



# DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND  
WASHINGTON, DC 20362-5101

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## NAVSEA INSTRUCTION 8510.9

From: Commander, Naval Sea Systems Command  
To: Deputy Commander for Weapons and Combat Systems  
Deputy Commander for Contracts  
Distribution List

Subj: POLICY, PROCEDURES AND RESPONSIBILITIES FOR TORPEDO SYSTEM PRODUCTION  
ACCEPTANCE TESTING

Ref: (a) Federal Acquisition Regulations, Part 46, Acquisition Quality Assurance  
(b) SECNAVINST 4855.1 of 10 September 1979; Subj: Quality Assurance Program  
(c) OPNAVINST 3960.10B of 3 November 1983; Subj: Test and Evaluation  
(d) NAVMATINST 3000.1A of 22 April 1977; Subj: Reliability of Naval Material  
(e) NAVSEA OD58877 Torpedo Proof Acceptance Test Procedures dated 31 May 1985

Encl: (1) Definitions  
(2) Model Quality and Performance Incentive Clauses

1. Purpose. To promulgate policy, procedures and responsibilities for torpedo system production acceptance testing in order to implement effectively references (a) through (d), and to define the purpose and objectives of in-water end item testing, commonly called proofing, within the overall production acceptance testing framework.

2. Scope and Applicability. This instruction applies to torpedo system material, whether complete end items, main assemblies, groups, sections, components, accessories, or major modification kits, that are newly manufactured, newly refurbished or modified, including foreign military sales torpedo material. Included in this scope is the specification of technical production acceptance testing requirements for torpedo system acquisitions under the cognizance of other Navy components. Reference (e) is germane.

3. Definitions. Definitions pertaining to this instruction at enclosure (1).

### 4. Policy

a. The objective of production acceptance testing of torpedo systems material is to assure with a high confidence level that the end item meets all service performance requirements including quality, reliability, maintainability and supportability.

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b. It is policy that the producer be held responsible for producing a high quality product. Wherever possible incentive provisions shall be included in torpedo production contracts which reward high quality and penalize lower quality. Model incentive clauses are at enclosure (2).

c. Each torpedo weapon system manager shall establish and maintain a planned, systematic, and integrated production acceptance test program for all elements of the weapon system. The production acceptance test program shall include piece part and component testing, subassembly and assembly acceptance testing, environmental stress screening testing, periodic sample environmental testing, group and system tests, Factory Acceptance Testing, Functional Item Replacement, group and system testing, and integrated end-item testing (proofing).

(1) The production acceptance test plan shall be established early and shall be part of the Integrated Test Program.

(2) Production acceptance testing shall be structured from an integrated viewpoint with each test specifically contributing to an objective evaluation of product quality.

(3) All tests specified shall be documented as weapons specifications and for new development programs shall be prepared, reviewed and validated initially during full scale engineering development and included as part of the design disclosure documentation.

(4) Production acceptance testing requirements, values, procedures, equipment and sequences, shall be consistent with each other, end item performance requirements, in-service maintenance philosophy and weapon design. Acceptance test requirements must be validated before they are contractually invoked.

(5) Product quality incentive testing shall be an integral part of the production acceptance test program when quality incentive is contractually specified.

5. Factory Acceptance Testing. Factory acceptance testing shall be specified for all torpedo systems material. The planning shall be an integral part of the production acceptance test plan.

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a. Factory final assembly acceptance tests for torpedo assemblies below the lowest level specified for fleet maintenance testing shall be designed so that the item can be tested and accepted independently of other assemblies, or of special tooling, special test equipment and gages. For assemblies at or higher than the lowest level of fleet maintenance testing, a replication of the appropriate fleet test shall be included as part of FAT, using either provided equipment and computer programs or commonly available commercial test equipment. In those cases where the fleet test portion is specified using commercial test equipment, the correlation of the factory test with the corresponding fleet test must be established, parameter for parameter, test point for test point, value for value, before the test is contractually specified. In all cases where there is a factory fleet test, an opening tolerance funnel (fleet test acceptance value tolerances shall be equal to or wider than those at the factory) shall be specified.

