NOTE: The document identifier and heading has been changed on this page to reflect that this is a performance specification. There are no other changes to this document. The document identifier on subsequent pages has not been changed, but will be changed the next time this document is revised.

MIL-PRF-9000H(SH)
16 September 1987
SUPERSEDING
MIL-L-9000G(SHIPS)
5 March 1970
(See 6.8)

PERFORMANCE SPECIFICATION

LUBRICATING OIL, SHIPBOARD INTERNAL COMBUSTION ENGINE, HIGH OUTPUT DIESEL

This specification is approved for use within the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers one grade of lubricating oil, Military Symbol 9250 (NATO Code O-278), for use in advanced design high-output shipboard main propulsion and auxiliary diesel engines using fuel conforming to MIL-F-16884.

2. APPLICABLE DOCUMENTS

2.1 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.

SPECIFICATION

FEDERAL

RR-S-366 - Sieve Test.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 5523, Department of the Navy, Washington, DC 20362-5101 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
FSC 9150

STANDARDS

FEDERAL

FED-STD-313 - Material Safety Data Sheets Preparation and the Submission of.

FED-STD-791 - Lubricants, Liquid Fuels, and Related Products; Methods of Testing.

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

MIL-STD-290 - Packaging of Petroleum and Related Products.

2.1.2 Other Government document. The following other Government document forms a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

Code of Federal Regulations (CFR)

29 CFR 1910.1200 - Hazard Communication Standard.

(The Code of Federal Regulations (CFR) and the Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for issuance thereof.)

(Copies of specifications, standards, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other 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. Unless otherwise specified, the issues of documents not listed in the DoDISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 92 - Standard Test Method for Flash and Fire Points by Cleveland Open Cup. (DoD adopted)

D 96 - Standard Test Methods for Water and Sediment in Crude Oils. (DoD adopted)

D 97 - Standard Test Method for Pour Point of Petroleum Oils. (DoD adopted)

D 129 - Standard Test Method for Sulfur in Petroleum Products (General Bomb Method). (DoD adopted)

D 287 - Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). (DoD adopted)

D 445 - Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (And the Calculation of Dynamic Viscosity). (DoD adopted)
D 808 - Standard Test Method for Chlorine in New and Used Petroleum Products (Bomb Method). (DoD adopted)
D 874 - Standard Test Method for Sulfated Ash from Lubricating Oils and Additives. (DoD adopted)
D 892 - Standard Test Method for Foaming Characteristics of Lubricating Oils. (DoD adopted)
D 1091 - Standard Test Methods for Phosphorus in Lubricating Oils and Additives. (DoD adopted)
D 1552 - Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method). (DoD adopted)
D 2270 - Standard Practice for Calculating Viscosity Index from Kinematic Viscosity at 40 and 100°C. (DoD adopted)
D 2896 - Standard Test Method for Base Number of Petroleum Products by Potentiometric Perchloric Acid Titration.
D 3228 - Standard Test Method for Total Nitrogen in Lubricating Oils and Fuel Oils by Modified Kjeldahl Method.
D 4057 - Standard Practice for Manual Sampling of Petroleum and Petroleum Products. (DoD adopted)
D 4628 - Standard Test Method for Analysis of Barium, Calcium, Magnesium, and Zinc in Unused Lubricating Oil by Atomic Absorption Spectrometry.
STP 509A - Single Cylinder Engine Test, Part I: Caterpillar 1 G2 Test Method.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Nongovernment standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. The lubricating oil furnished under this specification shall be a product which is authorized by the qualifying activity for listing on the applicable qualified products list at the time set for opening of bids (see 4.2 and 6.3).

3.2 Material. The oil shall be essentially a stable homogeneous blend of petroleum-base lubricating oil stocks plus additive agents as necessary to conform to this specification. The oil shall be of such material as to not require additional container labeling in accordance with 29 CFR 1910.1200.

3.3 Lubrication. The oil shall lubricate oil-lubricated high-output marine diesel engine parts, engine-driven generator bearings, and associated equipment.

