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MILITARY SPECIFICATION

TELEPHONE, HARDWARE, SOUND POWERED
GENERAL SPECFICATION FOR

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 sound powered telephone hardware for use with sound powered telephone systems in Navy ships

1 2 Classification The sound powered telephone hardware shall be of the following types as specified (see 6 2)

(a) A-17A - Switchbox.
(b) A-19A - Switchbox.
(c) A-26A - Switch-rotary selector
(d) G-15A - Single jackbox.
(e) G-15B - Double jackbox.
(f) G-15C - Four-gang jackbox
(g) H-25A - Sound powered jack.
(h) H-27A - Sound powered jack, panel mounted
(i) H-39A - Sound powered plug
(j) IC/A1 - Switchboard.
(k) IC/TRC - Reel, casuality communication
(l) Z-33 - Handset holder
(m) Cabinet, handset
(n) Telephone/distance line
(o) Hook, handset
(p) Sound powered jack, portable
(q) Stowage box, headset

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

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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)

SPECIFICATIONS

FEDERAL

QQ-S-571 - Solder, Tin Alloy, Tin-Lead Alloy, and Lead Alloy

MILITARY

MIL-S-901 - Shock Test, H I (High Impact), Shipboard Machinery, Equipment and Systems, Requirements For

MIL-P-15024 - Plates, Tags and Bands for Identification of Equipment

MIL-P-15024/5 - Plates, Identification

MIL-T-15514 - Telephone Equipment, Sound Powered Telephone Handset, Headset, and Headset-Noise Attenuating, General Specification For

MIL-E-17555 - Electronic and Electrical Equipment, Accessories, and Provisioned Items (Repair Parts) Packaging of

MIL-L-19140 - Lumber and Plywood, Fire-Retardant Treated

MIL-S-19622 - Stuffing Tubes, Nylon, and Packing Assemblies, General Specification

MIL-R-24049 - Rope, Polyphropylene

MIL-E-24142 - Enclosures for Electrical Fittings and Fixtures, General Specification For

MIL-C-24643 - Cable and Cord, Electrical, Low Smoke for Ship-Board Use, General Specification For.

MIL-T-31000 - Technical Data Packages, General Specification For

STANDARDS

FEDERAL

FED-STD-H28 - Screw Thread Standards For Federal Service

MILITARY

MIL-STD-108 - Definitions of and Basic Requirements for Enclosures for Electric and Electronic Equipment

MIL-STD-167-1 - Mechanical Vibration of Shipboard Equipment (Type I - Environmental and Type II - Internally Excited)

MIL-STD-202 - Test Methods for Electronic and Electrical Component Parts

MIL-STD-454 - Standard General Requirements for Electronic Equipment

MIL-STD-810 - Environmental Test Methods and Engineering Guidelines

MILITARY - Continued

MIL-STD-1277 - Splices, Terminals, Terminal Boards, Binding Posts, Terminal Junction Systems, Wire Caps, Electrical.
MIL-STD-2036 - General Requirements for Electronic Equipment Specifications.

(See supplement 1 for list of associated specifications)

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

2 2 NonGovernment publications. The following document forms a part of this document to the extent specified herein Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation Unless otherwise specified, the issues of documents not listed in the DODISS are the issue of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

B 633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
D 4727 - Standard Specification for Corrugated and Solid and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. (DOD adopted)

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

(NonGovernment standards and other publications are normally available from the organizations 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, specification sheets), 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 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern

3 2 First article When specified (see 6.2), a sample shall be subjected to first article inspection (see 6 3) in accordance with 4 4

3 3 General requirements The sound powered telephone hardware shall be in accordance with the applicable sections of MIL-STD-2036 in addition to the requirements specified herein Whenever a requirement of MIL-STD-2036 conflicts with a requirement of this specification, the requirement of this specification shall govern

3 3.1 Shock. Sound powered telephone hardware shall be subjected to grade A, class 1, light weight, type A shock in accordance with 4 7 2 Upon completion of this test the sound powered telephone hardware shall show no evidence of physical or electrical defects.