b. Factory acceptance of an item may be conditional on a sample of the lot containing the item passing a supplemental test series, such as periodic destructive environmental testing.

c. Factory acceptance of an item may be conditional on the complete lot representing the item attaining a specified quality level in an in-line test series.

d. Where the torpedo material being accepted is an end-item which is to receive final acceptance only after an in-water (proof) test series, the following shall apply:

(1) Factory final assembly acceptance test Acceptable Quality Level consistent with system quality requirements and good manufacturing practices shall be specified.

(2) The material shall be lotted at the production plant, and shall not be accepted until a specified lot success rate is demonstrated.

(3) Payment upon factory acceptance shall be limited to a specified percentage of target price (nominally 85%) pending successful completion of proof testing.

6. Proofing. End-item testing (proofing) for final acceptance of newly manufactured or modified torpedoes and complex critical sections (such as the warhead) shall be an integral part of production acceptance testing of these weapons. Proofing, including associated pre- and post-range shop testing shall conform to the guidelines and procedures of reference (e). Proof testing shall proceed by phases from 100 percent to sampling based on demonstrated product quality. Planning for proof testing of torpedoes shall conform to the following:

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a. Where safety and other technical limitations preclude in-water sampling at the same rate as for main assemblies, as is the case with warhead components, factory testing must be appropriately enhanced to provide the same assurance of product quality and performance as for other weapon components. In any case some level of in-water sample testing for contractual lot acceptance shall be required.

b. Major modification kits shall be in-water sample tested for final contractual acceptance using the same general procedures as for complete torpedoes or main assemblies. Due consideration must be given to the provision of new or refurbished material associated with the modification, and its effect on the performance of the modification kit being tested.

c. Major refurbishment of torpedo material by a munitions depot, including that accomplished in conjunction with a major modification program where a contractor is manufacturing modification kits, should undergo in-water sample product quality verification testing with provisions similar to those applicable to production acceptance proof testing, including lot acceptance, rejection of defective equipment, failure analysis and corrective action.

d. Each torpedo production program shall prepare and validate a proof acceptance specification which shall become part of the technical documentation specified in the contract. The proof acceptance specification for new programs shall be prepared, reviewed and validated as part of the design disclosure documentation during the FSED. Normally a separate proof acceptance specification shall be required for each major modification of the torpedo.

e. Proofing specifications and associated contracts shall include:

(1) Provision for sampling consistent with system complexity, production rate, product homogeneity, and quality. The applicable proofing specification shall spell out in detail the procedures, AQL's, sample sizes, and progress criteria for each phase.

(2) Milestones in terms of years or percentages of production for achieving the various sampling phases, with review by the Assistant Deputy Commander for ASW and Undersea Warfare Systems (SEA 06U and by SEA 06C) required upon failure to achieve milestones.

(3) Proofing test series AQL consistent with system reliability requirements.

(4) Performance incentives based on success in proofing test series.

(5) Provision for withholding of payment for other incentives (for cost, schedule or quality) if minimum performance levels in the proofing test series are not achieved.

(6) Selection of lot sizes, sample sizes and acceptance numbers, for in-water testing with due regard to program scope and technical requirements, including quality and statistical validity of results.

(7) Provision for a qualification phase in which the requirements of the proof acceptance specification are verified in a series of in-water test firings.

7. Failure Analysis and Corrective Action. The burden for delivering a quality product should be clearly placed on the producer. Defective equipment shall be returned to the producer for failure analysis and repair with the cost of such actions to be borne by him. If lot acceptance is held up because of failure of the tested sample to meet testing requirements, the producer must submit and receive approval of a corrective action plan for the subject lot and any other lots affected by a systematic defect. Progress payments, final acceptance payments or incentive fee payments may be withheld, pending satisfactory completion of failure analysis and corrective action. Producers shall be required to establish and maintain efficient programs for failure analysis and corrective action data collection, reporting and tracking which are compatible with U.S. Navy data systems. Defective torpedo equipment returned to a producer after test shall be physically removed to the producer's facilities for corrective action or repair unless specifically exempted by SEA 06U. The use of government industrial facilities for producer screening, rework, repair and retest is usually detrimental to an orderly production acceptance program and undermines motivation.

