NOT MEASUREMENT SENSITIVE

MIL-STD-1911A
10 JULY 1998
SUPERSEDING
MIL-STD-1911
6 DECEMBER 1993

DEPARTMENT OF DEFENSE DESIGN CRITERIA STANDARD

HAND-EMPLACED ORDNANCE DESIGN, SAFETY CRITERIA FOR

AMSC N/A FSC 13GP

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

FOREWORD

1. This Military Standard is approved for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document shall be addressed to: Commander, US Army Tank-Automotive and Armaments Command Research and Development Center, ATTN: AMSTA-AR-QAW-E, Picatinny Arsenal NJ 07806-5000, by using the self-addressed Standardization Document Improvement proposal (DD Form 1426) appearing at the end of this document or by letter. Comments should be forwarded through the designated Reviewing Activity listed in 6.7.

3. This standard established the general design principles and specific design safety criteria applicable to hand-emplaced ordnance (HEO) throughout its life cycle. It addresses the unique attributes of hand-emplaced ordnance: safety of manual operations coupled with the need for very high functional reliability.

4. The requirements of MIL-STD-1316, "Fuze Design, Safety Criteria For," are applicable to ordnance that is NOT hand-emplaced. When feasible, HEO system and munition designers are encouraged to use ordnance designs whose safety systems conform to the requirements of MIL-STD-1316.

5. The tests of MIL-STD-331, "Fuze and Fuze Components, Environmental and Performance Test For," should prove useful in evaluating the design safety of hand-emplaced ordnance. The tests and test procedures of MIL-STD-2105, "Hazard Assessment Tests for Non-Nuclear Munitions," provide a framework for developing a program for hand-emplaced ordnance.

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1. SCOPE

1.1 Purpose. This standard established the general design principles and design safety criteria for hand-emplaced ordnance (HEO).

1.2 Application. This standard applies to the design of hand-emplaced ordnance.

1.3 Excluded munitions. This standard does not apply to the following:

a. Nuclear weapons systems and trainers.

b. Flares and signals dispensed by hand-held devices.

c. Pyrotechnic countermeasure devices.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards and handbooks. The following specification, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.3).

SPECIFICATIONS

MILITARY

MIL-T-339	-	Tetryl (trinitrophenylmenthylnitramine)
MIL-C-440	-	Compositions A3 and A4
MIL-E-14970	-	Explosive Composition A5
MIL-C-21723	-	Composition CH-6
MIL-I-23659	-	Initiator, Electric, General Design Specifications
MIL-P-46464	-	Pellet, Tetryl
MIL-R-63419	-	RDX/Vinyl Chloride Copolymer Explosive Composition (PBX- 9407) (For use in Ammunition)
MIL-E-81111	-	Explosive, Plastic-Bonded Molding Powder (PBXN-5)
MIL-E-82903	-	Explosives, HNS-IV

STANDARDS

FEDERAL

FED-STD-595	-	Colors Used in Government Procurement

MILITARY

MIL-STD-331	-	Fuze and Fuze Components, Environmental Performance Tests for
MIL-STD-461	-	Requirements for the Control of Electromagnetic Interference Emissions and Susceptibility

MIL-STD-462	-	Measurements of Electromagnetic Interference Characteristics
MIL-STD-464	-	Electromagnetic Environmental Effects Requirements for Systems
MIL-STD-1512	-	Electroexplosive Subsystems, Electrically Initiated, Design Requirements and Test Methods
MIL-STD-1751	-	Safety and Performance Tests for Qualification Of Explosives
MIL-STD-2169B(U)	-	High Altitude Electromagnetic Pulse (HEMP) Environment

(Unless otherwise indicated, copies of federal and military specifications, standards and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094).

2.1.2 Other Government documents, drawings and publications. The following other Government documents, drawings and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

NAVY WEAPON SPECIFICATIONS

WS-4660	-	Dipam Explosive
WS-5003	-	HNS Explosive
WS-12604	-	Explosive, Plastic-Bonded Molding Powder (PBXN-6)

OTHER PUBLICATIONS

OD 44811	-	Safety and Performance Tests for Qualification of Explosives

(Unless otherwise indicated, copies of Navy Weapon Specifications are available from Commander, Indian Head Division, Naval Surface Warfare Center, Data Control Team (Code 8410P), Indian Head, MD 20640-5035)

(Source for OD's is: Commander, Port Hueneme Division, Naval Surface Warfare Center, Code 6001E, Port Hueneme, CA 93043-4307)

2.2 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. DEFINITIONS

3.1 General. The definitions of OD 44811 apply to the terms for explosives. For interpretation of this standard, the specific definitions listed below apply.