3.4 Performance. The oil, even when contaminated with seawater, shall perform when used with all types of diesel engine bearing materials, shall cause neither excessive ring sticking nor clogging of oil channels, shall keep cylinder and ring wear down to a minimum, and shall not cause excessive lacquer, carbon, or sludge deposits on any part of the engines in which it is intended for use. Acceptable characteristics of the oil in this respect shall be demonstrated when the oil is tested as specified in 4.6.2.

3.4.1 Demerit limits assigned to the engine parts shall not exceed the following (see 4.6.2):

Engine cleanliness	Demerits
Ring sticking	0.0
Ring pinching	3.0
Piston skirt deposits	4.5
Cylinder liner deposits	2.5
Inlet air port restriction	6.0
Compression ring groove deposits	4.0
Piston land deposits	4.0
Area above top ring deposits	3.0
Cylinder head deposits	1.5
Valve deposit	3.0
Oil system sludge	3.0
Oil ring slots	0.5
Piston drain holes	0.5
Valve condition:	
Sluggish	2.0
Stuck	0.0

Engine wear and condition	Demerits
Scuffing above top ring	1.0
Seat and face condition	4.0
Valve guide and stem condition	3.0
Connecting rod bearing corrosion and wear:	
Copper-lead	20
Silver	20
Connecting rod bearing deposits:	
Copper-lead	8.0
Silver	8.0
Cylinder liner wear	4.0
Top compression ring wear	4.0

3.4.2 Rating engine parts shall conform to the following (see 4.6.2):

Engine cleanliness and wear

First groove carbon deposit (percent vol fill)	80 percent maximum
Weighted piston deposit, demerits	350 maximum
Piston skirt	Clean
Undercrown deposits	Report
Bearing weight loss, grams	0.9 maximum

3.5 Compatibility. The addition of a new diesel engine lubricating oil to any other new lubricating oil conforming to this specification shall not cause separation of components (see 4.6.3).

3.6 Homogeneity. Additive agents shall be uniformly distributed throughout the oil. The oil shall not exhibit sedimentation or separation of insoluble materials to an extent greater that 0.01 percent by volume (see 4.6.4.1).

3.7 Foaming. The oil shall conform to the following (see 4.7):

(a) Sequence 1. No maximum limit immediately following the 5-minute bubbling period, but a maximum limit of 300 milliliters (mL) after 10 minutes of foam collapse.
(b) Sequence 2. No maximum limit immediately following the 5-minute bubbling period, but a maximum limit of 25 mL after 10 minutes of foam collapse.
(c) Sequence 3. No maximum limit immediately following the 5-minute bubbling period, but a maximum limit of 300 mL after 10 minutes of foam collapse.

3.8 Chemical and physical requirements. The oil shall conform to the chemical and physical requirements shown in table I.

TABLE I. Chemical and physical requirements.

Characteristics	Requirements
Gravity, degree A.P.I.	Report[3/]
Sulfur	Report[3/]
Viscosity at 100 degrees Celsius (°C) (212 degrees Fahrenheit (°F)), centistokes	12.5 to 16.5
Viscosity index, minimum	90
Flash point, °C (°F), minimum	199 (390)
Pour point, °C (°F), maximum	-12 (10)
Ash, sulfated, percent	Report[3/]
Contamination, milligrams per gallon (mg/gal), maximum	10
Contamination, fibers per gallon, maximum	1

See footnotes at end of table.

TABLE I. Chemical and physical requirements. - Continued

Characteristics	Requirements
Zinc	1/ 2/
Phosphorus	1/
Barium	1/
Magnesium (ppm, max)	10
Nitrogen	1/
Calcium	1/
Chlorine (bomb)	1/
Total base number	Report 3/

1/ Identify quantitatively.
2/ The contractor shall certify that if zinc is present, it is present as zinc dialkyl dithiophosphate, as zinc diaryl dithiophos phate, or as a combination of the two.
3/ Values will be those established for the product at the time submitted for qualification.