#### 8. Action

a. All torpedo programs currently in production and in-service shall conform to these policies. Torpedo system Acquisition Managers shall identify and report areas of non-conformance, and reasons therefore, to the Assistant Deputy Commander for ASW and Undersea Warfare Systems (SEA 06U).

b. Torpedo programs not yet in production shall comply with the requirements of this instruction.

9. Responsibilities

a. Naval Sea Systems Command

(1) Surface Ship ASW System and Weapons Subgroup (SEA 63Y).

(a) Provide overall torpedo production acceptance and proof testing program management.

(b) Maintain this instruction and reference (e) current.

(2) Torpedo Program Acquisition Managers (SEA 63Y, PMS 402, PMS 406).

(a) Provide specific torpedo production acceptance program management and planning.

(b) Issue technical, administrative and program documentation; approve overall design and design changes; maintain configuration control.

(c) Allocate and manage program funds.

(d) Direct preparation of, approve and issue production acceptance test specifications.

(e) Decide final acceptance or disposition of torpedo material after completion of testing individual units or lots. Officially accept torpedoes if so delegated.

(f) Provide production acceptance testing equipment, fixtures, exercise equipment and spares.

(g) Assure torpedo production contracts are written to include the following producer responsibilities:

1 Torpedo material will be presented for production acceptance testing with all manufacturing processes complete.

2 Under government direction conduct specified in-plant production acceptance testing and report results to cognizant activities. Maintain production acceptance test equipment and procedures as directed by NAVSEA Acquisition Manager.

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3 Provide failure analysis and corrective action for all torpedo material which fails its specified production acceptance test. Provide screening, retrofit, or other action deemed appropriate by the government to purge all affected torpedoes of problems and discrepancies discovered during production acceptance testing.

4 As required by the particular program, provide production acceptance testing expendables and consumables to the testing activity.

5 Witness production acceptance tests.

6 Prepare and submit proposed engineering changes to correct errors, defects and incompatibilities in specified technical documentation discovered during manufacturing and testing.

(3) Director of Contracts (SEA 02)

(a) Issue contractual documentation.

(b) Officially accept torpedoes and other material from the producer.

(c) Officially communicate with the producer on all business matters.

b. Acquisition Engineering Agent (AEA) (or In-Service Engineering Agent (ISEA) if so designated.)

(1) Provide technical review of the torpedo design; recommend design changes and improvements.

(2) Review production engineering changes, waivers, deviations, and/or alterations for effect on performance, reliability, maintainability, availability, quality, safety and life time cost, and make recommendations.

(3) Review production acceptance results submitted by the proofing activity and provide recommendations as appropriate.

(4) Review technical adequacy of production acceptance test failure analysis and corrective action for defective torpedo equipment.

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(5) Provide technical cognizance of factory and shop testing procedures and equipment for production acceptance testing and assure consistency of this equipment and procedures and their compatibility with fleet maintenance procedures.

(6) Recommend changes in test procedures and equipment.

(7) Review acceptance test specifications for technical adequacy, and assure their inclusion in the program's technical documentation package. Prepare production acceptance test specifications as directed by the NAVSEA Acquisition Manager.

c. Naval Undersea Warfare Engineering Station

(1) Conduct assigned in-water, shop and environmental stress production acceptance tests in accordance with documented procedures and prepare accepted torpedoes for issue.

(2) Acquire and reduce data from conducted tests and make this data available to interested activities.

(3) Analyze data from conducted tests, evaluate torpedo hardware performance against appropriate acceptance requirements, and classify tests.

