

INCH-POUND

MIL-H-24616A(SH)

03 March 1994

SUPERSEDING

MIL-H-24616(SH)

26 January 1983

(See 6.10)

MILITARY SPECIFICATION

HELMET, NAVAL SHIPBOARD (MK 5 MOD 0)

This specification is approved for use by 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 the ballistic protective shipboard helmet, MK 5 MOD 0, which consists of a ballistic shell, impact liner, suspension frame assembly, and chin strap assembly.

1.2 Classification. The helmet is of one size and of the following types, as specified (see 6.2):

Type I - General use.

Type II - Phonetalker.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, 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 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, SEA 03R42, Naval Sea Systems Command, 2531 Jefferson Davis Hwy, Arlington, VA 22242-5160 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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SPECIFICATIONS

FEDERAL

- V-T-295 - Thread, Nylon.
- KK-L-254 - Leather, Sheepskin, Chrome Tanned.
- MMM-A-1617 - Adhesive, Rubber Base, General Purpose.
- PPP-B-26 - Bag, Plastic, (General Purpose).
- PPP-B-636 - Boxes, Shipping, Fiberboard.
- PPP-C-843 - Cushioning Material, Cellulosic.

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- MIL-T-5038 - Tape, Textile and Webbing, Textile, Reinforcing, Nylon.
- MIL-C-5040 - Cord, Fibrous, Nylon.
- MIL-P-12420 - Plastic Material, Cellular, Elastomeric.
- MIL-P-19644 - Plastic Molding Material (Polystyrene Foam, Expanded Bead).
- MIL-P-24441 - Paint, Epoxy-Polyamide General Specification for.
- MIL-P-24441/1 - Paint, Epoxy-Polyamide, Green Primer, Formula 150, Type I.
- MIL-P-24441/2 - Paint, Epoxy-Polyamide, Exterior Topcoat, Haze Gray, Formula 151, Type I.
- MIL-S-44091 - Strap, Chin, Ground Troops' - Parachutists' Helmet.
- MIL-P-46593 - Projectile, Calibers .22, .30, .50 and 20 mm Fragment-Simulating.

STANDARDS

FEDERAL

- FED-STD-595 - Colors Used in Government Procurement.
- FED-STD-751 - Stitches, Seams, and Stitchings.

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- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-147 - Palletized Unit Loads.
- MIL-STD-662 - V50 Ballistic Test for Armor.

(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.

DRAWINGS

NAVAL SEA SYSTEMS COMMAND (NAVSEA)

- 803-6397308 - Helmet, PhoneTalker, MK 5, MOD 0, General Assembly.
- 803-6397310 - Helmet, Shipboard, Battle, MK 5, MOD 0.

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(Application for copies should be addressed to: Commander, Portsmouth Naval Shipyard, Code 202.2, Portsmouth, NH 03801.)

2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

289.1 - Protective Headwear for Industrial Workers - Requirements.

290.1 - Specifications for Protective Headgear for Vehicular Users.

(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position. (DoD adopted)

D 1788 - Standard Specification for Rigid Acrylonitrile-Butadiene-Styrene (ABS) Plastics. (DoD adopted)

D 3951 - Standard Practice for Commercial Packaging. (DoD adopted)

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

(Non-Government standards and other publications are normally available from the organizations that prepare or 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 document and the references cited herein (except for related associated detail specifications, specifications, specification sheets or MS standards), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Standard sample. Samples of the helmet or components, when furnished, are solely for guidance and information to the contractor (see 6.5). Variations from this document may appear in the sample, in which case this document shall govern.

3.2 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.4) in accordance with 4.3. The contractor shall conduct first article testing prior to production to verify that the acquired helmet will meet the requirements of this specification. The contractor is responsible for instrumentation, pre-production tests, and any other procedure or item required to perform the first article inspection.

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3.3 Materials and components. Materials and components shall be in accordance with NAVSEA 803-6397308 and 803-6397310, as applicable, and as specified herein (see 6.6).

Material must withstand frequent exposure to sea water and salt atmosphere, and meet all of the requirements of these descriptions. Aluminum shall not be used for any components. Wherever color black is specified, it shall be color number 37038 in accordance with FED-STD-595.

3.3.1 Standard configuration of the Helmet. (MK 5 MOD 0). The configuration of the helmet is shown on figures 1 and 2.

3.3.2 Components. The Helmet, (MK 5 MOD 0), shall contain the following major components:

- (a) Helmet shell with impact liner.
- (b) Suspension frame assembly.
- (c) Chin strap assembly (chin strap, buckle assembly, quick-release buckle/snap assembly).
- (d) Metal posts and nylon screws.

3.3.3 Helmet shell. The helmet shell shall be fabricated using a ballistic fabric that meets all of the requirements specified herein. The inner and outer surfaces shall be wrapped with a fully saturated layer of fiberglass cloth.

3.3.3.1 Paint. The external surface shall be finish coated with an epoxy paint system in accordance with MIL-P-24441 consisting of a primer coat, color green, in accordance with MIL-P-24441/1; a top coat, haze gray, in accordance with MIL-P-24441/2, with aggregate; and a second topcoat of haze gray color without aggregate.

3.3.3.1.1 Aggregate. The aggregate for walnut shell flour texturing shall be 40/100 mesh walnut shell flour. The coating-walnut shell flour mixture shall contain 10 ounces of walnut flour to one gallon of base coating and shall be reduced to spraying consistency.

3.3.4 Liner, impact and adhesive. The impact liner shall be approximately 1/2 inch thick fabricated from 2 to 2-1/2 pound density foam, molded polystyrene, expanded bead, in accordance with MIL-P-19644, type II, class 1. The liner shall be cemented to the helmet shell, using an adhesive in accordance with MMM-A-1617 (see 6.3).

3.3.4.1 Color. The inside surfaces of the helmet shall be painted black.

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3.3.5 Suspension frame. The suspension frame shall be fabricated from plastic molding material in accordance with ASTM D 1788, ABS 6-3-3. The color shall be black. The frame shall be vacuum formed using a forming fixture. The frame shall fit the shell snugly without moving or leaving gaps between the shell and frame. The frame shall be capable of being removed for repair or replacement (see 6.3).

3.3.6 Suspension system. An adjustable head suspension system shall consist of a foam-backed crown pad, crown pad draw string, suspension webbing, and an adjustable head band assembly. The assembly shall have a front and back leather head band. Adjustment shall be with a nylon adjusting strap and nylon buckle arrangement as shown in the drawings.

3.3.6.1 Webbing. The webbing used for the suspension straps shall be 1-inch wide nylon in accordance with MIL-T-5038, type IV. The color shall be black. Ends of webbing shall be fused or dipped in a commercial finishing lacquer to prevent unravelling (see 6.3).

