumption. The maximum power consumption shall be as specified in the acquisition documents (see 6.2).

3.7 Signal source. Actuation of an indicator light shall be initiated by a circuit closing device (sensor) which shall not be considered a part of the system required to meet the tests specified herein.

3.8 Fastening hardware. Fastening hardware shall be self-locking or otherwise secured so it will not come loose in service.

3.9 Item identification and nameplate. Equipment, assemblies, and parts shall be marked for identification and each indicator system shall have a permanently attached metal nameplate with the following information:

Nomenclature
Applicable military specification
Design Activity, Cage Code
Manufacturer's I.D. (if different from design activity)
Contract or purchase order
Serial number (if assigned)

Additional requirements may be specified by the procuring activity (see 6.2).

3.10 Interchangeability. All parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable.

3.11 Environmental conditions. The warning, caution, and advisory system shall meet the requirements of this specification when exposed to the following environmental conditions:

- a. Temperatures ranging from -54 to +85 °C with rated voltage applied to the indicator.
- b. Vibration as described in RTCA/DO-160, Section 8, Figure 8-4, Curve Y.
- c. Shock impact of 15 g without causing malfunction of any part of the system except indicator light source.
- d. Relative humidity up to 95%.
- e. Fungus growth.

- f. Exposure to atmosphere containing salt-laden moisture.
- g. Exposure to sand and dust.
- h. Acceleration of 10 g applied in each of three mutually perpendicular directions.
- i. Altitudes ranging from sea level to 100,000 feet.
- j. Explosive atmosphere.
- k. Leakage (immersion).
- l. Solar radiation.

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.1.1 Requirements cross-reference matrix. Table I provides a cross-reference matrix of the section 3 requirements tested or verified in the paragraphs below.

TABLE I. Requirements cross-reference matrix.

REQUIREMENT	VERIFICATION	REQUIREMENT	VERIFICATION
3.2	4.5.1	3.4.5.1	4.5.1
3.3, 3.3.1, 3.3.2	4.5.1	3.5.1	4.5.1
3.4	4.5.1	3.5.2	4.5.1
3.4.1.1	4.5.1	3.5.3	4.5.1
3.4.1.2	4.5.1, 4.5.6.1	3.5.4	4.5.1
3.4.1.3.1	4.5.6.1	3.6.1	4.5.9
3.4.1.3.2	4.5.6.1	3.6.2	4.5.5
3.4.1.4	4.5.1	3.6.3	4.5.3
3.4.2	4.5.1	3.6.4	4.5.8
3.4.3.1	4.5.1	3.6.5	4.5.4
3.4.3.2	4.5.1	3.7	4.5.2
3.4.3.3	4.5.1	3.8	4.5.1
3.4.3.3.1	4.5.7.12	3.9	4.5.1
3.4.3.3.2	4.5.10	3.10	4.5.1
3.4.4	4.5.1	3.11	4.5.7 & all sub-paras.
3.4.5	4.5.2		

4.2 First article inspection. First article inspection shall consist of all examinations and tests described in 4.5. The test sequence is as shown in table II. Tests shall be conducted on two groups (A and B) as follows:

TABLE II. Testing sequence.

Test Paragraph	Group A	Group B
4.5.1	1	1
4.5.2	2	2
4.5.3		14
4.5.4	3	3
4.5.5		15
4.5.6	8	8
4.5.7.1	5	5
4.5.7.2	6	6
4.5.7.3	7	7
4.5.7.4		9
4.5.7.5		10
4.5.7.6		11
4.5.7.7		12
4.5.7.8		13
4.5.7.9	4	4
4.5.7.10		16
4.5.7.11		17
4.5.7.12		18
4.5.7.13		21
4.5.8		19
4.5.9		20

4.3 Conformance inspection. This inspection shall include the tests in 4.3.1 and 4.3.2.

4.3.1 Individual inspection. The system shall be subjected to the following tests. Unless otherwise specified in the test description, all visual observations of performance shall be made at a distance of approximately two feet.

