

INCH POUND

MIL-S-7742D  
25 July 1991  
SUPERSEDING  
MIL-S-007742C  
29 July 1988  
MIL-S-7742B  
2 February 1968

MILITARY SPECIFICATION  
SCREW THREADS, STANDARD, OPTIMUM SELECTED SERIES:  
GENERAL SPECIFICATION FOR

Inactive for new design after 31 December 1991.  
For new design use MIL-S-8879.

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

1. SCOPE

1.1 Purpose. This specification covers the requirements for a selected series of standard Unified and Unified Miniature screw threads, classes 3A and 3B of FED-STD-H28/2 and FED-STD-H28/5 for general aerospace and similar high-tech application. The purpose of this specification is to:

- a. Relate verification requirements to the intended service application of the threaded product.
- b. Provide default verification requirements if not otherwise specified.
- c. Allow the use of methods of verification found in FED-STD-H28/20 and ANSI/ASME B1.3M.
- d. Encourage the use of new or more efficient methods of verification, such as on-line or statistical process controls.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: ASD/ENES, Wright-Patterson AFB OH 45433-6503 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

AREA THDS

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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### 1.2 Application

1.2.1 Reprocurements. This specification is to be used for reprocurement of threaded products used in designs released prior to the date of this specification.

1.2.2 New designs. For new designs the following applies:

- a. Use MIL-S-8879 for fatigue applications.
- b. Use FED-STD-H28/2 for general non-fatigue applications.
- c. Use FED-STD-H28/5 for thread sizes smaller than 0.060 inch.
- d. For class 2 threads, use the applicable section of FED-STD-H28.

## 2. APPLICABLE DOCUMENTS

### 2.1 Government documents

2.1.1 Specification and standards. The following specification and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation. (See 2.4.1)

## SPECIFICATION

### MILITARY

|            |  |
|------------|--|
| MIL-S-8879 | Screw Threads, Controlled Radius Root with Increased Minor Diameter, General Specification for |
|------------|--|

## STANDARDS

### FEDERAL

|                |  |
|----------------|--|
| FED-STD-H28/1  | Nomenclature, Definitions, and Letter Symbols for Screw Threads              |
| FED-STD-H28/2  | Unified Inch Screw Threads – UN and UNR Thread Forms                         |
| FED-STD-H28/5  | Unified Miniature Screw Threads  |
| FED-STD-H28/6  | Gages and Gaging for Unified Screw Threads                                   |
| FED-STD-H28/20 | Inspection Methods for Acceptability of UN, UNR, UNJ, M and MJ Screw Threads |

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2.2 Non-government publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. (See 2.4.2)

### AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

|                  |   |
|------------------|---|
| ANSI/ASME B1.2   | Gages and Gaging for Unified Inch Screw Threads   |
| ANSI/ASME B1.3M  | Screw Thread Gaging Systems for Dimensional Acceptability - Inch and Metric Screw Threads (UN, UNR, UNJ, M, MJ) |
| ANSI/ASME B1.7M  | Nomenclature, Definitions, and Letter Symbols for Screw Threads   |
| ANSI/ ASME B46.1 | Surface Texture (Surface Roughness, Waviness, and Lay)  |

2.3 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.

### 2.4 Sources of documents

2.4.1 Military specifications and standards. Copies of the referenced federal and military specifications and standards are available from the Standardization Document Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094. For specific acquisition functions, these documents should be obtained from the contracting activity or as directed by the contracting activity.

2.4.2 Sources for non-government publications. Copies of ANSI and ANSI/ASME documents may be purchased from the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.

## 3. REQUIREMENTS

3.1 Thread application categories. Thread application categories shall be determined and specified in either the thread designation, a general note, referenced document or the purchase order for the threaded product made in accordance with this specification. These application categories determine the level of inspection requirements. The application categories are "Safety Critical Threads" (6.2.9) and "Other Threads" (see 6.2.7). The results of Durability and Damage Tolerance Analyses (DADTA), Failure Modes Effects and Criticality Analyses (FMECA) and critical parts identification will provide the basis for determining the application category of these threads. See figure 1 for a typical selection process for determining the application category of a threaded

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product. "Safety Critical" designations shall be approved by the Military Engineering cognizant activity for the weapon system. In those cases where identification of an application category is not feasible, for example, replacement of bench stock, the application category shall be "Other Threads."