3.3.6.2 Crown pad. The crown pad shall be leather, sheepskin, 2-ounce, in accordance with KK-L-254, type B, class 1, subclass (a), color black. The backing shall be 1/4-inch foam in accordance with MIL-P-12420, type I, class 3. The crown pad shall have six slots cut in the pad for routing the six nylon crown straps used for height adjustment of the suspension system.

3.3.6.3 Head band. The front and back head band shall be leather, sheepskin, 2-ounce, in accordance with KK-L-254, type B, class 1, subclass (a).

3.3.6.4 Head band adjusting strap. The strap used to adjust the head band shall be webbing, nylon, 1-inch wide in accordance with MIL-T-5038, type IV, black (see 6.3).

3.3.6.5 Buckle. The buckles used with the head band adjustment strap shall be 1-inch nylon, black, low profile triglide.

3.3.6.6 Drawstring. The drawstring used to secure the crown pad and suspension straps shall be nylon braided cord, 100 pound tensile strength, in accordance with MIL-C-5040, type I, black. The ends of the nylon cord shall be fused.

3.3.7 Chin strap assembly. A chinstrap in accordance with MIL-S-44091 shall be provided and secured to each helmet so that the quick release button and snap is located on the left hand (LH) tab of the assembly (see 6.3).

3.3.8 Post and screw. The helmet shell, suspension frame, and chin strap assembly shall be attached with a black nylon screw, No. 8-32 x 5/8-inch long and a 3/8-inch stainless steel post No. 8-32 thread as shown in the drawings.

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3.3.9 Identification label. A self-adhesive metal label shall be affixed to the inside of the shell of the helmet identifying the following:

(Identification label contents
for type I)

Helmet, General Use
(Mark 5-Mod 0), Type I
Contract number
National stock number
Manufacturer's name

(Identification label contents
for type II)

Helmet, Phonetalker (Mark 5-Mod 0),
Type II
Contract number
National stock number
Manufacturer's name

Size of characters shall be approximately $1/8 \pm 1/16$ -inch high for the identification label.

3.3.10 Instruction sheet. An instruction sheet, figure 3a for type I helmets and figure 3b for type II helmets, shall be included with each packaged helmet.

3.3.11 Recovered materials. Unless otherwise specified herein, all equipment, material, and articles incorporated in the products covered by this specification shall be new and may be fabricated using materials produced from recovered materials to the maximum extent practicable without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specifically specified.

3.4 Performance.

3.4.1 Ballistic resistance. The assembled helmet shall exhibit a V_{50} ballistic limit of not less than 2000 feet per second (ft/sec) when tested as specified in 4.7.1.

3.4.2 Impact resistance and impact acceleration.

3.4.2.1 Impact resistance. The assembled helmet shall show no signs of damage when subjected to the impact energy of 40 foot-pounds (ft-lb) when tested as specified in 4.7.2.1.

3.4.2.2 Impact acceleration. The helmet assembly shall not transmit an impact energy impulse to a standard headform accelerometer in excess of 150 G's with durations not to exceed 6 milliseconds (msec) when tested as specified in section 4.7.2.2.

3.4.3 Water immersion. The helmet shell (shell only) shall increase in weight not greater than 3 percent over dry weight when tested as specified in 4.7.3 and shall exhibit a V_{50} of not less than 2000 ft/sec when tested ballistically as specified in 4.7.1.

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3.4.4 Flammability. The helmet shall be self-extinguishing when tested as specified in 4.7.4.

3.4.5 Heat aging. The helmet shall show no visible damage when tested as specified in 4.7.5 and shall exhibit a V_{50} ballistic limit when tested as specified in 4.7.1.

3.4.6 Tensile strength of chin strap assembly, including post and screw. The chin strap shall withstand a static load of not less than 130 pounds when tested as specified in 4.7.6. The nylon screws shall break at 120 ± 10 pounds when tested as specified in the screw test of 4.7.6.

3.4.7 Adhesion of finish. There shall be no lifting of any finish squares when tested as specified in 4.7.7.

3.5 Weight. The total weight of the assembled helmet shall be not greater than 64 ounces for type I helmets and 68 ounces for type II helmets in its complete form when tested as specified in 4.6.2. Total weight includes all parts of the helmet assembly.

3.6 Stitching. Stitching shall be in accordance with FED-STD-751 using thread in accordance with V-T-295. The following shall apply:

- (a) Ends of all stitching shall be backstitched or overstitched not less than 1/2 inch.
- (b) Thread breaks, or two or more consecutive skipped or runoff stitches shall be repaired by overstitching not less than 1/2 inch in each direction beyond the defective stitching area.
- (c) Thread tension shall be maintained so that there will be no loose stitching resulting in loose bobbin or top thread or excessive tight stitching resulting in puckering of the materials sewn.
- (d) All thread ends shall be trimmed to a length not greater than 1/4 inch.

3.7 Construction. The construction shall conform in all respects to the drawings (see 2.1.2), and shall be examined as specified in 4.6.1.

3.8 Assembly of components. All components of the helmet, that is, impact liner, suspension assembly, chin strap assembly, and screw post set, shall be installed as shown in the drawings when examined as specified in 4.6.1.

3.9 Workmanship. The helmet shall be constructed, assembled, and finished in a manner to ensure good quality and an overall neat appearance. Particular attention shall be given to freedom from blemishes, burrs, sharp edges, chips, cracks, blisters, or voids; accuracy of dimensions; thoroughness of painting; alignment of parts and tightness of assembly screws, and so forth. The helmet shall be thoroughly cleaned of all foreign material.

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

4.1.1 Responsibility for compliance. All items shall meet 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 ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of the manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

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

- (a) First article inspection (see 4.3).
- (b) Quality conformance inspection (see 4.4).

4.3 First article inspection. Unless otherwise specified (see 6.4), five assembled helmets and five helmet shells without the paint shall be examined and tested by a Government approved commercial laboratory or a Government laboratory as specified by the contracting activity. The Government reserves the right to have a representative present during first article testing. The five helmet shells without the paint shall be examined for visual defects and the defects shall be classified in accordance with table II. The five completed helmet assemblies shall be examined for visual defects and the defects shall be classified in accordance with table III. The helmet assemblies shall then be tested or examined in accordance with the inspections in table I. If one of the helmet assemblies fails any test specified in table I, the helmets represented for first article inspection shall be rejected (see 6.4).

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TABLE I. Inspection.