3.2 Armed.

a. An HEO is considered armed when any firing stimulus can produce HEO function.

b. An HEO employing explosive train interruption (see 5.1.1.3) is considered armed when the interrupter (s) position is ineffective in preventing propagation of the explosive train with a probability equal to or exceeding 0.005 at a confidence level of 95 percent.

c. An HEO employing an non-interrupted explosive train (see 5.1.1.4) is considered armed when the stimulus available for delivery to the initiator equals or exceeds the initiator's maximum no-fire stimulus.

3.3 Arming delay. The time elapsed from the final commitment to the arming process until the armed condition is attained.

3.4 Booster and lead explosives. Booster and lead explosives are compounds or formulations, such as those explosives listed in Table I of 5.1.1.2, which are used to transmit and augment the detonation reaction.

3.5 Common mode failures. Multiple failures that result from the same cause, such as an adverse environment, or a seemingly unrelated failure. Examples of electrical common mode failures include the failure of two gates on a single digital integrated circuit due to loss of the ground lead to the chip, and failure of two transistors due to exposure to a high temperature environment.

3.6 Credible environment. An environment that a device may be exposed to during its life cycle (manufacturing to tactical employment, or eventual demilitarization). Credible environments include, but are not limited to electromagnetic effects, line voltages, extremes of temperature, humidity, vibration, shock and pressure. Combinations of environments that can be reasonably expected to occur must also be considered within the context of credible environments.

3.7 Credible failure mode. A failure mode that has a reasonable probability of occurring.

3.8 Deployment. The actions that are required to prepare and use hand emplaced ordnance.

3.9 Enabling. The act of removing or de-activating one or more safety features designed to prevent arming, thus permitting arming to occur subsequently.

3.10 Environment. A specific physical condition to which the ordnance may be exposed.

3.11 Explosive train. The detonation or deflagration train (i.e., transfer mechanism), beginning with the first explosive element (e.g., primer detonator) and terminating in the main charge (e.g., ordnance functional mechanism, high explosive, pyrotechnic compound).

3.12 Firing-control delay. The time elapsed from achievement of the armed condition to the time when controls on the delivery of a firing stimulus are removed.

3.13 Function. An HEO "functions" when its main charge produces an output.

3.14 Hand-emplaced ordnance (HEO). Ordnance that is manually emplaced at, or hand-thrown to, the point of intended function, and requires user action both to begin its operation and to achieve safe separation.

3.15 Independent safety feature. A safety feature is independent if its integrity is not affected by the function or malfunction of other safety features.

3.16 Initiator. A device capable of directly causing functioning of the explosive train.

3.17 Interrupted explosive train. An explosive train in which the explosive path between the primary explosives and the lead and booster (secondary) explosives is functionally separated until arming.

3.18 Maximum no-fire stimulus (MNFS). The stimulus level at which the initiator will not fire or unsafely degrade with a probability of 0.995 at a confidence level of 95 percent. Stimulus refers to the characteristic(s), such as current, rate of change of current (di/dt), power, voltage, or energy, which is (are) most critical in defining the no-fire performance of the initiator.

3.19 Primary explosives. Sensitive materials used in primers and detonators to initiate the explosive train. Primary explosives are sensitive to heat, impact and friction, and undergo a rapid reaction upon initiation.

3.20 Render safe. To preclude explosive functioning through the application of special interruption or separation techniques and tools.

3.21 Safe separation. A physical condition or state within the space between the HEO and friendly personnel and equipment that provides an acceptable level of risk from the hazards of the ordnance functioning.

3.22 Safety failure. A failure of the HEO to prevent unintentional arming or functioning.

3.23 Safety feature. An element or combination of elements that prevents unintentional arming or functioning.

3.24 Safety system. The aggregate of safety features and devices of the HEO and the procedures associated with its use that eliminate, control or mitigate hazards from the HEO throughout its life cycle.