3.2 Thread series. The two series of threads recognized by this specification are standard unified and unified miniature. The two sizes of special threads in tables I and II are applicable by reference because of their extensive use in conduit and electrical connector fittings. Terms for characteristics of threads shall be as defined Section 6 herein and by FED-STD-H28/1 and ANSI/ASME B1.7M.

3.2.1 Standard unified series. The standard unified series of threads consists of two series with graded pitches (coarse and fine) and one series with constant pitches (12 threads per inch). Standard unified thread diameter-pitch combinations are listed in FED-STD-H28/2. The general requirements of this specification shall apply to such threads.

3.2.2 Unified miniature series. The unified miniature series of threads consists of one series with graded threads per inch. All threads are of the single start type. Miniature threads diameter-pitch combinations are listed in FED-STD-H28/5. The requirements of that specification shall apply.

3.3 Designations. The threads described herein shall be designated as follows. Reference to MIL-S-7742 shall be made in either the thread designation, a general note, or in a reference document.

3.3.1 Standard unified thread designations. Threads selected from the standard unified series shall be designated in the following manner indicating the nominal diameter, number of threads per inch, thread series symbol (that is, thread form and thread series), class of thread, external "A" or internal "B" thread symbol and application category:

### Example

#### External Thread:

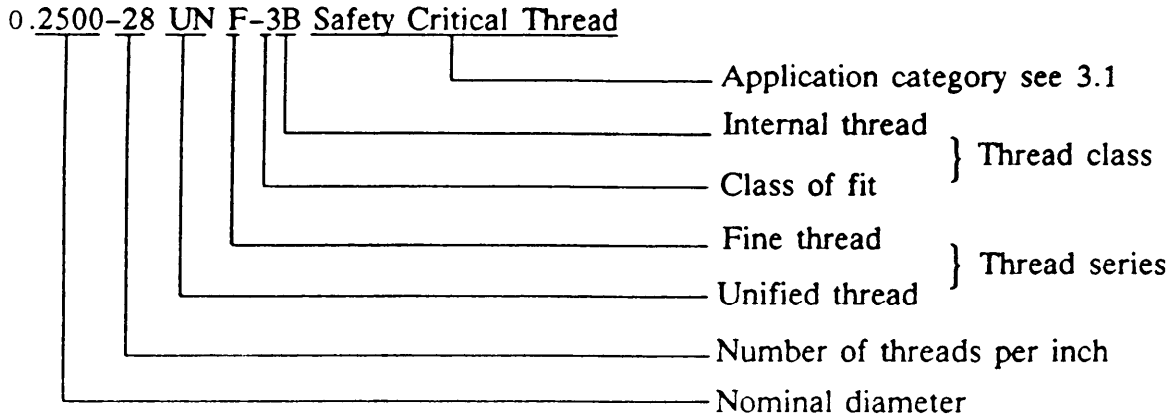
0.2500-28 UNF-3A Safety Critical Thread MIL-S-7742

1.7500-12 UN-3A Other Thread MIL-S-7742

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### Internal Thread:

0.2500-28 UNF-3B Safety Critical Thread MIL-S-7742



3.3.2 Miniature thread designation. The identifying letter “M” shall be included in the thread series symbol to indicate a miniature thread (see FED-STD-H28/5). Screw threads of this series shall be designated by their nominal diameters in millimeters followed by “UNM”, the inch equivalent of the basic major diameter in parentheses which is optional, the number of threads per inch, class of thread, and external or internal threads.

### 3.4 Thread characteristics

3.4.1 Basic thread data. The selection of basic thread data for all standard pitches of threads shall be in accordance with the sections on Standard Unified and Unified Miniature threads in FED-STD-H28/2 and FED-STD-H28/5 respectively; threads shall be within the limits of size specified in these standards. Characteristics shall include “GO” functional diameter size, pitch diameter size, major diameter size and minor diameter size.

3.4.2 Length of engagement and tolerances. The length of engagement for UNC, UNF and 8UN series threads upon which their specified tolerances are based is equal to the basic major diameter. These tolerances are applicable for lengths of engagement of these threads of 1.0 to 1.5 times the basic major diameter. The length of engagement for UNEF, 12UN and 16 UN series threads upon which their specified tolerances are based is equal to 9 pitches. These tolerances are applicable for lengths of engagement of these threads of 5 to 15 pitches. For miniature thread series, all tolerances governing limits of size are based on pitch only and apply to lengths of engagement from 0.67 to 1.5 times the nominal diameter.