3 3 2 Vibration The sound powered telephone hardware shall be subjected to vibrations up to 50 Hertz (Hz) in accordance with 4 7 3 Upon completion of this test the sound powered telephone hardware shall show no evidence of physical or material defects

3 3.3 Random drop The sound powered telephone hardware shall be subjected to the random drop test specified in 4 7 4 Upon completion of this test the sound powered telephone hardware shall show no evidence of breaking, cracking, bending or other physical or electrical damage to the sound powered telephone hardware

3.3.4 Temperature The sound powered telephone hardware shall be subjected to the temperatures of minus 28 degrees Celsius (°C) to plus 65°C in accordance with 4 7 5 Upon completion of this test the sound powered telephone hardware shall show no evidence of physical or electrical defects

3 3.5 Salt fog The sound powered telephone hardware shall be subjected to a 20 percent hot salt spray, and hot air blast in accordance with 4 7 6 Upon completion of this test the sound powered telephone hardware shall show no evidence of corrosion, damage, or leakage due to the salt fog

3 3 6 Dripproof Sound powered telephone hardware requiring a dripproof (45 degrees) enclosure shall be tested in accordance with 4 7 7 Upon completion of this test the enclosure shall show no evidence of liquid penetration

3 3 7 Splashproof Sound powered telephone hardware requiring a splash-proof enclosure shall be tested in accordance with 4 7 8 Upon completion of this test the enclosure shall show no evidence of liquid penetration

3 3.8 Watertight Sound powered telephone hardware requiring a water tight enclosure shall be tested in accordance with 4 7 9. Upon completion of this test the enclosure shall show no evidence of liquid penetration

3 3 9 Insulation resistance The insulation resistance of sound powered telephone hardware shall be not less than 10 megohms when tested in accordance with 4 7 10

3 3 10 Talk demonstration Sound powered telephone hardware shall be subjected to the talk demonstration in accordance with 4 7 11 Two sound powered telephones in accordance with MIL-T-15514, two sound powered jackboxes (see 3 7 4), sound powered jack (see 3 8) shall be provided, as required (see 6 2), by Naval Sea Systems Command Upon completion of this test the sound powered telephone hardware shall have demonstrated the ability to provide clear and understandable two-way communication

3 4 Materials

3 4 1 Recovered materials Unless otherwise specified herein, all material incorporated in the products covered by this specification shall be new Products may be fabricated using raw materials produced from recovered bulk materials to the extent practicable if the intended use of the product is not jeopardized The term "recovered materials" means material 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 partially processed, assembled, used or rebuilt products are allowed under this specification.

3.4 2 Toxic materials The material shall have no adverse effect on the health of personnel when used for its intended purpose. Questions pertaining to this effect shall be referred by the contracting activity to the appropriate departmental medical service who will act as advisor to the contracting activity.

3 4.3 Identification plate The identification plate shall be a type G, style III, basic arrangement in accordance with MIL-P-15024 and MIL-P-15024/5

3.4 4 Information plate An information plate, schematic diagram, shall be provided. The information plate shall be a type G, style I in accordance with MIL-P-15024 and the individual specification sheet

3 4.5 Station plate A removable station plate suitable for engraving shall be provided The station plate shall be a black background with white letters after engraving

3.4.6 Switches. Switches for the sound powered telephone hardware shall have a contact resistance of not greater than 0.010 ohm,life expectancy of 100,000 operations and an environmentalproof seal

3 4 6 1 Toggle switches The toggle switches shall be a standard toggle, double pole single throw, and a 11.913 mm diameter bushing

3.4.6.2 Rotary switch The rotary switch shall be a two pole, 16 position rotary switch

3.4.7 Terminal boards. Terminal boards shall be in accordance with MIL-STD-1277 Terminal boards shall be marked in a clear and permanent manner so as to identify individual terminals. Mounting of the terminal boards shall be in accordance with requirement 19 of MIL-STD-454.