3.25 Single-point failure. A safety system failure due to the inaction or incorrect action of any individual feature of the design.

3.26 Sterilization. A planned, programmed process that renders the HEO permanently incapable of activating energetic materials after specified events and time when the munition has served its useful purpose or is no longer capable of functioning as designed.

4. GENERAL REQUIREMENTS

4.1 General. The following general requirements apply to the design of Hand-Emplaced Ordnance (HEO) within the scope of this document.

4.1.1 Life cycle definition. In concert with the conceptual design of the HEO, a life cycle environmental profile shall be defined. The profile shall establish the environmental conditions and limits the HEO will encounter performing the threat hazard assessment.

4.1.2 HEO safety failure rate. The HEO safety failure rate shall be predicted for all phases of the HEO's life cycle. The safety failure rate shall be less than one in one million until international initiation of arming. The safety failure rate predicted by analysis shall be verified to the extent practical by test during evaluation. They failure rate for a specific HEO design to prevent unintentional functioning during and after arming shall be acceptable to the cognizant safety authority (see 6.5).

4.1.2.1 Analyses. The following analyses shall be conducted to identify hazardous conditions associated with the HEO. The analyses shall be done early enough in the development process to enable elimination or control of the identified hazards by the design of the HEO.

a. A preliminary hazard analysis to identify hazards of normal and abnormal environments, with special emphasis on conditions and personnel actions that may occur throughout the HEO life cycle. This analysis shall be used in the definition of the HEO design, test and evaluation requirements. (see 6.5)

b. System and major component hazard analyses to estimate the HEO safety failure rate and to identify any single point or credible failure modes. Techniques such as fault tree analysis and failure modes, effects and criticality analysis may be used in carrying out hazards analyses.

c. When the HEO contains a computing subsystem, an appropriate analysis shall be conducted to identify all safety-critical functions that are controlled by the computing subsystem. Computing subsystems that control safety-critical functions shall be analyzed in detail and tested for the purpose of verifying that no design weakness, software failure, or credible hardware failure propagating through the computing subsystem will compromise safety.

4.1.3 Safety redundancy. The safety system of HEO shall contain at least two independent safety features, each of which shall prevent unintentional arming. Enabling of each safety feature shall require a different action. Those actions must be performed in a specific sequence for arming to be permitted.

4.1.4 Arming or firing-control delay. HEOs shall incorporate a method for obtaining safe separation. An arming delay provides the highest level of safety and shall be used wherever feasible. If operational or functional requirements dictate and with prior approval of the cognizant safety authority, a fail safe firing-control delay may be used to obtain safe separation.

4.1.5 Fail-safe design. To the greatest extent feasible, the HEO shall incorporate design features that render the HEO incapable of attaining or maintaining an armed state and of functioning upon the failure, improper assembly, omission, or out-of-sequence operation of components.

4.1.6 Human factors engineering. HEO design shall emphasize human factors engineering to eliminate or control the hazards associated with manual operations.

4.1.6.1 Design simplicity. HEO design shall be as simple as possible to minimize operator error.

4.1.6.2 Design ruggedness. The design of the HEO shall be rugged enough to permit exposure of the HEO to the environments and handling stresses anticipated in its life cycle with no deterioration or degradation of its safety system.

4.1.6.3 HEO assembly and setting. The HEO shall be designed so that it cannot be assembled in the armed condition or in a condition that compromises the intended level of safety. If the state of the HEO is to be checked or set after assembly of the HEO, such checking or setting shall be positive and unambiguous, and shall not degrade safety.

4.1.6.4 Manually operated safety features. Manually operable safety features critical to system safety shall be designed to minimize inadvertent or unintended operation. Unless otherwise specified in the requirements document, operation of these features shall be reversible.

4.1.6.5 Operational status indicator. The HEO safety system shall provide the user a positive indication of its operational status, compatible with the intended environments where the HEO will be handled. The HEO safety system shall discriminate between safe and unsafe operational conditions and shall provide the user with clear warning consistent with the specific HEO design.

4.1.6.5.1 Non-armed and armed condition indicator. HEO shall provide a positive, unambiguous indication of the non-armed and armed conditions. Indicator failure shall not result in a false non-armed condition indication.