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3.4.3 Variations. Screw threads, in accordance with this specification, shall conform with all dimensions and tolerances specified in FED-STD-H28/2, FED-STD-H28/5 and with the following requirements.

3.4.3.1 Pitch diameter. No portion of the complete thread shall be permitted to project beyond the envelope defined by the maximum-material limits on the one hand, or beyond that defined by the minimum-material limits on the other, and thus be outside of the tolerance zone specified.

3.4.3.2 Lead and flank angle. The lead shall be the number of thread starts divided by the number of threads per inch. The flank angle shall be 30 degrees. The diameter equivalent of variations in lead (including helix variations), or flank angle, shall not exceed 0.5 of the total pitch diameter tolerance for each element individually.

3.4.3.3 Circularity (roundness). Circularity is defined in ANSI Y14.5M. The product screw thread pitch diameter shall be circular within a tolerance zone of one half of the pitch diameter tolerance where pitch diameter tolerance is less than 0.004 inch. Where pitch diameter tolerance is 0.004 inch or larger, the tolerance zone is 0.002 inch. When circularity is checked using pitch diameter indicating gage segments or rolls, circularity tolerance is equal to one half the difference between maximum and minimum pitch diameter readings. Threads 1.5000 inches and larger with 16 threads per inch or less may exceed the tolerance by 0.002 inch over a maximum arc of 15 degrees, in the direction of minimum material in this area provided that this overcut does not result in raised material on the thread flanks or roots. The tolerance shall fall within the pitch diameter tolerance except above the 15 degree arc.

3.4.3.4 Taper. Taper of the pitch diameter based on the length of engagement in 3.4.2 shall be within 0.5 of the pitch diameter tolerance.

3.4.4 Incomplete threads. Unless otherwise specified, the runout threads on externally threaded parts shall be no less than one nor more than two pitches in length. The threads shall run out onto the shank, eliminating any abrupt change in cross sectional area.

3.4.4.1 Lead threads. Unless otherwise specified, the entering end of external threads and the entering end of internal threads may be outside the specified limits of size for a length not to exceed two pitches, including chamfer. In no case shall the lead threads exceed the maximum material limit of size specified in FED-STD-H28/2 and FED-STD-H28/5.



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3.4.5 Material limits for coated/plated external threads. When externally threaded parts are to be coated/plated the threads shall not be undercut more than 0.001 inch on all threads for which the pitch diameter tolerance specified herein does not exceed 0.0035 inch. For threaded parts for which the pitch diameter tolerance specified herein is greater than 0.0035 inch, the minimum pitch diameter may be reduced by an amount equal to 0.3 times the pitch diameter tolerance but not more than 0.0015 inch. Reduce the tabulated maximum pitch diameter by an amount equal to four times the maximum coating/plating thickness. Reduce the tabulated minimum pitch diameter, minimum major diameter, and minimum minor diameter by an amount equal to two times the minimum coating/plating thickness. Reduce the tabulated maximum major diameter and maximum minor diameter by an amount equal to two times the maximum coating/plating thickness. All thread elements shall be within tolerance, as modified above, before coating/plating and shall conform to the tabulated material limits for standard Unified threads after coating/plating.

3.4.5.1 Coating external threads with solid film lubricant. External threads to be coated with a solid film lubricant shall not have the minimum pitch diameter reduced by more than 0.001 inch. The decrease in minimum pitch diameter to accommodate solid film lubricant is not in addition to that specified in 3.4.5 if another coating is applied before the solid film lubricant. The solid film lubricant may be removed for gaging. The parts shall be recoated with solid film lubricant prior to restocking or usage.

3.4.6 Material limits for coated/plated internal threads. Unless otherwise specified, when internally threaded parts are to be coated/plated the threads may be overcut to allow for the coating/plating thickness. Unless otherwise specified on the drawing, the amount of overcut shall be as follows. Increase the tabulated minimum pitch diameter by an amount equal to four times the maximum coating/plating thickness. Increase the tabulated minimum major diameter and the minimum minor diameter by an amount equal to two times the maximum coating/plating thickness. Increase the tabulated maximum pitch diameter, maximum major diameter, and the maximum minor diameter by an amount equal to two times the minimum coating/plating thickness. All thread elements shall be within tolerance, as modified above, before coating/plating and shall conform to the tabulated material limits for standard Unified threads after coating.