3 4 8 Wiring Wiring shall be insulated, stranded wire, American Wire Gage (AWG) size 20, with a dielectric withstanding voltage of 600 volts Internal wiring shall have sufficient slack to permit removal of covers or panels for maintenance or connection Each circuit shall consist of a black and white twisted pair.

3 4 9 Wire terminals. Solderless wire terminals in accordance with requirement 19 of MIL-STD-454 are preferred. Wires subject to breakage at the connection shall be provided with terminals that grip the wire insulation. Where practical, wires soldered to terminals shall be looped at least once and not more than twice around the terminal before soldering.

3 4 10 Solder Solder shall conform to type S, composition Sn60, of QQ-S-571 for all soldered electrical connections

3 4 11 Workmanship Workmanship shall be in accordance with requirement 9 of MIL-STD-454 (see 4 7 12)

3 5 Switchbox, detailed design

3 5 1 Switchbox The switchbox shall consist of an enclosure (see 3 3 7), toggle switches (see 3 4.6), terminal boards (see 3 4.7), and sound powered jack, panel mount (see 3.9). The switchbox shall be hinged on the bottom with captive screw on the top

3 5 2 Switchbox, A-17A Switchbox, A-17A (10 switches), shall be in accordance with MIL-T-24649/1

3 5.3 Switchbox, A-19A Switchbox, A-19A (20 switches), shall be in accordance with MIL-T-24649/2

3 6 Switch-rotary selector, A-26A, detailed design

3 6 1 Switch-rotary selector, A-26A. The switch-rotary selector, A-26A, shall consist of an enclosure (see 3.3 7), rotary switch (see 3.4.6), terminal boards (see 3 4.7), and a sound powered jack, panel mount (see 3.9) The switch-rotary selector, A-26A, shall be in accordance with MIL-T-24649/3.

3 6 2 Rotary identification. A rotary identification plate, suitable for cut through engraving, to accommodate back lighting (see 3 6 3), and fitted with a t-handle shall be provided

3 6 3 Illumination. When required (see 6.2), illumination shall be provided The rotary identification plate and pointer shall be back lighted by electroluminescents, the color of the lighting shall be red.

3 7 Jackbox, detailed design.

3 7 1 Jackboxes. The jackboxes shall consist of an enclosure (see 3.3 9), terminal boards (see 3 4 7) and one, two, or four, sound powered jacks (see 3.8)

3 7 2 Enclosure. The enclosure shall be in accordance with MIL-E-24142 The enclosure for a single or double jackbox shall be manufactured from metal or composite materials, and shall be a type 3R, and for a four-gang jackbox shall be a type 4R

3 7.3 Single jackbox, G-15A The single jackbox, G-15A, shall be in accordance with MIL-T-24649/4

3 7 4 Double jackbox, G-15B. The double jackbox, G-15B, shall be in accordance with MIL-T-24649/5

3.7 5 Four-gang jackbox, G-15C The four-gang jackbox, G-15C, shall be in accordance with MIL-T-24649/6

3 8 Sound powered jack, H-25A, detailed design.

3 8 1 Sound powered jack The sound powered jack, H-25A, shall be in accordance with MIL-T-24649/7

3 8 2 Compatibility The sound powered jack shall be compatible in fit and function with the sound powered plug (see 3 10)

3 8 3 Dielectric withstanding voltage The sound powered jack shall withstand not less than 500 volts root mean square (rms) without dielectric breakdown or flashover (see 4 7 13)

3 8.4 Contact resistance. The sound powered jack contact resistance shall not be greater than 0.02 ohm (see 4.7.14) Contact resistance shall be measured before and after the application of current

3 9 Sound powered jack, panel mounted, H-27A, detailed design

3.9 1 Sound powered jack, panel mounted. The sound powered jack, panel mounted, H-27A, shall consist of sound powered jack (see 3.8) and a mounting plate The sound powered jack, panel mounted, shall be in accordance with MIL-T-24649/8

3 10 Sound powered plug, H-39A, detailed design

3 10 1 Sound powered plug. The sound powered plug, H-39A, shall be in accordance with MIL-T-24649/9.