(4) Report test results and make recommendations to NAVSEA on torpedo hardware acceptance.

(5) Prepare proof acceptance test specifications and other production acceptance test specifications as directed by the NAVSEA Acquisition Manager.

(6) Maintain the in-water testing range, workshop test and handling material, and torpedo exercise material.

d. Contract Administration Office (CAO)

(1) Administer the basic torpedo material manufacturing contract in close cooperation with the Acquisition Manager.

(2) Perform or witness the performance of specified factory production acceptance testing; analyze data, evaluate torpedo equipment, report test results and make recommendations to NAVSEA on torpedo equipment acceptance.

(3) Monitor performance of producers quality assurance program.

(4) Monitor performance and execution of total factory production acceptance test plan.

(5) Perform lotting, sample selection, segregation and bonding of torpedo equipment undergoing acceptance testing.

(6) Assist in administration of and determination of awards for contract incentive provisions.

(7) Monitor and expedite as necessary producers failure analysis and corrective actions.



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## DEFINITIONS

For the purpose of this instruction, the following definitions are provided:

a. Acceptable Quality Level (AQL). The AQL is the maximum percent defective (or the maximum number of defects per hundred units) that, for purposes of sampling inspection, can be considered satisfactory as a process average (paragraph 4.2 of MIL-STD-105D).

Note: When a customer designates some specific value of AQL for a certain defect or group of defects, he indicates to the supplier that his (the customer's) acceptance sampling plan will accept the great majority of the lots or batches that the supplier submits, provided the process average level of percent defective (or defects per hundred units) in these lots or batches is no greater than the designated value of AQL. Thus, the AQL is a designated value of percent defective (or defects per hundred units) that the customer indicates will be accepted most of the time by the acceptance sampling procedure to be used. The sampling plans provided in Tables 4-1, 4-2, 4-3 and 4-5 of reference (e) are so arranged that the probability of acceptance at the designated AQL value depends upon the sample size, being generally higher for larger samples than for smaller ones, for a given AQL. The AQL alone does not describe the protection to the customer for individual lots or batches but more directly relates to what might be expected from a series of lots or batches, provided the steps indicated in this publication are taken. It is necessary to refer to the operating characteristic curve of the plan to determine what protection the customer will have.

b. Acceptance Criteria. Acceptance criteria are the standards for acceptance of torpedo units, samples, or lots, usually stated in terms of AQL.

c. Acceptance Number. The maximum number of failing torpedoes allowed in a sample or lot in the primary test series for which the sample or lot will remain acceptable.

d. Classification. The description formally applied to a torpedo or lot of torpedoes which indicates its status of acceptability (pass, fail or nonvalid). Classification may be preliminary or final, depending on completion of analysis.

e. Component. A part of a torpedo that is not usually further broken down, such as a relay, condenser, resistor, transistor, integrated circuit, etc.

f. Conditional Acceptance. Acceptance by the government pending accomplishment or completion of a specified action. A torpedo receives conditional acceptance when it passes the designated factory acceptance tests at the manufacturer's plant, conducted by the contractor and witnessed by the government; this acceptance is conditional on the torpedo or the lot of which the torpedo is a part successfully passing proofing.

Enclosure (1)

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g. Critical Defect. A critical defect in a torpedo is a defect that judgment and experience indicate is likely to result in hazardous or unsafe conditions for an individual using, maintaining, or depending upon the product, or a defect that judgment and experience indicate is likely to prevent performance of the tactical function of the torpedo launching platform. A torpedo malfunction which prevents accomplishment of the torpedo's tactical mission would not normally be considered a critical defect, unless the malfunction directly menaced the launching platform, such as a faulty gyro or steering mechanism which caused a circular run.

h. Defect. Any nonconformance of the unit or product with specified requirements.

i. Defective. A unit which has one or more defects.

j. Design Defect (or Design Discrepancy). A nonconformance which a torpedo properly built in accordance with approved documentation will exhibit when tested under specified conditions. Design defects are not normally scored as proofing failures, unless the contract specifically addresses the contractor's responsibility for them.