Examinations	Requirement	Test method	First article sample size	Quality conformance sample size
Dimensional examination of helmet shell	3.7	4.5.1	Two shells from each mold	Use "major" from table V
Visual examination of helmet shell	3.9	4.5.2	All five helmet shells	Use "major" or "minor" as appropriate with table V
Visual examination of end item	3.9	4.6.1	All five helmets	Every helmet (100 percent of lot)
Weight examination of end item	3.5	4.6.2	All five helmets	Use "major" from table V
Water immersion	3.4.3	4.7.3	One shell from each mold	Helmet shell #1
Ballistic resistance	3.4.1	4.7.1	Helmets #1 & #2	Helmets #1 & #2
Impact resistance and acceleration	3.4.2	4.7.2	Helmet #3	Helmet #3
Flammability	3.4.4	4.7.4	Helmet #4	Helmet #4
Heat aging	3.4.5	4.7.5	Helmet #5	Helmet #5
Tensile strength of chinstrap and screws	3.4.6	4.7.6	Helmet #2	Helmet #2
Adhesion of finish	3.4.7	4.7.7	Helmet #2	Helmet #2

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TABLE II. Classification of visual defects of helmet shell prior to application of paint.

Examine	Defect	Classification	
		Major	Minor
Helmet shell (exterior and interior)	Any fabric fibers visibly cut or raised on the shell body	X	
	Any surface dent, depression, or area not smooth which seriously affects appearance or serviceability	X	
	Edge not smooth and even; that is, sharp, uneven, jagged, or hanging fibers	X	
	Any surface dent, depression, or area not smooth which does not seriously affect appearance or serviceability		X
	Any delamination, pimple, or blister	X	
	Any evidence of cracking or crazing	X	
	Any evidence of dry spot, any area of nonresin flow, or other molding deficiency	X	
	Any raised pleat, wrinkle, or crease longer than 1/2 inch but less than 1 inch		X
	Any hole (other than required for assembly of suspension system to shell), crack, chip, soft spot, blister, or void	X	
	Any shell not fully wrapped in fiberglass	X	
	Any raised pleat, wrinkle, or crease 1/2 inch or less in length that is not smooth		X

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TABLE II. Classification of visual defects of helmet shall prior to application of paint - Continued.

Examine	Defect	Classification	
		Major	Minor
Helmet shell (exterior and interior) Continued	Raised pleat, wrinkle, or crease 1/2 inch or more in length that is not smooth	X	
	Any raised pleat, wrinkle, or crease 1 inch or longer	X	
	Any repair or reworking	X	

TABLE III. Visual defects of end item.

Examine	Defect	Major	Minor
Finish on exterior, interior, of completed helmet	Incomplete or uneven paint finish	X	
	Finish wet or tacky to the touch	X	
	Aggregate omitted	X	
	Aggregate not uniformly distributed		X
	Aggregate overrun extending beyond edge onto interior surface of helmet		X
	Coating furrows, flakes, or peels (when assembly is scratched with fingernail)	X	
	Blemish, such as peeling, blistering, or flaking	X	
	Not a smooth, uniform coating; that is, run or sag affecting an area more than 1 square inch	X	
	Foreign matter imbedded in or appearing on the finish, such as dirt, stain, oil, or grease	X	
	Color of finish not as specified	X	
	Any repair or rework	X	

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TABLE III. Visual defects of end item - Continued.

Examine	Defect	Major	Minor
Leather	Cut, hole, or tear	X	
	Finish flaky, peeling, or cracked	X	
	Grain surface of leather not facing outside	X	
	Deep scratch or abraded area	X	
	Color not as specified		X
Frame	Any malformation or dimension not as specified	X	
	Color not as described or not uniform	X	
	Any sharp edge or burr	X	
	Any hole (other than required for assembly of suspension system to shell), crack, chip, soft spot, blister, or void	X	
Hardware	Broken or malformed, corroded, sharp edge, or burr	X	
	Any component improperly installed causing failure to serve intended purpose	X	
	Dimension or material not as specified	X	
	Painted components: any flaking or peeling, sags, runs, or scratches exposing base material	X	
Any snap fastener, eyelet,	or grommet insecurely clinched or peened to the degree that separation may occur from the assembly	X	
Chinstrap assembly	Any snap fastener, eyelet, or grommet excessively clinched or peened to the degree that materials are damaged	X	

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TABLE III. Visual defects of end item - Continued.

Examine	Defect	Major	Minor
Chinstrap assembly (Continued)	Any snap fastener that does not function properly, that is, fails to provide a secure closure or open freely	X	
Suspension system (includes suspension pad assembly, crown pad assembly, cover pad)	Any cut, tear, or hole	X	
	Dimensions of components not as specified in drawings	X	
	Color of any component not as specified	X	
	Any component not properly assembled	X	
	Exposed ends of nylon webbing or nylon cord not fused (when applicable)	X	
Impact liner	Broken or malformed	X	
	Color not as described or not uniform		X
	Any hole, crack, chip, soft spot, blister, or void	X	
	Dimensions not as specified	X	
Stitching	Stitching resulting in loose top or bobbin threads, or excessively tight resulting in puckering of materials	X	
	Ends of stitching not secured as specified	X	
	Thread breaks, or two or more consecutive skipped or runoff stitches not overstitched	X	
	Thread ends not trimmed as specified	X	

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TABLE III. Visual defects of end item - Continued.

Examine	Defect	Major	Minor
Components and assembly (applicable unless otherwise classified herein)	Any component omitted, malformed, or misplaced	X	
	Any component not firmly affixed or attached to an extent that any component may become separated during use	X	
	Design of any component not as specified in drawings	X	
	Any unauthorized repair	X	
	Any component not installed in the helmet, for example, chin strap not attached	X	
	Any component incorrectly installed on helmet or incorrectly assembled	X	
Identification label	Omitted, illegible, incorrect, or size of characters not as specified	X	
Cleanliness	Grease or oil stains		X

4.4 Quality conformance inspection. Quality conformance inspection shall be conducted by the contractor and shall consist of the quality conformance tests and examinations specified in table I.

4.4.1 Inspection lot. For purposes of inspection sampling, a lot is defined as all helmets produced in one facility from a single mold approved in accordance with 4.5.1 using the same materials, the same production processes, and offered for delivery at one time.

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4.4.2 Sampling for quality conformance. As a minimum, the contractor shall select sample quantities from each lot of helmet assemblies in accordance with table V and inspect them in accordance with the quality conformance tests and examinations specified in table I. A sample size of not less than five helmets and one shell from each lot is required to perform the tests specified in table I. Visual examination of complete end item characteristics listed in table III is not subject to sampling and shall be conducted on every helmet offered for delivery. Sample size for helmet shell characteristics listed in table II and table IV depends on classification of the characteristic. The sample size for each classification is shown in table V. If one or more defects are found in any sample, the entire lot shall be rejected. The contractor has the option of screening 100% of the rejected lot for the defective characteristic(s), or providing a new lot which shall be inspected in accordance with the sampling plan contained herein.

TABLE IV. Packaging inspection.