3 10.2 Compatibility The sound powered plug shall be compatible in fit and function with the sound powered jack (see 3 8).

3 10.3 Dielectric withstanding voltage The sound powered plug shall withstand not less than 500 volts rms without dielectric breakdown or flashover (see 4 7 13)

3 10 4 Contact resistance The sound powered jack contact resistance shall be not greater than 0 02 ohm (see 4 7.14). Contact resistance shall be measured before and after the application of current

3.10 5 Conductor strain relief. Provisions for anchoring a stay cord to provide strain relief for the conductors of the electrical cable shall be included in the plug. All edges of the anchor in contact with the stay cord shall be rounded The stay relief shall not damage or cut the conductors or stay cord (see 4 7 15)

3 11 Switchboard, IC/A1, detailed design

3 11 1 Switchboard The switchboard, IC/A1, shall be greater than or equal to one panel assembly (see 6 2), top assembly, and bottom assembly in accordance with MIL-T-24649/10

3 11 2 Panel assembly. The panel assembly shall be hinged on the left and secured by two captive thumb screws on the right The panel assembly top and bottom shall be open to permit stacking panel assemblies. The front of the panel shall contain 31 audio jacks, 30 toggle switches (see 3.4 6), and a sound powered jack, panel mount (see 3 9) The rear of the panel shall consist of terminal boards in accordance with 3 4 7

3 11 3 Top assembly The top assembly shall form the top of the switchboard and shall provide foundations for sway bracing

3 11 4 Bottom assembly The bottom assembly shall form the bottom of the switchboard and shall provide foundations for secure mounting

3 11 5 Audio jacks The audio jacks shall be a three conductor, open circuit jack with a 9 525 mm diameter bushing and accept a three circuit plug (see 3 11 6 1)

3 11 6 Patch cables Three patch cables shall be provided with each panel assembly Patch cables shall be 609 6 mm long, terminated at each end with a three circuit plug

3 11.6.1 Plug. Plug shall be a three circuit; 6.35 mm diameter shaft, with shielded handle and be compatible with audio jack (see 3.11.5)

3 12 Reel, casualty communication, IC/TRC, detailed design

3 12 1 Reel The reel, casualty communication, IC/TRC, shall be capable of stowing 60 96 mm of two conductor, insulated wire, terminated at each end with a sound powered jack, portable (see 3 17) and sound powered plug (see 3 10) The reel shall be in accordance with MIL-T-24649/11.

3 12 2 Wire The two conductor wires shall be LSMRI-D-1 in accordance with MIL-C-24643, color of the outer jacket shall be orange

3 13 Handset holder, Z-33, detailed design

3 13 1 Handset holder The handset holder, Z-33, shall be in accordance with MIL-T-24649/12

3 13 2 Compatibility The handset holder shall be compatible with the sound powered handset, MIL-T-15514 The handset holder shall be capable of retaining the handset during the shock test (see 3 3 1) A sound powered telephone handset in accordance with MIL-T-15514 shall be provided by the Naval Sea Systems Command (see 6 2)

3 14 Cabinet, handset, detailed design

3 14 1 Cabinet The cabinet shall consist of an enclosure (see 3.3.8) for a handset holder (see 3.13), sound powered jack, panel mount (see 3 9), stuffing tubes, and terminal board (see 3 4 7) The enclosure shall be hinged on the left and secured with a captive screw on the right The cabinet shall be in accordance with MIL-T-24649/13.