3.9 Toxicity. The oil shall have no adverse effect on the health of personnel when used for its intended purpose. The oil shall contain no components which produce noxious vapors in such concentrations as to be an annoyance to personnel during formulation or normal use under conditions of adequate ventilation while exercising caution to avoid prolonged contact with the skin and while observing Occupational Safety and Health Administration (OSHA) guidelines. Questions pertaining to the toxic effects shall be referred by the contracting activity to the Naval Medical Command (NAVMEDCOM), Washington, DC, who will act as a medical advisor to the contracting activity.

3.9.1 Material safety data sheets. The contracting activity shall be provided a material safety data sheet (MSDS) at the time of contract award. The MSDS is Form OSHA-20 and found as part of FED-STD-313. The MSDS shall be provided in accordance with FED-STD-313 and 29 CFR 1910.1200. When FED-STD-313 is at variance with the CFR, 29 CFR 1910.1200 shall take precedence, modify and supplement FED-STD-313.

4. QUALITY ASSURANCE PROVISIONS

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 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become 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 assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Qualification tests. Qualification tests shall be conducted at a laboratory satisfactory to the Naval Sea Systems Command. Qualification tests shall consist of the tests in 4.6.

4.3 Sampling for quality conformance.

4.3.1 Lot. For purposes of sampling, a lot shall consist of all lubricating oil manufactured as one batch and offered for delivery at one time.

4.3.2 Sampling for examination of filled containers. A random sample of filled containers shall be selected from each lot in accordance with MIL-STD-105 at inspection level I and acceptable quality level (AQL) = 2.5 percent defective to verify compliance with all stipulations of this specification regarding fill, closure, marking, and other requirements not involving tests.

4.3.3 Sampling for tests.

4.3.3.1 Blending tank. A composite sample of not less than 5 gallons of oil shall be taken from each lot in accordance with the applicable procedure of ASTM D 4057.

4.4 Examination of filled containers. Each sample filled container selected in accordance with 4.3.2 shall be examined for defects of the container and the closure, for evidence of leakage, and for unsatisfactory markings. Each sample filled container shall also be weighed to determine the amount of the contents. Any container in the sample having one or more defects or under required fill shall be rejected. If the number of defective containers in any sample exceeds the acceptance number for the appropriate sampling plan of MIL-STD-105, the lot represented by the sample shall be rejected.

4.5 Quality conformance tests. Each sample selected as specified in 4.3.3.1 shall be tested as specified in 4.6.1 and 4.6.5. To insure that the material is essentially the same as that given qualification under this specification, the Government inspector will require that, in addition to conforming to this specification, the results of quality conformance tests listed below shall not vary from the analysis of the sample submitted for qualification to an extent greater than the tolerances shown. The analysis referred to is that which was obtained at the laboratory upon the sample that was evaluated for qualification under this specification.

Test	Tolerance
Gravity, degrees A.P.I.	± 1.0 degree
Ash, sulfated, percent	No minus[1/]
Flash point °F	± 25°F
Sulfur, percent	± 20 percent
Viscosity, kinematic centistokes at 100°C (212°F)	± 0.5 centistokes
Pour point °F	+ 5°

1/ Repeatability of the test method shall be considered.

4.5.1 Rejection of lots. When a sample of lubricating oil fails any of the tests, the entire lot represented by that sample shall be rejected.

4.6 Test procedures.

4.6.1 Tests. The following tests shall be conducted in accordance with the indicated ASTM test method:

Test	ASTM
Gravity	D 287
Viscosity (kinematic)	D 445
Viscosity index	D 2270
Flash point	D 92
Pour point	D 97
Foam test	D 892
Sulfated ash	D 874
Sulfur	D 129 or D 1552
Phosphorus	D 1091
Zinc, barium, calcium, and magnesium	D 4628
Chlorine	D 808
Nitrogen	D 3228
Total base number	D 2896

4.6.2 Engine tests. Engine tests shall be conducted and results evaluated to determine compliance with 3.4. These tests comprise the following, as specified:

GM-71 engine (method 339 of FED-STD-791)
Caterpillar 1-G-2 engine (ASTM STP 509A, Part 1, caterpillar 1-G2) amendment to disallow 120 hour oil drains.
Fuel for all engine tests shall be in accordance with ASTM STP 509A, Part 1, caterpillar 1-G2, except that the sulfur content shall be increased to 1.0 ± 0.5 percent with tertiary butyidisulfide.