Examine	Defect	Classification	
		Major	Minor
Markings, exterior and interior	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application	X	
Materials	Component missing, damaged, or not as specified	X	
Workmanship	Helmets not wrapped as described; bulged or distorted container	X	
Content	Number of helmets per container not as described Instruction sheet missing	X	

TABLE V. Sampling for quality conformance inspection.

Sample size		
Lot size	Major characteristics	Minor characteristics
2 to 50	5	3
51 to 90	7	6
91 to 150	11	7
151 to 280	13	10
281 to 500	16	11
501 to 1,200	19	15

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TABLE V. Sampling for quality conformance inspection - Continued.

Sample size		
Lot size	Major characteristics	Minor characteristics
1,201 to 3,200	23	18
3,201 to 10,000	29	22
10,001 to 35,000	35	29

4.5 Examination of helmet shell. Examinations of helmet shells shall be performed prior to application of the paint.

4.5.1 Dimensional examination of initial production of helmet shells. Samples produced from each mold the contractor intends to use in production shall be examined as specified in table I for all dimensional requirements. Any shell with a dimension not conforming to the requirements of 3.7 shall be rejected and the applicable mold shall be reworked accordingly. If any mold is required to be reworked, two new shells shall be produced from that mold and the examination of the shell shall be repeated. If any mold is changed or if the molding process is changed, the above examination shall be repeated on a shell produced incorporating the changes prior to its use in regular production.

4.5.2 Visual examination of helmet shells. The helmet shell shall be examined for all visual defects listed in table II.

4.6 Examination of end item.

4.6.1 Visual examination of the end item. Each completed helmet assembly shall be examined in accordance with the helmet assembly drawings for all visual defects listed in table III. Each item inspected shall consist of a helmet assembly complete with all components. Detection of any defect shall be cause for rejection of the helmet.

4.6.2 Weight examination of end item. The complete helmet assembly shall be weighed and nonconformance with the weight requirement specified in 3.5 shall be considered a failure.

4.6.3 Packaging inspection. An examination shall be made to determine that preservation, packing, and marking comply with the requirements of section 5. Defects shall be as described in table IV. The sample unit shall be one shipping container fully prepared for delivery (except that it need not be closed). The lot shall be the number of containers offered for delivery at one time.

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4.6.3.1 Inspection of shipping containers. When shipping containers are required to be in accordance with PPP-B-636, examination for defects in closure, waterproofing, and strapping shall be in accordance with the quality assurance provisions found in that specification.

4.7 Performance. Unless otherwise specified herein, all tests shall be performed at 23 degrees Celsius ($^{\circ}\text{C}$) (73 ± 4 degrees Fahrenheit ($^{\circ}\text{F}$) and relative humidity of 50 ± 5 percent. Test samples shall be exposed to these conditions for at least 24 hours prior to test.

4.7.1 Ballistic resistance. The ballistic resistance test shall be conducted in accordance with MIL-STD-662 except as specified in 4.7.1.1. The fragment simulating projectile shall be the .22 caliber, type 2 in accordance with MIL-P-46593; except as modified by figure 4 of this document, and shall weigh 17 ± 0.25 grains. Individual values utilized in expressing the V_{50} ballistic resistance for each helmet shall be determined. Any helmet having a V_{50} ballistic resistance below 2000 ft/sec shall be considered a test failure.

4.7.1.1 Ballistic test method. The helmet shall be stored in the ballistic test chamber for not less than 24 hours prior to testing. The helmet shall be subdivided by marking the outside surface into five sections: a top section and four side sections. The top section shall be a 4-inch diameter circle with the top bench mark being the center point. The four side sections shall be the areas below the top section and between the 0-90 degree, 90-180 degree, 180-270 degree, and 270-360 degree bench marks. The side sections shall be formed by drawing lines from the peripheral bench marks to the top center bench mark. A minimum of two fair impacts, randomly placed, shall be fired in each section, except that one of the two fair impacts in the top section shall be at the approximate center crown point. The impact points shall be a minimum distance of 1-1/2 inch from each other and from holes. An impact shall be invalid if the impact point is in an area of delamination caused by a previous impact. The helmet shall be rigidly mounted with the area of impact normal to the line of fire. The witness plate shall be rigidly mounted inside the helmet 2 inches behind the area of impact.

4.7.1.1.1 Barrel. The barrel shall be a .30 caliber rifled barrel with a one-in-sixteen twist. The barrel length shall be 28 inches. The barrel shall be chambered to accommodate firing the specified sabot.

4.7.1.1.2 Yaw card measurement system. The utilization of a yaw card in determining yaw shall be performed as follows:

- (a) The yaw card shall be placed directly in front of the test sample with the emulsion side facing the sample. (The yaw card will be devoid of any markings.) Kodak photographic paper, single weight, kodabromide, or equal, may be used for the yaw card.
- (b) After the test, the yaw card shall be carefully measured to determine the largest dimension of the hole caused by penetration of the projectile. An optical magnification device with a

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magnification between 5X and 10X shall be used for making this measurement. This measurement shall be compared to the X-axis on figure 5. The Y-axis on figure 5 shall be used for determining the degree of the yaw.

- (c) Yaw shall be measured at intervals not less than those indicated below. When the barrel is new, a minimum of 25 shots shall be fired to break-in the barrel. Measurement of yaw shall be five successive shots at each interval.

Measurement interval:

- (1) After "break-in" period.
 - (2) After 250 shots.
 - (3) After 500 shots.
 - (4) After 750 shots.
 - (5) After 1,000 shots.
 - (6) After 1,000 shots, every 100 shots thereafter.
- (d) In the event that any shot fired indicates yaw greater than 5 degrees, it shall not be used to calculate V_{50} ballistic resistance, and the barrel shall be rechecked for effect on yaw as follows: fire five shots, if three shots exhibit yaw, discard the barrel, and if one or more shots exhibit yaw, investigate cause and correct.
 - (e) In case of dispute concerning a particular barrel, yaw shall be measured by a photographic measurement system using a multiframe light source to determine projectile velocity and yaw. Yaw will be measured by the system to an accuracy of 0.5 degrees.

4.7.1.1.3 Sabot. A sabot shall be used in loading and firing the projectile. The sabot shall be manufactured to conform to figure 6. The projectile shall be loaded in such a manner that the whole body of the projectile is in the sabot except for the gas ring. The projectile shall be loaded so that the base of the projectile is in contact with the pusher plate (see 4.7.1.1.4).

4.7.1.1.4 Pusher plate. A pusher plate shall be utilized and placed flush with the edge of the throat of the cartridge. The pusher plate shall have the following characteristics:

- (a) Diameter - 0.304 inch (reference dimension).
- (b) Thickness - 0.050 inch (reference dimension).
- (c) Material - Aluminum, 7075T6 or 6061T6.