3 14 2 Stuffing tubes Stuffing tubes shall be nylon, size 1, in accordance with MIL-S-19622

3 15 Telephone/distance line, detailed design

3 15 1 Telephone/distance line The telephone/distance line shall consist of a rope, hooks, distance markers, and double jackbox (see 3.7) The telephone/distance line shall be in accordance with MIL-T-24649/14

3 15 2 Rope The rope shall be 38 1 mm in circumference, polyphroplene, type 1, in accordance with MIL-R-24049 Each strand shall be woven around a twisted pair, insulated copper wire (see 3 4 8)

3 15 3 Hooks The hooks shall be 165 1 mm long, snap type, with a shear strength of 2721 kg

3 15 4 Distance markers The distance markers shall be nylon and vinyl cloth with a minimum weight not less than 9 07 kg Color shall be as specified in MIL-T-24649/14

3 16 Hook, headset, detailed design

3 16 1 Hook The hook shall provide a means of securing sound powered telephone headsets, in accordance with MIL-T-15514 The hook shall be in accordance with MIL-T-24649/15

3 17 Sound powered jack, portable, detailed design

3 17 1 Sound powered jack, portable. The sound powered jack, portable, shall consist of sound powered jack, panel mount (see 3.9) and a water tight body (see 3.3.8) The sound powered jack, portable, shall be in accordance with MIL-T-24649/16

3 18 Stowage box, headset, detailed design.

3 18.1 Stowage box. The stowage box shall provide a suitable enclosure (see 3 3 6) for sound powered telephone headsets, in accordance with MIL-T-15514, and consist of one to six compartments (see 6.2) The stowage box shall be in accordance with MIL-T-24649/17

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 the 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 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 inspection The inspection requirements specified herein are classified as follows.

(a) First article inspection (see 4.4).
(b) Quality conformance inspection (see 4 5).

4 3 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the test conditions specified in 4 7 1

4 4 First article inspection. Ten of each type of the sound powered telephone hardware covered by this specification shall be subjected to all the applicable examinations and tests specified in MIL-STD-2036. Examinations and tests shall be performed in general, in the order listed The sound powered telephone hardware subjected to first article inspection shall be tested in accordance with 4 7

4 5 Quality conformance inspection Quality conformance inspection shall be as specified in table I

TABLE I Quality conformance inspection

Inspection	Requirement	Test
Group A		
General requirements	3 3	4 4
Insulation resistance	3 3.9	4 7.10
Talk demonstration	3 3 11	4 7 11
Workmanship	3 4 11	4 7 12
Group B		
General requirements	3.3	4 4
Insulation resistance	3.3.9	4 7.10
Talk demonstration	3.3.11	4 7 11
Dielectric withstanding voltage	3 8 3, 3.10 3	4.7.13
Contact resistance	3 8.4, 3 10.4	4.7 14
Strain relief	3.10 5	4 7 15
Group C		
Shock	3 3 1	4 7 2
Vibration	3 3 2	4.7 3
Random drop	3 3 3	4.7.4
Temperature	3 3.4	4 7 5
Salt fog	3.3.5	4 7 6
Dripproof	3 3 6	4 7 7
Splashproof	3 3 7	4.7.8
Watertight	3.3 8	4.7 9

4 5 1 Definition of a lot For the purpose of quality conformance inspection and test sampling, a lot is defined as all the sound powered telephone hardware of the same type and size, produced in one facility, using the same production processes and materials, and being offered for delivery at one time

4 5 2 Sampling for quality conformance inspection. As a minimum, the contractor shall randomly select a sample quantity from each lot of completed sound powered telephone hardware in accordance with table II and inspect them in accordance with table I Sound powered telephone hardware for group A inspection shall be selected in accordance with table II sampling plan A Telephone hardware for group B inspection shall be selected in accordance with table II sampling plan B Telephone hardware for group C inspection shall be selected in accordance with table II sampling plan C If one or more defects are found in any sample, the entire lot represented by the sample shall be rejected If a lot is rejected, the contractor has the option of screening 100 percent of the lot for the defective characteristic(s) or providing a new lot which shall be inspected in accordance with the sampling plans contained herein The contractor shall maintain for a period of three years after contract completion all records of inspections, tests, and any resulting rejections