k. Evaluation Runs. Any torpedo run conducted on the basis of a NAVSEA run plan to test changes in the torpedo or range equipment or to test proof conditions.

l. Experimental Run. Any run conducted to investigate specific troubles, to determine the cause of failure for the torpedo not meeting specific requirements, or to familiarize personnel with the torpedo.

m. Factory Acceptance Test. That test of the torpedo conducted at the factory in accordance with the applicable contract, the test results of which are used to determine conditional acceptance. The test is usually equivalent to the pre-range test given during the proof test series.

n. Fail. The proofing classification of a proof test wherein the torpedo does not meet specification requirements.

o. Failure--Torpedo. A torpedo which does not meet the requirements of one or more of the tests of the proof test series.

p. Final Acceptance. Government acceptance of a contractor's product after successful completion of all required tests and removal of any constraints which may have accumulated against the item. A torpedo becomes eligible for final acceptance after successfully completing proofing acceptance tests.

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q. Lot. A number of torpedoes in consecutive order of acceptance after final plant test submitted by a manufacturer for government inspection and proof test. Lot size will vary with production rate and type of proofing program.

r. Lot Tolerance Percent Defective (LTPD). The level of defectiveness that is unsatisfactory and for which the probability of acceptance will be low. By definition, the lot quality for which the probability of acceptance is 0.10.

s. Major Defect. A defect, other than critical, that is likely to cause the unit to fail to perform its intended function or reduce materially the usability of the unit for its intended purpose.

t. Malfunction. A failure of a torpedo, component, or assembly to function as intended or as designed.

u. Minor Defect. A defect that will not cause the unit to fail to perform its intended function, or will not reduce materially the usability of the unit or product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

v. Multiple Failure. A torpedo failing three successive in-water tests for independent causes.

w. Nonvalid Test. A test in which required information was not obtained and a clear course is not open to obtain the information within a reasonable period of time. Proofing test series may also be classified nonvalid for the following reasons:

1. Failure of government-furnished equipment.
2. Government personnel error.
3. Environmental conditions existing in the testing area that prevent the torpedo from performing. For example, thermal gradients, water temperature, marine life, boundaries, or facilities power failure.
4. When the secondary test series has the same failure as the primary test series.
5. Lost torpedoes: When there is no evidence of failure in the water run attributable to the torpedo.

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- x. No Test. A designation for an in-water test where the torpedo has not been launched for some reason other than torpedo failure and the torpedo can be retested without repeating the pre-range test. A "no test" torpedo will not count as a nonvalid.
- y. Operating Procedure (OP). An official Fleet maintenance document describing procedures for testing, handling, maintaining or deploying a weapon.
- z. Pending. No classification (awaiting additional information).
- aa. Post Range Shop Test. A physical, mechanical, or electrical test of a torpedo conducted in accordance with the applicable OP after the in-water run.
- bb. Pre-Range Shop Test. A physical, mechanical, or electrical test of the torpedo conducted in accordance with the applicable OP prior to the in-water run.
- cc. Primary Test. The first series of valid proof tests of the torpedo, whether scored passing or failing.
- dd. Production Acceptance Testing. That testing which is contractually specified as necessary to demonstrate to the government that the product presented for delivery is built as specified and meets specified performance, reliability and quality requirements.
- ee. Proof Test Series. A specified sequence of tests required for proof testing of a single torpedo to be considered complete.
- ff. Proofing. That part of torpedo production acceptance testing which includes an in-water test of the complete end-item torpedo under realistic operating conditions, usually on a sample basis, as a condition of government final acceptance of the torpedo material. Shop testing directly associated with in-water testing is considered part of the Proofing.
- gg. Quality Level. The ratio of valid passing tests to valid tests, expressed in percent, for primary tests. Note: Quality Level is expressed in percent effective; AQL and LTPD are expressed in percent defective.
- hh. Random Selection. Selection of the units of a sample so that each unit of the lot has an equal probability of being selected. Selection is usually made by using tables of random numbers.
- ii. Refurbishment Kits. A kit of torpedo components and materials furnished by a manufacturer, used to update a torpedo to a new configuration.