4.7.1.1.5 Location of rifle, triggering devices, and target material. The following dimensions may be varied slightly to fit individual conditions and range arrangement, but the accuracy of measurements must be maintained. The first triggering device shall be located 5 feet forward of the rifle muzzle and perpendicular to the trajectory of the projectile. The second triggering device

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shall be 10 feet forward of the rifle muzzle. It is mandatory that the 5-foot separation between the first and second triggering devices be maintained to a tolerance of 0.125 inch. The test item shall be 12.5 feet forward of the rifle muzzle and perpendicular to the trajectory of the projectile.

4.7.1.1.6 Ballistic limit protection, BL(P). The projection ballistic limit, BL(P), for each test target material shall be the average of 10 fair impact velocities consisting of the five lowest velocity complete penetrations and the five highest partial penetration velocities provided that the spread for the 10 velocities is not greater than 125 ft/sec. In cases where the zone of mixed results is greater than 125 ft/sec (that is, the highest partial penetration velocity is higher than the lowest complete penetration velocity), the BL(P) shall be the average of 14 fair impact velocities consisting of the seven lowest complete penetration velocities and the seven highest partial penetration velocities. If the 14-round limit cannot be attained within a velocity spread of 150 ft/sec or less, retesting shall be required.

4.7.2 Impact resistance and impact acceleration.

4.7.2.1 Impact resistance. The impact resistance test shall be conducted in accordance with the method and test apparatus of ANSI Z89.1 except as modified herein. The helmet assembly with installed suspension system and chin strap shall be mounted on the applicable size headform in position similar to that in which it would be worn on the user's head. The suspension system shall be positioned to provide the most stable fit possible. The guided impactor shall be dropped from a height which yields the same impact energy as an 8-pound weight dropped from 5 feet (measured from the bottom of the impactor to the impact surface of the helmet). Alternatively, the impactor may be an unguided steel ball approximately 4 inches in diameter and weighing 8 pounds. With an impact energy of 40 ft-lb at the center of the helmet crown, there shall be no fracture of the helmet. The exterior finish shall show no signs of flaking, peeling, loss of adhesion, or other failure of the finish except in the immediate area of impact.

4.7.2.2 Impact acceleration. Impact acceleration testing shall be conducted in accordance with the method and apparatus of ANSI Z 90.1 except as modified herein. Each tested helmet shall be identically impacted in not less than four locations on the helmet. The impact sites shall be above the reference plane and separated from each other by a distance not less than one-sixth of the maximum circumference of the protective headgear. The total input energy shall be 45 ft-lb, based upon the headform/support-arm system mass. Acceptance is based on the maximum value of all the impact results. Any peak acceleration of the test headform, exceeding 150 G's and greater than 6 msec in duration shall be cause for failure.

4.7.3 Water immersion test. The dry weight of the helmet shell shall be determined prior to testing (plus or minus 0.5 ounce). The helmet shell shall then be immersed in sea water (sea water solution shall contain 3 percent sodium chloride and 0.5 percent magnesium chloride) at $64 \pm 18^{\circ}\text{F}$ for not less than 16 hours. The helmet shall then be removed, air dried for 12 ± 1 hours

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in a 50 ± 5 percent relative humidity atmosphere at the same temperature, and weighed again. Weight gain in excess of 3 percent shall be a test failure. The exterior coating shall be examined and any evidence of softening, blistering, or peeling shall be considered a test failure.

4.7.4 Flammability. Specimens for this test may be cut from any portion of the shell. Alternatively, test specimens may be molded using identical materials and fabrication methods as used for the helmet shell. Ten specimens shall be tested. The test shall be conducted in accordance with ASTM D 635, except that the flame shall self-extinguish and the extent of burning shall not reach the 100 millimeter mark on any specimen.

4.7.5 Heat aging. The heat aging procedures shall be performed in the following order:

- (a) The helmet shall undergo initial conditioning of 24 hours at $150 \pm 5^\circ\text{F}$ at a relative humidity of 55 ± 10 percent in an air circulating chamber.
- (b) Immediately following the initial conditioning, the helmet shall be maintained for 24 hours at minus $70 \pm 5^\circ\text{F}$ in an air circulating chamber.
- (c) The helmet shell shall be maintained for 24 hours at $150 \pm 5^\circ\text{F}$ at a relative humidity of 95 to 100 percent.
- (d) Immediately following complete cycling, the helmet shall be allowed to return to ambient conditions of temperature and humidity, and a visual examination of the helmet assembly shall be made to verify that no visible damage has occurred as a result of the heat aging test. Any visible damage shall be cause for a test failure.
- (e) The helmet assembly shall then be tested ballistically as specified in 4.7.1.

4.7.6 Tensile strength of chin strap assembly including posts and screws. The chin strap, assembled onto the helmet using stainless steel screws and posts, shall be tested by suspending the helmet by the center of the chin strap assembly and applying a static load of not less than 130 pounds to the interior of the helmet shell. This load shall be maintained for not less than 1 minute. Test temperature shall be $73 \pm 4^\circ\text{F}$ and relative humidity shall be 50 ± 5 percent. If any portion of the chin strap assembly tears or separates from itself or the helmet shell, the test unit shall fail the test. The stainless steel screws and posts shall be removed and the nylon screws and stainless steel posts inserted. With the helmet suspended as before, an incremental static load shall be applied to the interior of the helmet starting at 100 pounds at increments of 5 pounds. Any nylon screw not conforming to the requirement of 3.4.6 shall be considered a test failure.

4.7.7 Adhesion of finish. To test adhesion of finish, three parallel, straight lines shall be made $1/16$ to $1/8$ inch apart in any direction with a scribe held at 30 ± 5 degrees to the surface tangent. These lines shall be crossed with three additional perpendicular lines $1/16$ to $1/8$ inch apart. This procedure

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produces squares which shall be inspected visually for the requirements of 3.4.7. A slight unevenness of the edges of any square shall not be considered cause for rejection.

5. PACKAGING

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

5.1 Preservation. Preservation shall be level A or commercial, as specified (see 6.2).

5.1.1 Level A. helmet. Each assembled helmet shall be completely wrapped in 1/4-inch thick cellulosic cushioning material in accordance with type II, class B of PPP-C-843. The cushioning pad shall measure 28 inches in length by 24 inches in width. To wrap the helmet assembly, the crown of the helmet shall be placed in the center of the pad with the front edge facing the smaller dimension of the pad. Each corner of the cushioning pad shall then be folded to the inside of the helmet.

5.1.2 Level A. replacement components. Replacement components are:

- (a) Suspension frame assembly (includes suspension frame, head band, suspension webbing, and crown pad with drawstring).
- (b) Chinstrap assembly (includes screw and post set, chinstrap, buckle assembly, and quick-release snap/buckle assembly).
- (c) Shell.