4.1.6.5.1.1 Visual indication. If visual indication of the non-armed or armed condition is employed in the HEO, visible indicators shall be designed to provide a positive, unambiguous indication of condition. If color coding is used to represent condition, the colors and coding shall be as follows:

a. Non-armed condition. Fluorescent green background with the letter S or word **SAFE** superimposed thereon in white. Colors shall be nonspecular.

b. Armed condition. Fluorescent red or fluorescent orange background with the letter A or the word **ARMED** superimposed thereon in black. Colors shall be nonspecular.

c. Suggested color specifications.

(1) Fluorescent green, Color No. 38901 per FED-STD-595.

(2) Fluorescent red, Color No. 38905 per FED-STD-595.

(3) Fluorescent orange, Color No. 38903 per FED-STD-595.

4.1.7 Design for quality control and inspection. HEO shall be designed and documented to facilitate application of effective quality control and inspection procedures. Design characteristics critical to safety shall be identified to assure that designed safety is maintained.

4.2 Design features.

4.2.1 Stored energy. The HEO shall not use stored energy for enabling or arming if sufficient energy can be derived from environments or levels of environmental stimuli present only during or after HEO deployment. If sufficient energy cannot be so derived, stored energy may be used with the following restrictions:

a. The stored energy component(s) is installed in the HEO as late as feasible in the HEO's manufacture-to-deployment logistic cycle, and

b. The design of the HEO prohibits release of the stored energy except as a result of user-enabled actions performed in a specific sequence.

Examples of stored energy are batteries, charged capacitors, compressed air devices, explosive actuators, and loaded springs.

4.2.2 Compatibility of materials. All materials shall be chosen to be compatible and stable so that under all life-cycle conditions none of the following shall occur in an unarmed HEO:

a. Premature arming.

b. Dangerous ejection of material.

c. Deflagration or detonation of the lead or booster.

d. An increase in the sensitivity of explosive train components beyond the level appropriate for service use.

e. Compromise of safety or sterilization features.

f. Production of unacceptable levels of toxic or other hazardous materials.

4.2.3 Electrical firing energy dissipation. For electrically initiated explosive trains, the design shall include a provision to dissipate the firing energy whenever an armed HEO is returned to the non-armed condition. The dissipation means shall be designed to prevent common-mode failures.

4.3 Documentation. An evaluation program plan shall be prepared to form the basis for a safety assessment. The program plan and results of the assessment shall be documented in both detail and summary form.

4.4 Electrical/electromagnetic environments. The HEO shall be designed such that, in its normal life cycle configurations, it shall not unintentionally arm, nor shall any explosive component unintentionally function, during or after exposure to: electromagnetic radiation (EMR), electrostatic discharge (ESD), electromagnetic pulse (EMP), electromagnetic interference (EMI), lightning effects (LE) or power supply transients (PST). The HEO shall be tested or evaluated for the following as applicable:

a. EMR - per MIL-STD-1512 and MIL-STD-464

b. ESD - per MIL-STD-331

c. EMP - per MIL-STD-2169

d. EMI - per MIL-STD-461 and MIL-STD-462

e. LE - per MIL-STD-464

f. PST - by appropriate test and analysis

4.5 Munition assessment. The HEO shall be designed to minimize the violence of a reaction and subsequent collateral damage when it is subjected to credible environments, such as temperature extremes, shock and vibration, or fragment or bullet impact.

4.6 Sterilization. If the HEO cannot be restored to its predeployed configuration, its design shall provide a sterilization capability. Self-destruction is an acceptable alternative to sterilization when the HEO has been properly armed.

4.7 Explosive ordnance disposal (EOD). Features shall be incorporated that facilitate HEOs being rendered safe by EOD tools, equipment and procedures, even if sterilization or self-destruction features are incorporated.