- a. Examination of product (see 4.5.1)
- b. Input circuit response (see 4.5.2)

4.3.2 Sampling tests. Sampling shall be performed on two groups of systems, and shall include the tests indicated below. Sampling shall follow the guidance contained in ANSI/ASQ Z1.4 at an initial inspection level of normal.

4.3.2.1 Group A samples. Group A samples shall be subjected to the following tests. The mounting of light assemblies, controls, and electrical components shall simulate the mounting required for the finished system. If required by the procuring activity, the illumination test facility to be employed for illumination tests shall be approved prior to testing(see 6.2).

- a. Individual tests (see 4.3.1)
- b. Power consumption (see 4.5.4)
- c. Acceleration test (see 4.5.7.9)
- d. Low temperature test (see 4.5.7.1)
- e. High temperature test (see 4.5.7.2)
- f. Vibration test (see 4.5.7.3)
- g. Lighting (see 4.5.6)

4.3.2.2 Group B samples. Group B samples shall be selected and subjected to the following tests.

- a. Group A sample tests (see 4.3.2.1)
- b. Shock test (see 4.5.7.4)
- c. Humidity test (see 4.5.7.5)
- d. Fungus test (see 4.5.7.6)
- e. Salt fog test (see 4.5.7.7)
- f. Dust test (see 4.5.7.8)
- g. Dielectric test (see 4.5.3)
- h. Electromagnetic interference test (see 4.5.5)
- i. Altitude test (see 4.5.7.10)
- j. Explosive atmosphere test (see 4.5.7.11)
- k. Leakage (immersion) test (see 4.5.7.12)
- l. Structural test (see 4.5.8)
- m. Life test (see 4.5.9)
- n. Solar radiation (sunshine) test (control panel only) (see 4.5.7.13)

4.4 Test conditions. Unless otherwise specified in the test description, all inspections and tests shall be performed under the ambient conditions of pressure of 28 to 32 inches of mercury, temperature of 25 ± 5 °C, and a relative humidity of 80% or less. If conditions change during a test, appropriate corrections shall be applied. Unless otherwise indicated in the test methods, test sample temperature conditioning shall be at least one hour longer than that required to reach thermal equilibrium.

4.4.1 Test requirements when performing environmental tests. The test articles shall satisfy the visibility and legibility test (see 4.5.6.1) both before and after the required environmental tests (see 4.5.7).

4.5 Tests.

4.5.1 Examination. The system shall be inspected to determine compliance with the materials, design, interface, fastening hardware, identification, and interchangeability requirements as itemized in table I.

4.5.2 Input circuit response. Each input circuit shall be activated and the master warning, master fire warning, and master caution indicators and the indicator display shall light. The circuits shall be activated individually to determine that the master indicator light functions for each circuit.

4.5.3 Dielectric strength. A potential of 500V rms commercial frequency shall be applied between the connector pins and the case, at sea level pressure, for 60 seconds. The test shall be repeated except the potential shall be 250V rms at a pressure equivalent to 50,000 feet. Current flow shall not exceed 500 microamperes.

4.5.4 Power consumption. The system power consumption shall not exceed that specified in the procurement document, and shall be measured under the following conditions:

- a. All circuits activated at maximum rated voltage
- b. All circuits activated at dimmed voltage
- c. Only circuits activated at dimmed voltage

4.5.5 Electromagnetic interference test. The electromagnetic interference test shall be conducted in accordance with MIL-STD-462.

4.5.6 Lighting.

4.5.6.1 Visibility and legibility. Visibility (i.e., brightness) measurements shall be made with a Pritchard 1980A Photometer or equivalent. The brightness levels shall comply with MIL-STD-411 except the high brightness requirement shall be replaced with the following contrast requirement. When the indicators are energized with rated voltage (5V), and subjected to a diffused white (5000-6000 K) light environment of 10,000 fL measured at the indicator, the indicator shall exhibit a contrast of 1.0 or greater. Contrast shall be calculated according to the following equation:

$$C = (B2 - B1)/B1$$

Where C = contrast

B1 = average brightness of the unlighted portion

B2 = average brightness of the lighted portion.