Replacement components shall be packaged in plastic bags in accordance with PPP-B-26. Replacement components shall be packaged one part or one assembly per unit package.

5.1.3 Commercial. Helmets or components shall be preserved to provide adequate protection from physical damage during shipment from the supply source to the first receiving activity. Packaging shall be in accordance with ASTM D 3951.

5.2 Packing. Packing shall be level A, B, or Commercial, as specified (see 6.2).

5.2.1 Level A. helmets. Six helmets preserved as specified in 5.1 shall be packed in a fiberboard shipping container in accordance with style RSC-L, grade V2s of PPP-B-636. The inside of each shipping container shall be fitted with a box liner in accordance with type CF, class weather-resistant, variety DW, grade V15c of PPP-B-636. Helmet assemblies shall be packed three in length, two in width, and one in depth within the shipping container. During the packing operation, the wrapped helmets shall be nested with the back of the helmet resting on the bottom of the shipping container. Inside dimensions of each container shall approximate 36 inches in length, 20-1/2 inches in width, and 7 inches in

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depth. Approximate dimensions are furnished as a guide only. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced in accordance with the appendix of the container specification.

5.2.2 Level A, replacement components. Replacement components shall be packed in overseas-type shipping containers in accordance with PPP-B-636. Replacement components shall be packed 12 to a container. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced in accordance with the appendix of the container specification.

5.2.3 Level B, helmets. Six helmets preserved as specified in 5.1 shall be packed in a fiber board shipping container in accordance with style RSC-L, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. The inside of each container shall be fitted with a box liner in accordance with type CF, class domestic, variety DW, grade 275 of PPP-B-636. Helmets shall be packed three in length, two in width and one in depth within a shipping container. During the packing operation, the wrapped helmets shall be nested with the back of the helmet resting on the bottom of the shipping container. Inside dimensions of each container shall approximate 36 inches in length, 20-1/2 inches in width, and 7 inches in depth. Approximate dimensions are furnished as a guide only. Each shipping container shall be closed in accordance with method II in the appendix of PPP-B-636.

5.2.3.1 Weather-resistant fiberboard containers. When specified (see 6.2), the shipping container shall be a grade-V3c, -V3s, or -V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III in the appendix of that specification.

5.2.4 Level B, replacement components. Replacement components, preserved as specified in 5.1, shall be packed in containers in accordance with PPP-B-636, class weather resistant. Components shall be packed in the same quantities as specified in 5.2.2. Container shall be closed in accordance with method II in the appendix of PPP-B-636.

5.2.5 Commercial packing. Helmets, preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.

5.3 Palletization. When specified (see 6.2), helmets, packed as specified in 5.2, shall be palletized in accordance with type I of MIL-STD-147. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C and D. Pallet patterns shall be in accordance with the appendix of MIL-STD-147. Interlocking of loads shall be effected by reversing the pattern of each course. If a container is of a size which does not conform to any of the pallet patterns in MIL-STD-147, the pallet pattern used shall first be approved by the contracting activity.

5.4 Marking. In addition to any special marking required by the contract (see 6.2), unit packs, shipping containers, and (when applicable) palletized loads shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

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6. NOTES

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

6.1 Intended uses. The Helmet, General Use (MK5 Mod 0), type I is designed to accommodate the simultaneous use of the MK-V or MCU-2/P Gas Mask, or Oxygen Breathing Apparatus (OBA). The Helmet, Phonetalker (MK5 Mod 0), type II is used in conjunction with the Ship Service Sound-Powered Telephone System Headset-Chestset, type SA or its approved equivalent. Both helmet types are intended to protect the head from fragmentation and impact injuries.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification.
- (b) Type required (see 1.2).
- (c) Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- (d) When a first article inspection is required (see 3.2).
- (e) Selection of applicable levels of preservation and packing (see 5.1 and 5.2).
- (f) Whether weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.3.1).
- (g) When palletization is required (see 5.3).
- (h) Any special marking requirements (see 5.4).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DID's) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DoD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

<u>Reference Paragraph</u>	<u>DID Number</u>	<u>DID Title</u>	<u>Suggested Tailoring</u>
3.3.4, 3.3.5, 3.3.6.1, 3.3.6.4, and 3.3.7	DI-MISC-80678	Certification/data report	-----

The above DID's were those cleared as of the date of this specification. The current issue of DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

6.4 First article. When first article inspection is required, the contracting officer should provide specific guidance to offerors whether the item(s) should be a preproduction sample, a first article sample, a first

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production item, a sample selected from the first ____ production items, a standard production item from the contractor's current inventory (see 3.2), and the number of items to be tested as specified in 4.3. The contracting officer should also include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results, and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.5 Standard samples. Standard samples of the Helmet, General Use (MK5 MOD 0), type I or Helmet, Phonetalker (MK5 Mod 0), type II, or components, when furnished, are solely for providing guidance and information to the contractor. Standard samples may be obtained from:

Defense Personnel Support Center
DPSC-FSSD, Bldg. 12-3-D
2800 S. 20th Street
Philadelphia, PA 19101

6.6 NAVSEA approval and direction. Deviations from specified materials, procedures, and requirements and selection of specific alternative materials and procedures require NAVSEA approval or direction. Requests should include supporting documentation.

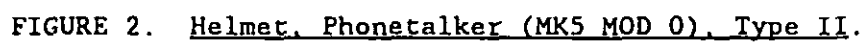
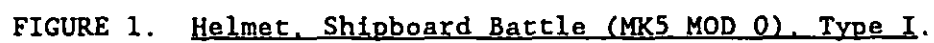
6.7 Sub-contracted material and parts. The packaging requirements of referenced documents listed in section 2 do not apply when material and parts are acquired by the contractor for incorporation into the equipment and lose their separate identity when the equipment is shipped.

6.8 Subject term (key word) listing.

Ballistic protective equipment
Ballistic resistance
Helmet shell
Impact acceleration
Impact liner
Impact resistance
Suspension frame

6.9 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.

Preparing activity:
Navy - SH
(Project 8470-N142)



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Instruction Sheet

HELMET, SHIPBOARD BATTLE (MK 5 MOD 0) TYPE I

EQUIPMENT DESCRIPTION. The helmet is designed to provide the user with head protection from ballistic fragments and impacts. Each helmet is preassembled with a shell, suspension frame and webbing, impact liner, chinstrap assembly, buckle assembly, quick-release buckle/snap assembly, and identification plate. The helmet is also designed to accommodate the simultaneous use of the MK-V or MCU-2/P Gas Mask, or Oxygen Breathing Apparatus (OBA).