4.7.1 EOD review. All new or altered designs, or new applications of existing designs, shall be presented to the appropriate service's EOD research, development, test and evaluation (RDT&E) authority for technical advice and assistance in determining viable design approaches or trade-offs for EOD. (see 6.6)

4.8 Safety approval. During the HEO's concept development phase, the developing activity should obtain approval from the cognizant safety reviewing authority of the design concept, of the applicability of this document, and of the methodology for assuring compliance with safety requirements. At the completion of engineering and manufacturing development, the developing activity shall present a safety assessment to the cognizant safety reviewing authority. The purpose of such a presentation would be to obtain concurrence that the design of the HEO satisfactorily complies with this document and that the safety risks associated with the in-service use of the HEO are acceptable. All new or altered designs, or new applications of existing designs, shall be presented to the appropriate service safety review authority for a safety evaluation and certification of compliance with this standard. (see 6.4)

5. DETAILED REQUIREMENTS

5.1 General. The following detailed requirements shall apply for specific HEO designs.

5.1.1. Explosive materials and trains.

5.1.1.1 Explosive compositions. Explosive compositions shall be qualified for use in accordance with OD 44811 or MIL-STD-1751 in their intended roles in explosive train components.

5.1.1.2 Explosive sensitivity of lead and booster explosives.

a. Only those explosives listed in Table I are approved by all services for use in a position leading to the initiation of a position leading to the initiation of a high explosive main charge without interruption.

b. Approval by all services must be received by the Chairman, DOD Fuze Engineering Standardization Working Group (see 6.7) before a new explosive can be added to Table I or a listed explosive can be deleted. Approved explosives shall also be qualified in the HEO and approved by the associated safety boards of 6.4 as acceptable for that application.

c. The explosive material used in explosive trains shall not be altered by any means (precipitation, recrystallization, grinding, density changes, etc.) likely to increase its sensitivity beyond that at which the material was qualified and at which it is customarily used, unless it is requalified.

TABLE I. Approved explosives

Explosives	Specification
Comp A3	MIL-C-440
Comp A4	MIL-C-440
Comp A5	MIL-E-14970
Comp CH6	MIL-C-21723
PBX-9407	MIL-R-63419
PBXN-5	MIL-E-81111
PBXN-6	WS-12604
DIPAM	WS-4660
HNS Type I or Type 2 Gr A	WS-5003
HNS IV	MIL-E-82903
*Tetryl	MIL-T-339
*Tetryl Pellets	MIL-P-46464

*No longer manufactured; not for use in new developments.

5.1.1.3 Explosive train interruption.

a. When an element of the explosive train contains explosive material other than allowed by 5.1.1.2 (e.g., primary explosive), at least one interrupter (shutter, slider, rotor) shall functionally separate it from the lead and booster explosives until the intended arming delay is achieved. The interrupter(s) shall be directly locked mechanically in the non-armed position by at least two independent safety features. The safety features shall not be removed prior to intended initiation of the arming sequence.

b. If the primary explosive is positioned such that omission of the interrupter will allow explosive train transfer to the lead or booster, the design shall include positive means to prevent the HEO from being assembled without the properly positioned interrupter.

c. The effectiveness of interruption for the explosive train in its configuration prior to initiation of the arming sequence shall be determined numerically in accordance with the Primary Explosive Component Safety Test of MIL-STD-331. If the explosive train interruption is removed progressively after intentional initiation of the arming sequence, the relationship between position and its effectiveness shall be established by a progressive arming test conducted in accordance with the Primary Component Safety Test, using a test strategy given by the Projectile Fuze Arming Distance Test of MIL-STD-331. The chosen test strategy, including selection rationale, and results shall be presented to the appropriate service safety reviewing authority.

5.1.1.4 Explosive trains without interruption. When the explosive train contains only explosive materials allowed by 5.1.1.2, no explosive train interruption is required. For non-interrupted explosive train designs, at least two independent energy interrupters, each controlled by an independent safety feature, shall prevent stimulus, equal to or in excess of the initiator's maximum no-fire stimulus (MNFS), from reaching the initiator until the required arming delay is completed. The design of the HEO shall preclude arming if any energy interrupter malfunctions or is absent.

5.1.1.4.1 Electrical initiator sensitivity. The initiator for an electrically fired non-interrupted explosive train shall

a. Meet the appropriate characteristics listed for Class B initiators of MIL-I-23659.

b. Not exhibit unsafe degradation when tested in accordance with MIL-STD-1512.

c. Not be capable of being detonated by any electrical potential of less than 500 volts.

d. Not be capable of being initiated by any electrical potential of less than 500 volts, when applied to any accessible part of the HEO after final assembly.