4.6.3 Compatibility. Precipitation or separation of insoluble materials from mixtures of the test oil with representative approved Military Symbol (M.S.) 9250 oil shall be determined as follows:

(a) A 100-mL centrifuge tube shall be filled 50 percent with a sample of the oil under test and 50 percent with a representative M.S. 9250 lubricating oil.
(b) The tube containing the mixture of oils shall be placed in a vibrator machine and shaken for 15 minutes at room temperature.
(c) At the completion of the shaking period, the tube shall be placed in a DeLaval test tube centrifuge, model X-40-66 and centrifuged at 6000 revolutions per minute (r/min) for 30 minutes at 100 ± 10°F. Other centrifuges may be used provided the product of the relative centrifugal force at the tube tips and the time of centrifuging equals 300,000. Calculate the relative centrifugal force as specified in ASTM D 96.
(d) After centrifuging for 30 minutes, the tube containing the representative approved oil and the test oil shall be examined for precipitation of insoluble material and separation of components.

4.6.4 Homogeneity. Approximately 100 mL of the test oil, in a pour-point test jar, shall be cooled to minus 32°C (minus 25°F) and held at this temperature for 24 hours, then allowed to warm to room temperature. The test oil shall then be examined for separation of components.

4.6.4.1 Procedure. Two calibrated 100 mL centrifuge tubes shall be filled with 100 mL each of the test lubricating oil. These two samples shall then be centrifuged for 4 hours in a DeLaval 100 mL test tube centrifuge, at 6000 r/min and 38 ± 1°C (100 ± 2°F). Other centrifuges may be used, provided the product of the relative centrifugal force at the tube tips and the time of centrifuging equals 2,400,000.

4.6.5 Contamination. A 4-gallon representative sample shall be used for this test. A quantity of clear, unleaded gasoline or naphtha shall be filtered through the sieve to insure cleanliness. A 200-mesh sieve conforming to RR-S-366 shall be used, except that the sieve frame shall have a nominal 3 inch diameter. The sieve shall be dried at 100°C (212°F) and cooled in a desiccator and shall then be weighed to the nearest milligram. The entire oil sample (4 gallons) together with an equal amount of filtered naphtha or gasoline shall be mixed thoroughly at room temperature and filtered through the weighed sieve. After filtration of the oil, the oil container shall be thoroughly rinsed with clean naphtha or gasoline and the washings filtered through the same weighed sieve. The sieve shall then be thoroughly washed with filtered naphtha or gasoline and dried at 100°C (212°F) to remove the naphtha, or gasoline. The sieve shall again be cooled in a desiccator and weighed to the nearest milligram. The increase in weight of the sieve shall not exceed 40 milligrams (0.040 gram) and the presence of fibrous material in the residue shall be reported. A fiber shall be defined as a thread like structure with a maximum dimension exceeding six millimeters.

4.7 Foaming. The oil shall be tested in accordance with the foaming test specified in ASTM D 892.

4.8 Toxicity. To determine conformance to requirements of 3.9, the manufacturer of the material shall disclose the formulation of his product to the Naval Medical Command, MEDCOM-242, Washington, DC 20372. The disclosure of proprietary information, which shall be held in confidence by the Naval Medical Command, shall include: the name, formula, and approximate percentage by weight and volume of each ingredient in the product; the results of any toxicological testing of the product; identification of its pyrolsis products; and any such other information as may be needed to permit an accurate appraisal of any toxicity problem associated with the handling, storage, application, use, disposal, or combustion of the material. Information submitted shall be clearly marked or identified to show it is being provided in connection with qualification under MIL-L-9000.

4.9 Inspection of packaging. Sample packages and packs, and the inspection of the preservation-packaging, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified therein.

5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisition.)