3.4.6.1 Coating internal threads with solid film lubricant. Internal threads to be coated with a solid film lubricant shall not have the maximum pitch diameter increased by more than 0.001 inch. The increase in pitch diameter to accommodate solid film lubricant is not in addition to that specified in 3.4.6 if another coating is applied before the solid film lubricant. The solid film lubricant may be removed for gaging. The parts shall be recoated with solid film lubricant prior to restocking or usage.

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3.4.7 Material limits for coated/plated miniature threads. No allowance is provided between the limits of the external and internal threads of this series. Therefore, coating of threads is limited to electroplated or chemical treatment types and is limited to flash thickness. Where flash thickness is inadequate, the product should be made of corrosion-resistant material or the thickness of the coating included within the maximum material limits.

3.4.8 Runout. (See 6.2.8). The circular runout of the external thread major diameter cylinder and internal thread minor diameter cylinder with the pitch diameter cylinder shall not exceed twice the pitch diameter tolerance.

3.4.9 Surface roughness. Unless otherwise specified on the drawing, product specification, or specification sheet, the surface roughness of the thread flanks, roots and crests shall be no greater than 63 microinches  $R_a$  for external threads and 100 microinches  $R_a$  in accordance with ANSI/ASME B46.1.

## 4. VERIFICATION

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet the requirements of sections 3 and 5. The inspections set forth in this specification shall be a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the government for acceptance shall comply with all requirements of the contract. Sampling inspections, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements. However, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.



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4.2 Application category requirements verification. Drawings, product specifications and specification sheets applicable for the acquisition and use of screw threads shall be inspected/reviewed for accuracy and conformation of adherence to the requirements of 3.1. Verification requirements shall be selected as appropriate for the application category. If the verification requirements are not specified, the requirements of paragraph 4.4.2.1 shall apply.

4.3 Thread series and designations verifications. Drawings, product specifications, specification sheets applicable for the acquisition and use of screw threads shall be inspected/reviewed for accuracy and confirmation of adherence to the requirements of 3.2 and subparagraphs thereto regarding identification and call-out of the appropriate thread series and of 3.3 and subparagraphs thereto regarding identification and call-out of the appropriate thread designations.

4.4 Thread characteristics verification. Drawings, product specifications, and specification sheets applicable for the acquisition and use of screw threads as well as the threaded products themselves shall be inspected/reviewed for accuracy and confirmation of adherence to the requirements of 3.4 and subparagraphs thereto regarding thread characteristics. Unless otherwise specified in the drawing, product specification, or specification sheet, products having threads in accordance with this specification shall be inspected for dimensional conformance as stated herein.

4.4.1 Lot quantities. The quantities inspected for each lot shall be as specified for the application categories of 3.1, except as superseded by drawing, product specification, detail standard or specification sheet.

### Application Category

### Quantities

Safety Critical Thread

Nondestructive thread inspection of each piece part.

Destructive thread inspection of each lot by sampling as specified in the contract or purchase order.

Other Thread<sup>1/</sup>

Nondestructive thread inspection of each lot by sampling as specified in the contract or purchase order.

<sup>1/</sup> Includes threads for which the application category has not been specified or cannot be feasibly determined.

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4.4.2 Application category verifications inspections. Screw threads shall be inspected to ensure their ability to assemble with mating parts and shall be measured to ensure dimensional compliance with characteristics that are selected based on application category.

4.4.2.1 When characteristics are not specified on the drawing, product specification, or specification sheet, parts shall be inspected for the following characteristics based on application category:

| <u>Application Category</u> | <u>Inspection</u>  |
|-----------------------------|--|
| Safety Critical Thread      | "GO" functional diameter size <u>1/</u><br>Pitch diameter size <u>1/</u><br>Major diameter size (external threads only)<br>Minor diameter size (internal threads only)<br>Flank angle <u>1/</u><br>Lead (including helix variation) <u>1/</u><br>Circularity<br>Taper<br>Runout<br>Surface roughness |
| Other Thread <sup>3/</sup>  | "GO" functional diameter <u>2/</u><br>Pitch diameter size<br>Major diameter size (external threads only)<br>Minor diameter size (internal threads only) <u>2/</u>  |

1/ If the differential between "GO" functional size and pitch diameter size does not exceed 0.5 of the pitch diameter tolerance, inspection of flank angle and lead (including helix variations) is not necessary.