jj. Register Number. The number assigned to an individual torpedo by which it is tracked within the U.S. Navy inventory management system. Subassemblies and components within the torpedo are assigned serial numbers and are uniquely associated with that torpedo for the duration of its proof testing.

kk. Sample. One or more torpedoes drawn from a lot, the units of the sample being selected at random.

ll. Sample Size. The number of torpedoes in the sample.

mm. Secondary Test. The second, or next subsequent series of proof tests on a torpedo, after a valid failing test, and after necessary repair and preparation for retest. May be scored passing or failing.

nn. Torpedo Launching. Method of delivery of torpedoes for entry into water, usually classified as air (or ASROC), surface, or submerged launching.

oo. Torpedo Type. The term used to designate a specific mark and mod of torpedo.

pp. Torpedo Unit. That entity of parts and assemblies of which the torpedo is composed when in warshot condition and which is under test to determine whether requirements are met. The torpedo unit does not include external and internal equipment necessary to conduct the test, such as the exercise equipment, external accessories, exercise batteries, etc.

qq. Valid Test. A test from which the desired information was obtained. Valid proof tests are classified as passing or failing.

rr. Water Run (Or In-Water Run). A launching or attempted launching of a torpedo in the water in accordance with the conditions given in the applicable proof acceptance specification, whether or not the torpedo moves through the water through its own power and whether the run is valid or nonvalid. Each water run on a torpedo will be assigned a consecutive number by the proof activity. Sometimes called the "range test" or the "torpedo run."

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## MODEL QUALITY AND PERFORMANCE INCENTIVE CLAUSES

Torpedo Mark \_\_\_\_\_ Contract  
MOD \_\_\_\_\_

## 1. Factory Quality Incentives

## a. Factory acceptance test weight factors are:

- (1) Afterbody assembly testing \_\_\_\_\_ percent  
level
- (2) Electronic FIR GP testing \_\_\_\_\_ percent  
level
- (3) Complete main assembly testing \_\_\_\_\_ percent  
level

## b. The incentive plan will provide for each group tested:

(1) Afterbody assembly level shall be tested in accordance with \*\_\_\_\_\_, including all revisions in effect on the date of signing of this contract.

(2) Electronic FIR tests shall be tested in accordance with \*\_\_\_\_\_, including all revisions in effect on the date of signing of this contract.

(3) Complete main assembly shall be given a systems test in accordance with \*\_\_\_\_\_, including all revisions in effect on the date of signing of this contract.

The first submission at the factory of the item to be tested will be used to compute the score. Submission of the item, for the purpose of score computation, will take place when the contractor notifies the government inspector that he is ready to conduct the official test for scoring purposes, and the contractor conducts the specified tests in accordance with the procedures set forth in \*\_\_\_\_\_, while the government inspector is witnessing the test. (Prior to conducting the official test, the contractor, at his discretion, may test the item and make any necessary adjustments therein.) No adjustments by the contractors will be permitted during the official test and inspection which is to be used to compute the score. Any

\* Enter appropriate acceptance specification document identification (WS \_\_\_\_\_).

Enclosure (2)

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failure which occurs during the official test will be counted as a failure for the purpose of computing the (average) quality score. If the contractor believes that a torpedo rejection is attributable to a design discrepancy, an engineering change proposal (ECP) will be written in accordance with the section hereof entitled "Engineering Change Procedure." If proven to the satisfaction of the government that a design discrepancy does in fact exist, then the rejection will not be counted for purposes of determining the average score.

c. Authorized Navy personnel will certify the official factory acceptance test results. The evaluation of such results in accordance with the provisions of this clause and final determination of the factory quality incentives score will be made by NAVSEA. Determination of the factory quality incentive will be made upon completion of production of the torpedoes and government acceptance thereof, in accordance with paragraph 1d.

$$\text{(Average) Factory Quality Score} = 100 - (0.2a + 0.6b + 0.2c)**$$

- a = Rejection rate, in percent, of afterbody assemblies
- b = Rejection rate, in percent, of electronic FIRs
- c = Rejection rate, in percent, of main assemblies

The incentive plan will provide for each group tested:

(1) No increase or decrease in contract price for attaining an (average) quality score of 92.0 percent.