TABLE II Sampling for quality conformance inspection

Lot size	Plan A	Plan B	Plan C
2 to 8	All	3	2
9 to 25	8	3	2
26 to 50	8	5	3
51 to 90	8	6	4
91 to 150	12	7	5
151 to 280	19	10	6
281 to 500	21	11	7
501 to 1200	27	15	8
1201 to 3200	35	18	9

4 6 Surface examination. The sound powered telephone hardware shall be visually examined, internally and externally, to ensure compliance with all the general requirements specified herein in regard to size, fit, finish, marking, safety, and workmanship

4 7 Performance tests

4 7 1 Test conditions All measurements and tests shall be made at a temperature of 23°C ± 2°C (73°F ± 4°F), air pressure of 650 to 800 millimeters of mercury and relative humidity of 50 ± 2 percent

4.7 2 Shock The sound powered telephone hardware shall be subjected to the shock test in accordance with MIL-S-901. The sound powered telephone hardware shall be mounted in its normal operating position on the test platform Upon completion of the above test the sound powered telephone hardware shall comply with 3 3.1

4 7 3 Vibration The sound powered telephone hardware shall be subjected to a type I vibration test in accordance with MIL-STD-167-1. The sound powered telephone hardware shall be mounted in its normal operating position on the test platform Upon completion of the above test the sound powered telephone hardware shall comply with 3.3.2.

4 7 4 Random drop The sound powered telephone hardware shall be dropped six times from a height of four feet on to a concrete floor Upon completion of the above test, the sound powered telephone hardware shall comply with 3.3.3

4 7 5 Temperature. The sound powered telephone hardware shall be subjected to the high temperature test of MIL-STD-810, method 501 2, and low temperature test of MIL-STD-810, method 502 2. The sound powered telephone hardware shall be mounted in its normal operating position on the test platform Upon completion of the above test the sound powered telephone hardware shall comply with 3 3 4

4.7.6 Salt fog. The sound powered telephone hardware shall be subjected to the salt fog test in accordance with procedure II of MIL-STD-2036 The sound powered telephone hardware shall be mounted in its normal operating position on the test platform. Upon completion of the above test the sound powered telephone equipment shall comply with 3 3 5

4 7 7 Dripproof The sound powered telephone hardware shall be subjected to the dripproof test in accordance with MIL-STD-108 The sound powered telephone hardware shall be mounted in its normal operating position on the test platform Upon completion of the above test the sound powered telephone hardware shall comply with 3 3 6.

4 7 8 Splashproof The sound powered telephone hardware shall be subjected to the splashproof test, with or without the sound powered telephone jack cover in place, in accordance with MIL-STD-108 The sound powered telephone hardware shall be mounted in its normal operating position on the test platform. Upon completion of the above test the sound powered telephone hardware shall comply with 3 3.7

4 7 9 Watertight The sound powered telephone hardware shall be subjected to the watertight test in accordance with MIL-STD-108 Upon completion of the above test the sound powered telephone hardware shall comply with 3 3 8

4 7 9 1 Jackbox The jackbox shall be tested with or without the jack covers in place

4 7 9.2 Sound powered jack The sound powered jack shall be tested with the cover in place.

4 7 9 3 Sound powered plug The sound powered plug shall be tested while mated with a sound powered jack and the cable entrance plugged

4 7 9 4 Sound powered jack, portable The sound powered jack, portable, shall be tested with the cover in place and the cable entrance plugged

4 7 9 5 Cabinet, handset The cabinet, handset shall be tested with or without the jack covers in place

4 7 10 Insulation resistance The sound powered telephone hardware shall be subjected to the insulation resistance test Insulation resistance of the sound powered telephone hardware shall be measured with a high quality 50 volts direct current (Vdc) megger The measurement shall be made between each conductor and ground, and between the conductors Upon completion of the above test the sound powered telephone hardware shall comply with 3 3 9