Low brightness measurements shall be made in completely dark surroundings. All legends shall be sharply defined and readable when viewed from within the frustum of an imaginary cone, the sides of which make an angle of 60° with a perpendicular to the center of the display, and the plane of which has the same area as the aperture of the display enclosure.

4.5.7 Environmental testing. Environmental testing shall be planned and conducted using the guidance in RTCA/DO-160. At the conclusion of each test, and during the low temperature tests, the system shall operate satisfactorily. The test systems shall satisfy the visibility and legibility test before and after the environmental tests. Altitude, acceleration, and solar radiation testing shall be done in accordance with an industrially accepted test method (see 6.2).

4.5.7.1 Low temperature test. The system shall be subjected to a low temperature test in accordance with RTCA/DO-160 Section 4, Category A3, Ground Survival Low Temperature Curve, and temperature of -54 °C.

4.5.7.2 High temperature test. The system shall be subjected to a high temperature test in accordance with RTCA/DO-160 Section 4, Category A3, Ground Survival High Temperature Curve, except the maximum temperature shall be +85 °C.

4.5.7.3 Vibration test. The system shall be subjected to a vibration test in accordance RTCA/DO-160, Section 8, Standard Sinusoidal Vibration Test Procedure, Figure 8-4, Curve Y. Each circuit shall be operated under both dim and bright conditions during this test. There shall be no flickering of the lights, and all fastening hardware shall be secure.

4.5.7.4 Shock test. The system shall be subjected to a shock test in accordance with RTCA/DO-160, Section 7 at a peak of 15 g and nominal duration of 0.011 second.

4.5.7.5 Humidity test. The humidity test shall be conducted in accordance with RTCA/DO-160, Section 6, Category C.

4.5.7.6 Fungus resistance. The system shall be subjected to a fungus resistance test in accordance with RTCA/DO-160, Section 13, Category F.

4.5.7.7 Salt fog test. The system shall be subjected to a salt fog test in accordance with RTCA/DO-160, Section 14, Category S, 5% Salt Spray. The test duration shall be 48 hours.

4.5.7.8 Dust test. The system shall be subjected to a dust test in accordance with RTCA/DO-160, Section 12, Category D. Note: if 140-mesh silica flour is used, local environmental laws and criteria must be observed.

4.5.7.9 Acceleration test. Verification of the acceleration requirement shall be in accordance with an industrially acceptable test method (see 6.3.5). The system shall function properly when subjected to at least 10 g.

4.5.7.10 Altitude test. Verification of the altitude requirement shall be in accordance with an industrially acceptable test method (see 6.3.6). The system shall function properly when subjected to a maximum altitude of 100,000 feet.

4.5.7.11 Explosive atmosphere test. The system shall be subjected to an explosive atmosphere test in accordance with RTCA/DO-160, Section 9, Category A.

4.5.7.12 Leakage (immersion) test. The system shall be subjected to a leakage (immersion) test in accordance with RTCA/DO-160, Section 11, Category F.

4.5.7.13 Solar radiation (sunshine) test. Verification of the solar radiation requirement shall be in accordance with an industrially acceptable test method (see 6.3.3). Upon completion of this test, the control panel shall function properly and there shall be no fading or cracking of the legend or display.

4.5.8 Structure test. The system electrical connector shall be subjected to a force of 60 pounds applied along each of the three mutually perpendicular axes of the case while the indicator panel is being inserted into a stationary mount that simulates installation in the aircraft. Neither the electrical connector nor the case shall be damaged or deformed during the three separate applications of the force.

4.5.9 Life test. The life test shall consist of operation of each of the warning, caution, advisory, and press-to-test circuits for 2,000 cycles and operation of each master warning, master fire warning, and master caution circuit for 40,000 cycles. The test on the master circuits may be run in conjunction with the tests of individual circuits. A cycle shall consist of actuation of each individual circuit at which time the proper legend shall appear. Lamp failure has no effect on conduct of this test.