2/ For tapped holes with internal threads of nominal size less than 0.190 inches, only the functional diameter limit and the minor diameter limit inspections are to be performed.

3/ Includes threads for which the application category has not been specified or cannot be feasibly determined.

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NOTE: For product manufactured prior to March 1993, when the pitch diameter size or functional diameter inspections cannot be accomplished on the completed screw thread because of a configuration change to the threads, acceptance shall be based on performance requirements only. Product manufactured after March 1993, when the pitch diameter size or functional diameter inspections cannot be accomplished on a completed screw thread because of a configuration change to the threads, shall meet the requirements of 4.4.2.1.1.

4.4.2.1.1 When the pitch diameter size or functional size measurement cannot be accomplished on a completed screw threaded product because of a configuration change to the threads (e.g. deformation, slots, self locking devices), the screw threads shall be measured at the point of manufacture prior to the configuration change. The inspection shall be in accordance with the requirements based on the application category.

4.4.3 Methods of Inspection. All methods of measuring the characteristics of thread forms presented in FED-STD-H28/20, ANSI/ASME B1.3M, and new or more effective methods are acceptable so long as they can be demonstrated to show and assure conformance of the threads to the requirements of this specification and drawings, product specifications, or specification sheets supporting or derived from this specification. Gages shall meet the requirements of FED-STD-H28/6, ANSI/ASME B1.2 and FED-STD-H28/20; new or more effective methods are acceptable. Buyer approved on-line or statistical process controls may be used.

## 5. PACKAGING

5.1 Packaging. Each safety critical thread shall be protected during shipment and storage in accordance with the product specification. Other threads shall be protected as specified on drawing, product specification, or specification sheet.

## 6. INFORMATION FOR GUIDANCE ONLY

6.1 Clarifications. The following comments are intended to clarify subjects related to this specification and are not to be construed as screw thread requirements, per se.

6.1.1 Inspection methods. Inspection methods A, B and C have been eliminated. For new inspection criteria Safety Critical and Other application categories apply.

6.1.2 Calibration of gages. Gages used for demonstrating compliance should be calibrated in accordance with MIL-STD-45662 or FED-STD-H28/20.

6.1.3 Preferred selection. Due to limitations in the ability to verify some characteristics, internal threads of nominal size 0.190 inches and less should not be selected for safety critical applications.

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6.2 Definitions. For terms, symbols and data not defined or specified herein, see FED-STD-H28/1 and ANSI/ASME B1.7M.

6.2.1 Circularity (roundness). Circularity or roundness of threads is defined as one-half the variation in pitch diameter of a screw thread around the circumference of the pitch cylinder. This definition differs from that of circularity (roundness) in ANSI Y14.5M which pertains to radial variation. The following roundness terms are used in screw thread gaging practice:

a. Roundness, oval (2 point). One-half the difference between maximum and minimum pitch diameters over 180 degrees of the pitch cylinder circumference.

b. Roundness, multilobe (3 point). One-half the difference between maximum and minimum variations in the positions of one side of an equiangle triangle which envelopes the pitch cylinder and the theoretical positions of that side, as this enveloping triangle is rotated around the circumference of the pitch cylinder.

6.2.2 Coating. Coating is one or more applications of additive finish of any material including solid film lubricants, but not including soft or liquid lubricant.

6.2.3 Durability and damage tolerance analysis, (DADTA). An analysis performed to determine the growth of flaws, cracks, and other damage in the structure versus time.

6.2.4 Failure modes, effects and criticality analysis, (FMECA). An analysis performed to determine the various ways the structure or components of the system can fail and the effects of those failures on the capability of the system.

6.2.5 "GO" functional diameter size. The "GO" functional diameter size is the quantitative measurement of the functional diameter which is defined in ANSI/ASME B1.7M.

6.2.5.1 "NOT GO" functional diameter. The pitch diameter of an enveloping thread at the minimum material condition, with perfect form but reduced thread height, in accordance with the applicable gage standard.

6.2.6 Pitch diameter size. The pitch diameter size is the diameter of the cylinder (concentric with and parallel to the axis of the product) that passes through the thread profile of either a product's internal or external screw thread in such a manner as to make the width of the thread ridge and thread groove equal.

6.2.7 Other threads. An application in which thread failure is not safety critical. The designer specifies which characteristics are inspected and verified.