FITTING HELMET. Instructions for adjustment are provided as a general guide. A successful fit depends largely on proper positioning of the crown pad and the head band. A snug fit is then achieved by adjusting the chinstrap.

SUSPENSION SYSTEM ADJUSTMENT. Adjust suspension system as follows:

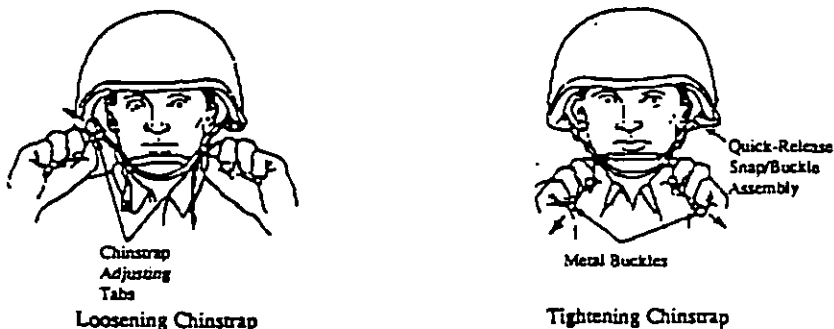
- (a) Place helmet on head to determine which way to adjust. Helmet should be worn and balanced comfortably above ears with 1/2-inch clearance between impact liner and head.
- (b) If helmet sits too high on head, lengthen drawstring behind crown pad to lower helmet. If helmet sits too low, shorten drawstring.
- (c) Using nylon buckle on right side of suspension system, adjust head band until snug around front and sides of head.

CHINSTRAP ADJUSTMENT. With crown pad drawstring and head band properly adjusted, adjust chinstrap as follows:

- (a) Snap quick-release buckle/snap closure together by placing bottom edges together and firmly pressing top edges until they snap together.
- (b) To tighten chinstrap, grasp both adjusting tabs and pull evenly, until sling is snug and centered on chin.
- (c) To loosen chinstrap, grasp bottoms of both metal buckles and pull out, so strap slides through easily.

HELMET FIT CHECK. After helmet is properly adjusted and secured, shake head to ensure helmet does not slip or move. Make additional adjustments if necessary.

REMOVING HELMET. Removing the helmet is accomplished with the quick-release snap fastener. It is designed for one direction opening, by grasping the tab and pulling directly down.

FIGURE 3a. Instruction sheet.

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Instruction Sheet

HELMET, PHONETALKER (MK 5 MOD 0), TYPE II

EQUIPMENT DESCRIPTION. The helmet is designed to provide the user with head protection from ballistic fragments and impacts. Each helmet is preassembled with a shell, suspension frame and webbing, impact liner, chinstrap assembly, buckle assembly, quick-release buckle/snap assembly, and identification plate. The helmet is used with the Ship Service Sound Powered Telephone System Headset-Chestset, type SA or its approved equivalent.

FITTING HELMET. Instructions for adjustment are provided as a general guide. A successful fit depends largely on proper positioning of the crown pad and the head band. A snug fit is then achieved by adjusting the chinstrap.

SUSPENSION SYSTEM ADJUSTMENT. Adjust suspension system as follows:

- (a) Place helmet on head to determine which way to adjust. Helmet should be worn and balanced comfortably above ears with 1/2-inch clearance between impact liner and head.
- (b) If helmet sits too high on head, lengthen drawstring behind crown pad to lower helmet. If helmet sits too low, shorten drawstring.
- (c) Using nylon buckle on right side of suspension system, adjust head band until snug around front and sides of head.

CHINSTRAP ADJUSTMENT. With crown pad drawstring and head band properly adjusted, adjust chinstrap as follows:

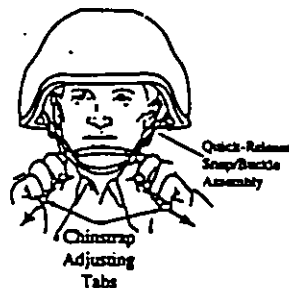
- (a) Snap quick-release buckle/snap closure together by placing bottom edges together and firmly pressing top edges until they snap together.
- (b) To tighten chinstrap, grasp both adjusting tabs and pull evenly, until sling is snug and centered on chin.
- (c) To loosen chinstrap, grasp bottoms of both metal buckles and pull out, so strap slides through easily.

HELMET FIT CHECK. After helmet is properly adjusted and secured, shake head to ensure helmet does not slip or move. Make additional adjustments if necessary.

REMOVING HELMET. Removing the helmet is accomplished with the quick-release snap fastener. It is designed for one direction opening, by grasping the tab and pulling directly down.