4.5.10 Filling medium. The system case shall be tested in a certified laboratory, approved by the procuring activity, to demonstrate compliance for the filling medium requirement.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department or Defense Agency automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. The system covered in this specification is intended for use on aircraft to warn or indicate one of the following through a master visual signal and an illuminated word message:

- a. Warning indication. Indicates the existence of a hazardous condition requiring immediate corrective action.
- b. Caution indication. Indicates to operator that an impending dangerous condition exists that requires attention but not necessarily immediate action.
- c. Advisory indication. Indicates safe or normal configuration, condition of performance, operation of essential equipment, or attracts attention and imparts information for routine action purposes.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Issue of the DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1 and 2.3).
- c. When first article is required (see 3.1).
- d. The requirement for the vendor to obtain approval of the number of sections and the size of the system case (see 3.4.3.3).
- e. The requirement for the vendor to obtain approval if special tools or fixtures are required for case maintenance (see 3.4.3.3.1).
- f. Whether the finish of the nonfunctional portions of the system exposed to view from the cockpit shall be lusterless gray or lusterless black (see 3.5.2).
- g. If critical function indicators are required, and the location of the critical function indicators, if any (see 3.5.4).
- h. Unique item identification requirements, if any (see 3.9).
- i. If approval of the illumination test facility is required (see 4.3.2.1).

- j. If identification of the industrially accepted test methods for altitude, acceleration, and solar radiation testing is required (see 4.5.7).
- k. Packaging requirements (see 5.1).
- l. Maximum power consumption requirement (3.6.5).

6.3 Suggested processes. Procedures discussed in the following paragraphs have proven successful in previous procurements of Warning, Caution, and Advisory Illuminated Systems.

6.3.1 Wiring. MIL-STD-681 has been satisfactorily used as a guide for color coding of internal wiring.

6.3.2 Finish. Color No. 36321, and Color No. 37038 of FED-STD-595 are accepted industry standards for the color of the nonfunctional portion of the system exposed to view from the aircraft cockpit.

6.3.3 Solar radiation tests. MIL-STD-810E, Method 505.3, Procedure II has been satisfactorily used in previous procurements to verify the solar radiation requirement.

6.3.4 Label. MIL-M-18012 has been satisfactorily used in previous procurements as a labeling guide. Color No. 37875, lusterless white, in FED-STD-595 is an accepted industry standard for the color of the labels.

6.3.5 Acceleration test. In previous procurements, MIL-STD-810E Method 513.2, procedure I, at 10 g has been satisfactorily used to verify the acceleration requirement.

6.3.6 Altitude test. MIL-STD-810E Method 500.3, Procedure I has been satisfactorily used in previous procurements to verify the altitude requirement.

6.4 Subject term (key word) listing.

hermetic seal
control panel
indicator display

6.5 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.

Custodians:
Air Force - 99

Preparing Activity:
Air Force - 82

(Project No. 6340-0016)

MIL-PRF-38039C

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL			
INSTRUCTIONS 1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given. 2. The submitter of this form must complete blocks 4, 5, 6, and 7. 3. The preparing activity must provide a reply within 30 days from receipt of the form. NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.			
I RECOMMEND A CHANGE:		1. DOCUMENT NUMBER MIL-PRF-38039C	2. DOCUMENT DATE (YYMMDD) 980511
3. DOCUMENT TITLE Systems, Illuminated, Warning, Caution, and Advisory, General Specification for			
4. NATURE OF CHANGE <i>(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)</i>			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME <i>(Last, First, Middle Initial)</i>		b. Organization	
c. ADDRESS <i>(Include zip code)</i>	d. TELEPHONE <i>(Include Area Code)</i> (1) Commercial (2) DSN <i>(if applicable)</i>		7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME SA-ALC/TILDD		b. TELEPHONE <i>(Include Area Code)</i> (1) Commercial (2) DSN 210-925-6314 945-6314	
c. ADDRESS <i>(Include Zip Code)</i> 485 Quentin Roosevelt Rd. Kelly AFB, Texas 78241-6425		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 DSN 289-2340	