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6.2.8 Runout. As applied to screw threads, this term refers to circular runout of the major cylinder (for external threads) or the minor cylinder (for internal threads) with respect to the pitch cylinder. Circular runout, in accordance with ANSI Y14.5M, controls cumulative variations due to eccentricity and out-of-roundness. The amount of runout is usually expressed in terms of full indicator movement (FIM).

6.2.9 Safety critical threads. An application in which failure of the thread itself, for the purpose of this specification, would result in hazardous and unsafe conditions. The designer specifies which characteristics are inspected and verified.

6.2.10 Thread series. Thread series are groups of diameter and pitch combinations distinguished from each other by the number of threads per inch applied to specific diameters.

### 6.3 Key words

- Application requirements
- Screw threads
- Optimum selected series
- Standard unified screw threads
- Unified miniature screw threads
- Safety critical threads
- Other threads
- "GO" functional diameter
- Pitch diameter
- Major diameter
- Minor diameter
- Low stress application

6.4 Responsible engineering office. The responsible engineering office (REO) for development and technical maintenance of this specification is ASD/ENFSS, Wright-Patterson AFB OH 45433-6503. Requests for additional information or assistance on this specification can be obtained from W. Torrey, ASD/ENFSS, Wright-Patterson AFB OH 45433-6503, AUTOVON 785-5471, Commercial (513) 255-5471. Any information obtained relating to Government contracts must be obtained through contracting officers.

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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 extensiveness of the changes.

Custodians:

Army - AR

Navy - AS

Air Force - 11

Preparing activity:

Air Force - 11

Project No. THDS-0066

Reviewers:

Army - AV, MI

Navy - SH

DISC - IS

Users:

Army - AT, ME



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TABLE I. Symbol NS-2.

(Dimensions in Inches)

| Designation |               | Thread Limits of Size |                    |                    |                 |                    |             |               |        |                    |
|-------------|---------------|-----------------------|--------------------|--------------------|-----------------|--------------------|-------------|---------------|--------|--------------------|
| Size        | Thds Per Inch | Pitch Diameter        |                    |                    | Screw Diameters |                    |             | Nut Diameters |        |                    |
|             |               | Basic                 | Tolerance          |                    | Major           |                    | Minor (Max) | Major (Min)   | Minor  |                    |
|             |               |                       | Screw              | Nut                | Max             | Tol                |             |               | Min    | Tol                |
| 1 3/4       | 18            | 1.7139                | + .0000<br>- .0057 | + .0057<br>- .0000 | 1.7500          | + .0000<br>- .0082 | 1.6818      | 1.7500        | 1.6899 | + .0075<br>- .0000 |
| 2           | 18            | 1.9639                | + .0000<br>- .0059 | + .0059<br>- .0000 | 2.0000          | + .0000<br>- .0082 | 1.9318      | 2.0000        | 1.9399 | + .0075<br>- .0000 |

TABLE II. Symbol NS-3.

(Dimensions in Inches)

| Designation |               | Thread Limits of Size |                    |                    |                 |                    |             |               |        |                    |
|-------------|---------------|-----------------------|--------------------|--------------------|-----------------|--------------------|-------------|---------------|--------|--------------------|
| Size        | Thds Per Inch | Pitch Diameter        |                    |                    | Screw Diameters |                    |             | Nut Diameters |        |                    |
|             |               | Basic                 | Tolerance          |                    | Major           |                    | Minor (Max) | Major (Min)   | Minor  |                    |
|             |               |                       | Screw              | Nut                | Max             | Tol                |             |               | Min    | Tol                |
| 1 3/4       | 18            | 1.7139                | + .0000<br>- .0040 | + .0040<br>- .0000 | 1.7500          | + .0000<br>- .0082 | 1.6818      | 1.7500        | 1.6899 | + .0075<br>- .0000 |
| 2           | 18            | 1.9639                | + .0000<br>- .0041 | + .0041<br>- .0000 | 2.0000          | + .0000<br>- .0082 | 1.9318      | 2.0000        | 1.9399 | + .0075<br>- .0000 |

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# TYPICAL THREAD CLASSIFICATION LOGIC