(2) An increase in contract price at the rate of 1 percent\* of the original fixed price of that group represented for item 0001 for each percentage point the (average) factory quality score exceeds 92.0 percent.

(3) A decrease in contract price at the rate of 1/4 of 1 percent\* of the original fixed price of that group represented for item 0001 for each percentage point the (average) factory quality score is less than 92.0 percent.

(4) If the factory quality score results in an increase in contract price, and if the proofing performance score is below 80.0 percent, then the factory quality incentive earned under paragraph 1c(2), above, will be adjusted as follows:

$$\frac{\text{Performance Score \%} - 75.0\%}{5} \times 100 = \text{Adjusted Factory Quality Incentive Rate}$$

\* Typical values for early contracts. Follow-on contracts with stable design may adjust these values downward (for reward) and upward (for penalty).

\*\* The weighting factors will vary with the torpedo type and type of acquisition program.

Examples:

If performance is equal to 78.0 percent, then the adjusted  
factory quality incentive rate =  $\frac{(78.0\% - 75\%)}{5} \times 100 = 60.0\%$ .

factory quality incentive rate =  $\frac{(75.0\% - 75.0\%)}{5} \times 100 = 0.0\%$ .

If the performance score is below 75.0 percent, then the factory quality  
incentive rate will be maintained at 0 percent.

d. Determination of the factory quality incentive increase or decrease  
will be made after completion of factory acceptance tests of each of the  
following quantities of torpedoes:

(1) All torpedoes included in phase I and phase II proofing, in  
accordance with NAVSEA \* \_\_\_\_\_.

(2) Each succeeding group of \_\_\_\_\_ torpedoes.

(3) A final group of torpedoes, not less than \_\_\_\_\_ nor more  
than \_\_\_\_\_.

## 2. Proofing Performance Incentives

a. The torpedo proofing performance incentive is for rewarding the  
contractor for delivering torpedoes which exceed target proofing performance  
and penalizing the contractor for failure to do so. The proofing performance  
score will be determined on the basis of first run proofing tests conducted in  
accordance with phases I, II and III of \* \_\_\_\_\_ and in accordance  
with paragraph 2b(3) below. The score will be computed, using the following  
formula:

$$\text{Average proofing performance score} = 100 - \frac{\text{Total number torpedoes failures}}{\text{Total number torpedoes submitted}} \times 100$$

(excluding nonvalids)

b. Conditions Are:

(1) Torpedoes Mark \_\_\_\_\_ Mod \_\_\_\_\_ performance will be measured by  
criteria set forth in \* \_\_\_\_\_.

(2) The test conditions will conform to section \_\_\_\_\_ of  
\* \_\_\_\_\_.

\* Enter appropriate acceptance specification document identification  
(WS \_\_\_\_\_)

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(3) The proofing acceptance plan is designed to demonstrate a performance level of not less than 85 percent on each group of torpedoes.

(a) Number of torpedoes to be tested: as required in phase I, II, and III of \* \_\_\_\_\_.

(b) Failure -- Any torpedo which fails to pass each of three tests (pre-range, in-water, post-range) in accordance with Section \_\_\_\_\_ of \* \_\_\_\_\_ will be considered a failure for purposes of scoring for this incentive. Multiple failures occurring during a single run will be logged for analysis. The run will be classified as a single failure for scoring purposes. If repetitive failures occur due to the repetitive failure of a particular component and the contractor effects and demonstrates to the satisfaction of the government a successful solution to the repetitive failure, the government reserves the right to determine to what extent the failures will affect the computation of performance. If the contractor believes that a torpedo rejection is attributable to a design discrepancy, an ECP will be written in accordance with the section hereof entitled "Engineering Change Procedure." If proven to the satisfaction of the government that a design discrepancy does in fact exist, then the rejection will not be counted for purposes of determining the average score.