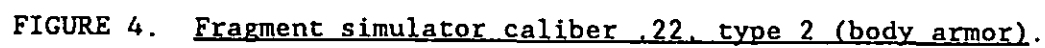


Loosening Chinstrap

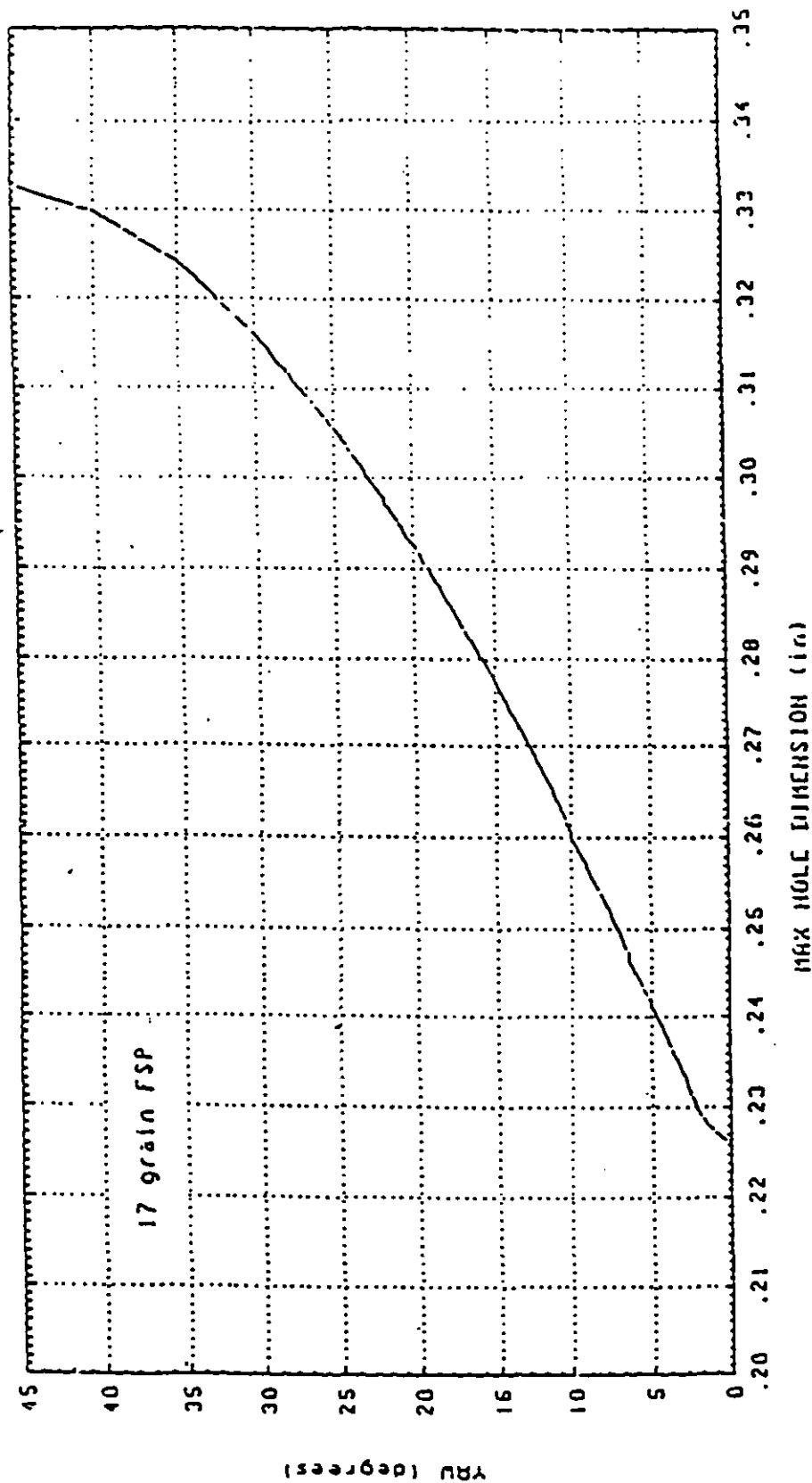


Tightening Chinstrap

FIGURE 3b. Instruction sheet.



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FIGURE 5. Projectile yaw versus maximum hole dimension.

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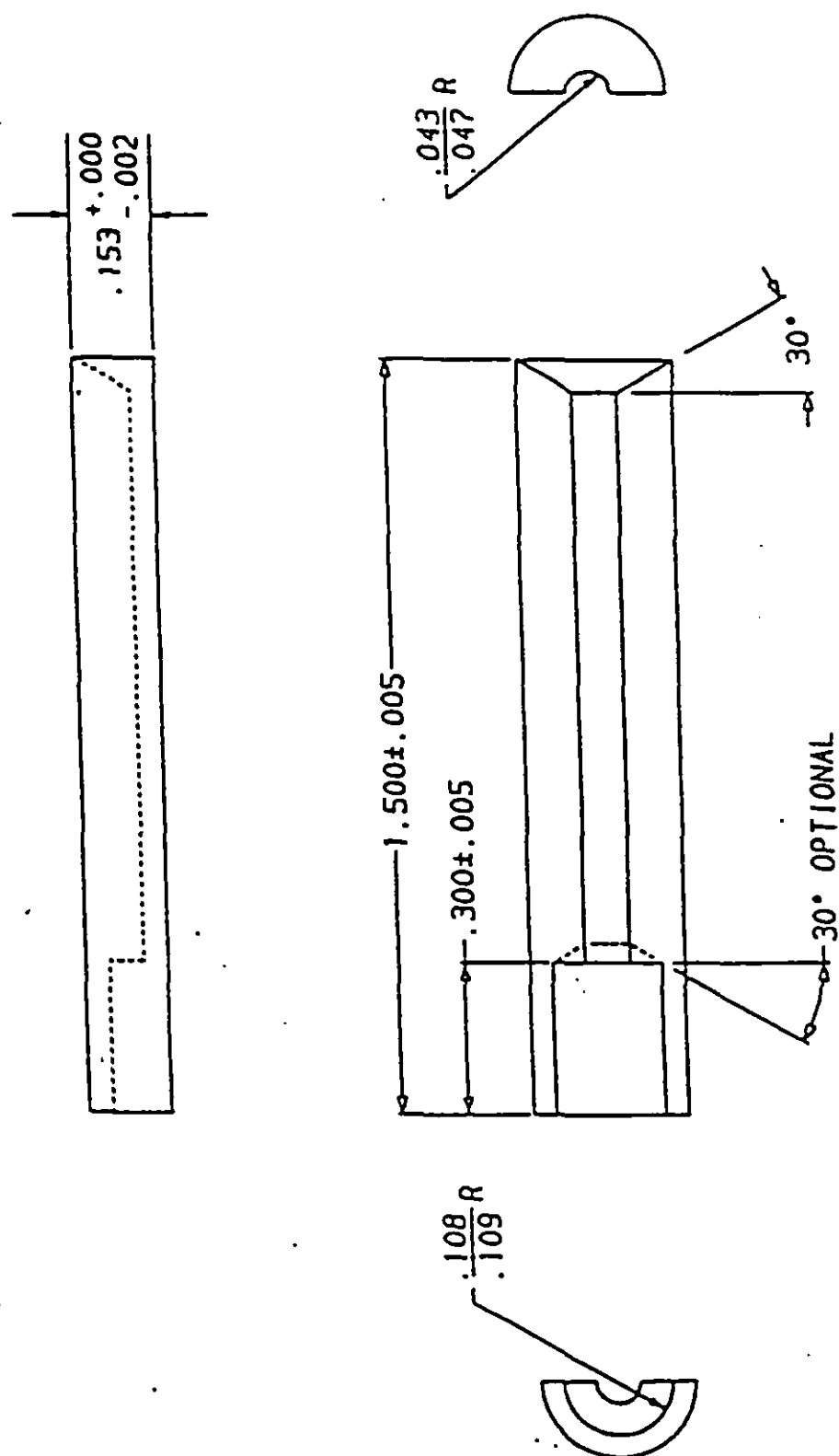


FIGURE 6. Sabot for 17 grain FSP (fragment simulated projectile), injection molded, two halves.

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-H-24616A(SH)

2. DOCUMENT DATE (YYMMDD)
3 March 1994

3. DOCUMENT TITLE
Helmet Naval Shipboard (MK 5 MOD 0)

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)

7. DATE SUBMITTED
(YYMMDD)

(1) Commercial
(2) AUTOVON
(If applicable)

8. PREPARING ACTIVITY

a. NAME

COMMANDER
NAVAL SEA SYSTEMS COMMAND

b. TELEPHONE (Include Area Code)

(1) Commercial (2) AUTOVON
Ms Ulliana 703-602-0324 AV 332-0324

c. ADDRESS (Include Zip Code)

SEA 03R42
2531 JEFFERSON DAVIS HWY
ARLINGTON, VA 22242-5160

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