6. NOTES

This section contains information of a general or explanatory nature that may be helpful but is not mandatory.

6.1. Intended use. This standard is intended for use by designers and developers of hand-emplaced ordnance and provides criteria by which the safety of such ordnance may be assessed.

6.2 Additional criteria. Individual services and service components may issue regulations or instructions which impose additional design safety criteria or add clarifying guidelines (e.g., MIL-STD-1316, Fuze Design, Safety Criteria for; U.S. Army Fuze Safety Review Board Guidelines for Evaluation of Electronic Safety & Arming Systems; U.S. Navy Weapon System Explosives Safety Review Board Technical Manual for Electronic Safety and Arming Devices with Non-Interrupted Explosive Trains; NAVSEAINST 8010.5 –Insensitive Munitions Program Planning and Execution; NAVSEAINST 8020-3 – Use of Lead Azide in Explosive Component Design; NAVSEANOTE 9310.1 –Naval Lithium Battery Safety Program.

6.3 Issue of DODISS. When this standard is used in acquisition, the applicable issue of the DODISS must be cited in the solicitation (see 2.1.1.).

6.4. Safety reviewing authorities. The cognizant safety reviewing authorities for the different services are:

a. Army:	Chairman, Army Fuze Safety Review Board ATTN: AMSTA-AR-FZ Picatinny Arsenal NJ 07806-5000
b. Navy and Marine Corps:	Chairman, Weapon System Explosives Safety Review Board (WSESRB) Naval Ordnance Center (N71) Indian Head, MD 20640-5035
c. Air Force:	USAF Nonnuclear Munitions Safety Board ATTN: AFDTC/SES 1001 2nd Street, Suite 366 Eglin Air Force Base FL 32542-6817

6.5 Hazard analyses. Techniques for conducting hazard analyses are described in NAVSEA OD44942, AFSC Design Handbook DH 1-6, Nuc Reg 0492, and MIL-STD-882.

6.6. EOD reviewing authorities.

a. For Army:
Commander
U.S. Army ARDEC
ATTN: AMSTA-AR-FSX
Picatinny Arsenal NJ 07806-5000

b. For Navy and Marine Corps:
Commanding Officer
Naval Explosive Ordnance
Disposal Technology Division
Code 60
2008 Stump Neck Road
Indian Head MD 20640-5070

c. For Air Force:
Commanding Officer
ATTN: Detachment 63, ASC
2008 Stump Neck Road
Indian Head MD 20640-5070

6.7 Custodian of service-approvals for lead and booster explosives.

Chairman
DOD Fuze Engineering Standardization Working Group
U.S. Army Armament Research, Development and Engineering Center
ATTN: AMSTA-AR-CCF-D
Picatinny Arsenal NJ 07806-5000

6.8 Subject term (key word) listing.

Arming
Arming delay
Explosive train
Explosive train interruption
Hand-emplaced ordnance
Manual arming
Non-interrupted explosive train
Safe separation
Safety design requirements
Sterilization

6.9 International Standardization Agreements. Certain provisions of this standard are the subject of International Standardization Agreements (such as STANAG 4187, Fuzing Systems, Safety Design Requirements). When change notice, revision or cancellation of this document is proposed which affect or violate the international agreement concerned, the

preparing activity will take appropriate reconciliation action through international standardization channels, including departmental standardization offices, if required.

6.10 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-OS
Air Force-11

Preparing activity:

Army-AR

Review activities:

Army-MI
Navy-AS
Air Force-99

(Project 13GP-0065)

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 documents(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER **MIL-STD-1911A**	2. DOCUMENT DATE (YYMMDD)

3. DOCUMENT TITLE

HAND-EMPLACED ORDNANCE DESIGN, SAFETY CRITERIA 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 (2) AUTOVON (*if applicable)*	7. DATE SUBMITTED (*YYMMDD)*

8. PREPARING ACTIVITY

a. NAME	b. TELEPHONE (*Include Area Code)*
U. S. Army, TACOM-ARDEC	(1) Commercial **(973) 724-6671** (2) AUTOVON **880-6671**
c. ADDRESS (*Include Zip Code)* **ATTN: AMSTA-AR-QAW-E, B-12** **Picatinny Arsenal, NJ 07806-5000**	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 AUTOVON 289-2340