5.1 Packaging and packing. Diesel engine lubricating oil shall be packaged and packed for the level specified (see 6.2) in accordance with MIL-STD-290. The type and size containers shall be as specified by the contracting activity (see 6.2). Materials used in the construction of the containers shall be such as will not affect or be affected by the contained diesel engine lubricating oil. Before filling, all containers shall be thoroughly cleaned and inspected to insure absolute absence of dirt, corrosion products, water, or other materials which would contaminate or interfere with the satisfactory performance of the oil. The standard package sizes are 1 quart, 1 gallon, 5 gallon and 55 gallon containers.

5.2 Marking of shipments. Shipping containers shall be marked in accordance with MIL-STD-290. The nomenclature shall be as follows:

> Lubricating Oil, Shipboard Internal Combustion Engine, High-Output Diesel, Military Symbol 9250 Specification MIL-L-9000, Manufacturer's Name, Batch Number, Test Reference Number, and Contractor's Order Number.

6. NOTES

6.1 Intended use. The lubricating oil covered by this specification is intended for use in advanced design high-output shipboard main propulsion and auxiliary diesel engines using fuel conforming to MIL-F-16884.

6.2 Ordering data. Acquisition documents should specify the following:

(a) Title, number, and date of this specification.
(b) Selection of the applicable level of packaging and packing required (see 5.1).
(c) The type and size of container required (see 5.1).
(d) Quantity in gallons. The material should be purchased by volume, the unit being a U.S. gallon at 15.6°C (60°F).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time set for opening of bids, qualified for inclusion in Qualified Products List QPL-9000 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362-5101 and information pertaining to qualification of products may be obtained from that activity. Application for qualification tests shall be made in accordance with "Provisions Governing Qualification SD-6" (see 6.3.1).

6.3.1 Copies of "Provisions Governing Qualification SD-6" may be obtained upon application to Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

6.3.2 Requests for tests of oil will be considered only under the conditions that the manufacturer submits the following information regarding composition of the oil proposed for qualification:

(a) Crude source, manufacturing process for each stock, types of base or blending stocks, and percentages used in the finished oil.
(b) Type of additive agents, typical chemical analysis, and percentages used in the finished oil.
(c) Typical analysis of the blending stocks, the base oil, and the finished oil, including percentage of metallic elements contributed by the additive.

6.3.3 Each sample of oil, rebrand or experimental, submitted for qualification shall be designated by the exhibitor by a different name, number, or letter to denote any changes in base oil components or the amounts or type of additive percent.

6.4 Supersession data. This specification includes the requirements of Military Symbol 9250 of MIL-L-9000F(SHIPS). Future acquisition of lubricating oil formerly covered by Military Symbol 9110 and Military Symbol 9500 of MIL-L-9000F(SHIPS) should be made under the applicable grade of MIL-L-2104. The requirements for Military Symbol 9170 of MIL-L-9000F(SHIPS) is not included due to limited usage.

6.5 International interest. Certain provisions of this specification are the subject of international standardization agreement NXA of STANAG 1135. When amendment, revision, or cancellation of this specification is proposed which will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels including departmental standardization offices to change the agreement or make other appropriate accommodations.

6.6 Material safety data sheets. Contracting officers will identify those activities requiring copies of completed Material Safety Data Sheets prepared in accordance with FED-STD-313. The pertinent Government mailing addresses for submission of data are listed in appendix B of FED-STD-313. In order to obtain the MSDS, Federal Acquisition Regulation (FAR) clause 52.223-3 must be in the contract.

6.6.1 A copy of the MSDS should be provided the Naval Sea Systems Command, Fuels, Lubricants and Chemistry Branch, Washington, DC.

6.7 Subject term (key word) listing.

Marine diesel engines
Petroleum-base
Qualification

6.8 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Preparing activity:
Navy - SH
(Project 9150-N801)

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge *(DO NOT STAPLE)*, and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification 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.

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
MIL-L-9000H(SH)	LUBRICATING OIL, SHIPBOARD INTERNAL COMBUSTION ENGINE, HIGH OUTPUT DIESEL

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)* ☐ VENDOR ☐ USER ☐ MANUFACTURER ☐ OTHER *(Specify)*:
b. ADDRESS *(Street, City, State, ZIP Code)*	

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

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