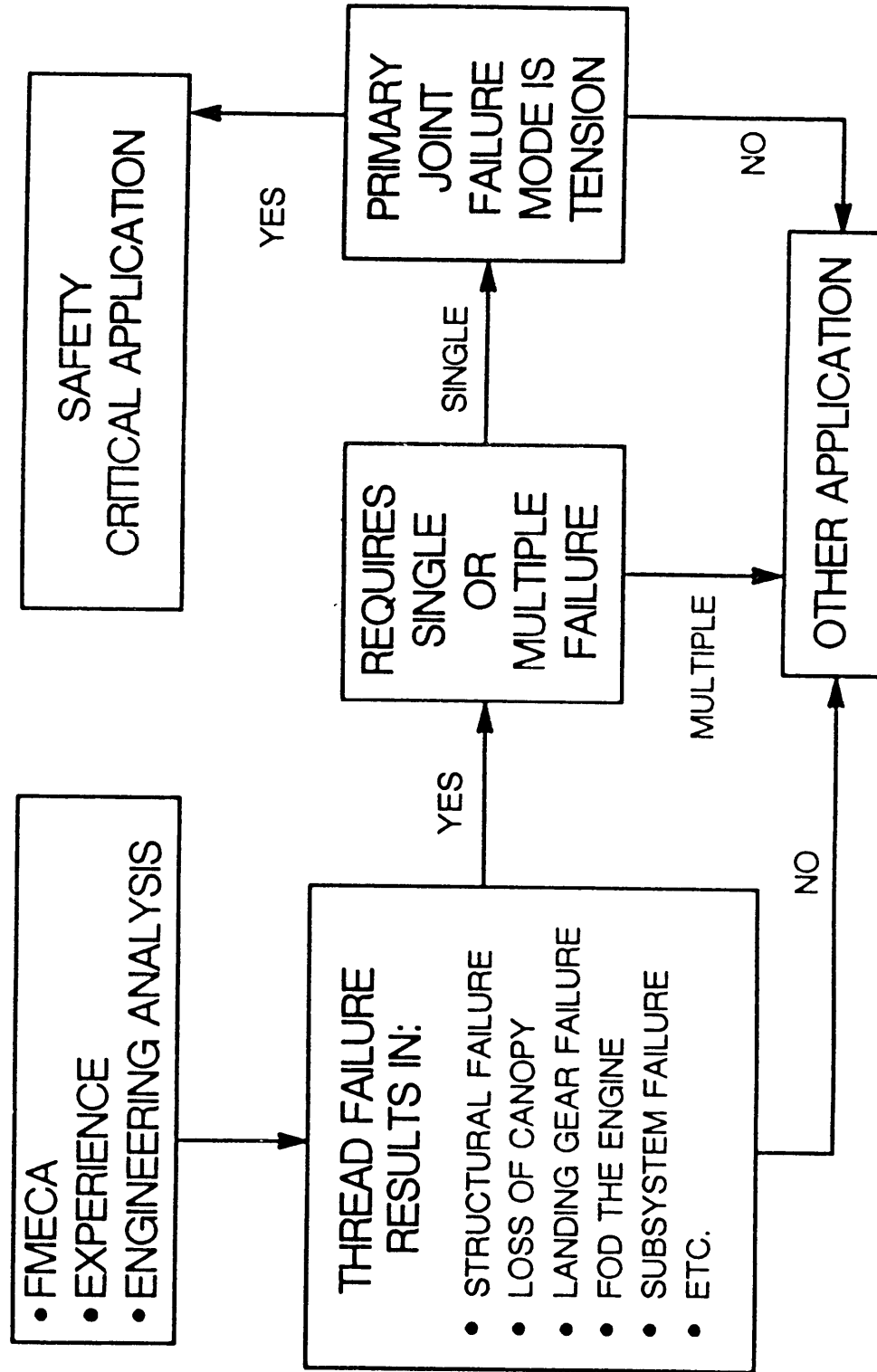


FIGURE 1. Typical thread classification logic.

# 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-S-7742D

2. DOCUMENT DATE (YYMMDD)  
910725

3. DOCUMENT TITLE Screw Threads, Standard, Optimum Selected Series,  
General Specification For

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)  
(1) Commercial

7. DATE SUBMITTED  
(YYMMDD)

(2) AUTOVON  
(If applicable)

8. PREPARING ACTIVITY

a. NAME

b. TELEPHONE (Include Area Code)  
(1) Commercial (2) AUTOVON

c. ADDRESS (Include Zip Code)

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) 7567-2340 AUTOVON 289-2340