(c) State of success--To be counted as a success, the torpedo must pass each of the three tests (pre-range, in- water, post-range) in accordance with paragraph \_\_\_\_\_ of \* \_\_\_\_\_.

c. Authorized Navy personnel will certify official proofing test results. The evaluation of such results in accordance with provisions of this clause and final determination of proofing performance incentive score will be made by NAVSEA. The incentive plan for proofing performance provides:

(1) No increase or decrease in contract price for attaining an (average) proofing performance score of 85.0 percent on any given group.

(2) An increase in contract price at the rate of 1 percent of the original fixed price of that group represented for item 0001 for each percentage point the (average) proofing performance score is between 85.0 and 90.0 percent.

(3) An increase in contract price at the rate of 1- 1/2 percent of the original fixed price of that group represented for item 0001 for each percentage point when the (average) proofing performance score is between 90 and 100 percent. This increase is only applicable to that portion of the score above 90 percent; i.e., the provision of paragraph (2), above, remains in effect for the 85 to 90 percent range.

\* Enter appropriate acceptance specification document identification (WS \_\_\_\_\_).

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(4) A decrease in contract price at the rate of 1/2 of 1 percent of the original fixed price of that group represented for item 0001 for each percentage point the (average) proofing performance score is below 85.0 percent.

(5) An (average) proofing performance score for any given group of below 75.0 percent is unsatisfactory, will be considered as a failure to perform this contract in accordance with its essential terms, and will be sufficient grounds for termination for default within the meaning of the default clause of the contract. Failing torpedoes contributing to a minimum average score of below 75.0 percent will be rerun at the expense of the contractor.

d. Incentive payment for proofing performance will be determined at the following times in the proofing cycle of torpedoes in accordance with

\* \_\_\_\_\_.

(1) At the end of phase II proofing, the proofing performance score will be computed for first proofing test series of all torpedoes tested under phase I and phase II. The incentive payment at this time shall be prorated to that portion of the total torpedoes to be delivered under the contract. The incentive payment made at this time will be:

$$\frac{d \times e \times f}{\text{Number of torpedoes on order}}$$

where:

d = Percent increase/decrease (+)

e = Number of torpedoes tested under phases I and II

f = Total original contract price for item 0001.

(2) Once phase III proofing has been authorized, an incentive will be computed at the end of each group of \_\_\_\_\_ torpedoes (representing lots, since some may increase from \_\_\_\_\_ to \_\_\_\_\_ torpedoes) in accordance with \* \_\_\_\_\_. The proofing performance score will be computed for all torpedoes tested based upon the first submission of first samples only for the lots represented in the \_\_\_\_\_ torpedoes. In the event a revision to 100 percent (phase II) proofing is required by the government, the performance score for that group of \_\_\_\_\_ torpedoes will be the average score of first runs of all torpedoes tested in phase III, plus the score of all torpedoes tested in phase II. (Note: The final group will be comprised of the remaining torpedoes, not less than \_\_\_\_\_ nor more than \_\_\_\_\_). The size of the groups of torpedoes established for the purpose of computing proofing performance incentives during sample proofing will be related to the established lot size

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and production rate, so that incentives will be computed two to three times annually. For example: For a typical lot size of 48 and production rate of approximately 600 per year, incentives would be computed for each consecutive group of 6 lots, or 288 torpedoes.

Payment of progress incentive increase/decrease will be made according to the following:

$$\frac{d \times g \times f}{\text{Number of torpedoes on order}}$$

where: d = Percent increase/decrease ( $\pm$ )

g = Final group size

f = Total original contract price for item 0001