4 7 11 Talk demonstration The sound powered hardware shall be subjected to the talk demonstration test. Twenty percent of the sound powered circuits shall be randomly selected One person shall transmit a randomly selected phrase or words, the listener shall repeat the phrase or words accurately upon completion of the transmission The transmission of the words or phrase shall be by sound powered telephone Upon completion of the above test the sound powered telephone hardware shall comply with 3 3 10

4 7 11 1 Switchbox A sound powered circuit for the talk demonstration shall be established between the terminal board and the sound powered jack Connection to the terminal board shall be by a jumper consisting of a sound powered jack (see 3 9) with 457 mm leads terminated with terminal lugs

4 7 11.2 Switch-rotary selector A sound powered circuit for the talk demonstration shall be established between the terminal board and the sound powered jack Connection to the terminal board shall be by a jumper consisting of a sound powered jack (see 3 9) with 457 mm leads terminated with terminal lugs

4 7.11 3 Switchboard. A sound powered circuit for the talk demonstration shall be established between the terminal board and the sound powered jack Connection to the terminal board shall be by a jumper consisting of a sound powered jack (see 3 9) with 457 mm leads terminated with terminal lugs. Switchboard patch cables shall be used to complete the sound powered circuit between the sound powered jack and the audio jack

4 7 11.4 Reel, casuality communication. A sound powered circuit for the talk demonstration shall be established between the sound powered phone plugs Connection to the plugs shall be made via sound powered jackboxes (see 3 7 4).

4.7 11.5 Telephone/distance line A sound powered circuit for the talk demonstration shall be established between the sound powered jackboxes.

4 7 12 Workmanship Workmanship shall conform to requirement 9 of MIL-STD-454 (see 3 4.11)

4 7 13 Dielectric withstanding voltage. The sound powered jacks or plugs shall be subjected to the dielectric withstanding voltage test in accordance with MIL-STD-202 method 301 Upon completion of the above test the sound powered jacks or plugs shall comply with 3.8.3 or 3.10.3 as applicable

4.7 14 Contact resistance. The sound powered jacks or plugs shall be subjected to the contact resistance test. The sound powered jack or plug shall be inserted into the mating plug or jack six times to ensure the contacts are clean A current of 100 ± 2 milliamperes at 500 millivolts shall flow through the contacts under test for 60 seconds The contact resistance shall be measured between each plug terminal and corresponding jack terminal at the point of normal connection. Upon completion of the above test the sound powered jacks or plugs comply with 3 8 4 or 3 10 4 as applicable

4 7 15 Conduction strain relief. The sound powered plug shall be terminated to the specified cable for the sound powered telephones, in accordance with MIL-T-15514. A force of 50 pounds shall be applied in a longitudinal direction for five minutes. Upon completion of the above test the cable for the sound powered telephone shall comply with 3.10 5

4 7 16 Inspection of packaging Sample packages and the inspection of packaging (preservation, packing and marking) for shipment, stowage and storage shall be in accordance with the requirements of section 5 and the documents specified therein

5 PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisitions For the extent of applicability of the packaging or preparation for delivery requirements of referenced documents listed in section 2, see 6 7)

5 1 Packaging requirements The packaging (preservation, packing and marking) requirements shall be in accordance with MIL-E-17555 for the level of preservation, the level of packing, including marking and packaging acquisitioning options therein, as specified (see 6 2) In addition, for Navy

acquisitions, the following applies

(a) Navy fire retardant requirements.

(1) Lumber and plywood Unless otherwise specified (see 6 2), all lumber and plywood including laminated veneer materials used in shipping container and pallet construction, members, blocking, bracing, and reinforcing shall be fire-retardant treated materials conforming to MIL-L-19140 as follows.

Level A and B - Type II - weather resistant
Category 1 - general use
Level C - Type I - nonweather resistant.
Category 1 - general use

(2) Fiberboard Fiberboard used in the construction of interior (unit and intermediate) and exterior fiberboard boxes including interior packaging forms shall conform to the class domestic/fire-retardant or class-weather resistant/fire-retardant material requirements as specified (see 6.2), of ASTM D 4727

6 NOTES

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

6 1 Intended use The sound powered hardware covered by this specification is intended primarily for shipboard use.

6 2 Acquisition requirements Acquisition documents must specify the following

(a) Title, number and date of this specification.
(b) Type of equipment 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) Quantity of each item required.
(e) Whether first article is required (see 3 2)
(f) Whether lighting is required (see 3.6 3)
(g) Number of panel assemblies (see 3.11)
(h) Lighting requirements (see 3 15)
(i) Number of compartments required (see 3 18)
(j) Level of preservation, level of packing and other packaging options required (see 5 1)
(k) When fire-retardant lumber or plywood is not required (see 5 1(a)(1)
(l) Class of fire-retardant fiberboard required (see 5 1(a)(2)
(m) Government furnished property (see 6.2.1)

6 2 1 Government furnished property The contracting officer should arrange to furnish the property listed in 3 3 10 and 3 13 2

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 (DIDs) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are

requested/provided and that the DIDs 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

Reference Paragraph	DID Number	DID Title	Suggested tailoring
3 3 2, 4 7 2	DI-ENVR-80708	Shock Test Report	MIL-S-901D
3 3 3, 4 7 3	UDI-T-23762	Report, Vibration Testing	
or	DI-SAFT-81128	Vibration Test Data	
6.5	DI-DRPR-81000	Product Drawings and Associated Lists	MIL-T-31000

The above DIDs 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 DIDs 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 items should be a preproduction sample, a first article sample, a first production item, a sample selected from the first 10 production items, a standard production item from the contractor's current inventory, and the number of items to be tested as specified in 4 7 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 of 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 4 1 First article samples First article samples that have passed the first article inspection specified in 3 2 are not to be considered for shipboard installation regardless of the degree of refurbishment required, unless otherwise directed by NAVSEA. Unless otherwise directed by NAVSEA, the passed first article samples are to be retained by the first article test facility for future reference

6 5 Provisioning Provisioning technical documentation (PTD), spare parts, and repair parts shall be furnished as specified in the contract

6 5 1 Spare parts When ordering spare parts or repair parts for the equipment covered by this specification, the contract should state that such spare parts and repair parts should meet the same requirements and quality assurance provisions as the spares used in the manufacture of the equipment Packaging for such parts should also be specified

6 6 Subcontracted material and parts The packaging or preparation for delivery 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 7 Subject term (key word) listing

Identification plate
Jackboxes
Switches
Terminal boards
Wire terminals

6 8 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 activty
Navy - SH
(Project 5935-N457)

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 revisio 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 c requirements on current contracts Comments submitted on this form do not constitute or imply authorization t waive any portion of the referenced document(s) or to amend contractual requirements

I RECOMMEND A CHANGE:	1 DOCUMENT NUMBER	2 DOCUMENT DATE (YYMMDD)
	MIL-T-24649A(SH)	94/06/10

3 DOCUMENT TITLE

TELEPHONE, HARDWARE, SOUND POWERED GENERAL SPECIFICATION FOR

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

5 REASON FOR RECOMMENDATION

6. SUBMITTER

a NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c ADDRESS (Include Zip Code)	d TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	7 DATE SUBMITTED (YYMMDD)

8 PREPARING ACTIVITY TECHNICAL POINT OF CONTACT (TPOC).

a NAME	b TELEPHONE (Include Area Code) (1) Commercial	(2) AUTOVON
Mr. S Kuniyoshi Sea 03K311 PLEASE SEND ALL CORRESPONDENSE TO:	(703)602-7191	8-332-7191
c ADDRESS (Include Zip Code) Commander, Naval Sea Systems Command 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 403 Falls Church VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	

DD Form 1426 OCT 89