

MIL-L-81745B  
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SUPERSEDING  
MIL-L-81745A(AS)  
23 September 1977

## MILITARY SPECIFICATION

### LAUNCHER CONTAINER, "A" SIZE SONOBUOY LAU-126/A

This specification is approved for use by the Naval Air 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 establishes the design, performance and acceptance requirements for the "A" size Sonobuoy Launcher Container LAU-126/A, herein referred to as the SLC. The SLC functions as a launcher and storage container for "A" size sonobuoys and other "A" size stores weighing between 10 and 40 pounds (4.5 and 18.1 kg).

#### 2. APPLICABLE DOCUMENTS.

##### 2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this specification to the extent specified herein.

**Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Engineering Center, Systems Engineering and Standardization Department (SESD) Code 93, Lakehurst, NJ 08733, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.**

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

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## MIL-L-81745B

## SPECIFICATIONS

Federal

PPP-T-60	Tape, Packaging, Waterproof
PPP-T-97	Tape, Pressure-Sensitive Adhesive, Filament Reinforced

Military

MIL-D-3464	Desiccants, Activated, Bagged, Packaging Use and Static Dehumidification
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## STANDARDS

Federal

FED-STD-H28	Screw-Thread Standards for Federal Services
DoD-STD-480	Configuration Control - Engineering Changes, Deviations, and Waivers

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
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2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein.

## DOCUMENTS

U.S. Government Printing Office, Washington, DC

49CFR	Combined Federal Register, Title 49
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Naval Weapons Support Center, Crane, IN

3043-ETP-1923	Environmental Test Procedure for Sonobuoy Launcher Containers, Shipping and Storage Containers, and Pallets
STF-TP-101, Vol III	Manual of Sonobuoy Test Procedures, "A" Size Store Packaging Test Procedures
STF-7056-2	Ballistic Test Procedure for Sonobuoy Launcher Containers with "A" Size Store

## MIL-L-81745B

Naval Avionics Center, Indianapolis, IN

SPD-15	Production Sonobuoy Program Marking Requirements
SPD-16	Product Assurance Requirements for Pilot-Production/Production Sonobuoy Procurements by NAC

## DRAWINGS

Naval Avionics Center, Indianapolis, IN

NAVAIR 1458AS104	Bayonet Base
NAVAIR 1458AS120	SLC Internal Interface

Naval Air Development Center, Warminster, PA

TE21077	Envelope Control Drawing for "A" Size Store Launcher Systems
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(Copies of specifications, standards, handbooks, drawings, and publications required by the manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

Underwriters Laboratories (UL)

UL 94	Tests for Flammability of Plastic Materials for Parts in Devices and Appliances
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(Application for copies should be addressed to Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

### 3. REQUIREMENTS.

3.1 First article. When specified in the contract, a sample of SLC's shall be subjected to first article inspections (see 4.4, 6.2.1 and 6.3).

## MIL-L-81745B

3.2 Product configuration identification (PCI). The SLC is designated as a configuration item, which requires PCI in the form of technical documentation. The documentation shall be used as the basis for configuration control in accordance with DoD-STD-480. The technical documentation shall consist of specifications and detailed production drawings under the custody and control of the contractor. The contractor shall prepare engineering change proposals, waivers, or deviations, whenever changes to the approved PCI are necessary, for acceptance by the procuring activity in accordance with the contract (see 6.2.2). The approved PCI shall be restricted to use with stores of equal or less weight as compared to the stores used in determining the approved PCI. The approved PCI shall be determined as follows:

a. The contractor shall establish a preliminary PCI upon submission of first article samples. The approved PCI shall be the documented configuration of the approved first article inspection samples.

b. When first article inspections are not required, the approved PCI shall be the documented configuration of the last acceptable lot produced on the previous contract.

### 3.3 Reliability.

3.3.1 Reliability program. The contractor shall conduct a reliability program for initiating failure reports, analyzing failures, and implementing corrective actions in accordance with the contract (see 6.2.1).

3.3.2 Quantitative requirements. The probability of operation in accordance with the requirements of this specification shall be not less than 90 percent for non-safety related requirements as demonstrated during aircraft launch tests. Unsafe operation shall result in lot rejection during aircraft launch tests.

3.3.3 Failure reporting and corrective action. The contractor shall initiate failure reports, analyze failures, and implement corrective actions for failures encountered in quality conformance inspections and performance maintenance inspections. The contractor shall prepare failure analysis reports, whenever failures are encountered in aircraft launch tests or performance maintenance inspections, for acceptance by the procuring activity in accordance with the contract (see 6.2.2).

3.4 Service conditions. The SLC, with store installed, shall meet the requirements of this specification when exposed to any non-conflicting combination or sequence of service conditions specified in 3.4.1 through 3.4.3.3.

#### 3.4.1 Storage service conditions.

3.4.1.1 Storage life. Exposure to any temperature and humidity condition defined by the crosshatched area of Figure 1 for five years.

3.4.1.2 90 day tropical exposure. Exposure to tropical weather conditions at the Sonobuoy Quality Assurance Facility (SQAF), St. Croix, U.S. Virgin Islands, unprotected in outside storage for a period of 90 days, in accordance with the procedures of 3043-ETP-1923 for 90 day tropical exposure testing.

MIL-L-81745B

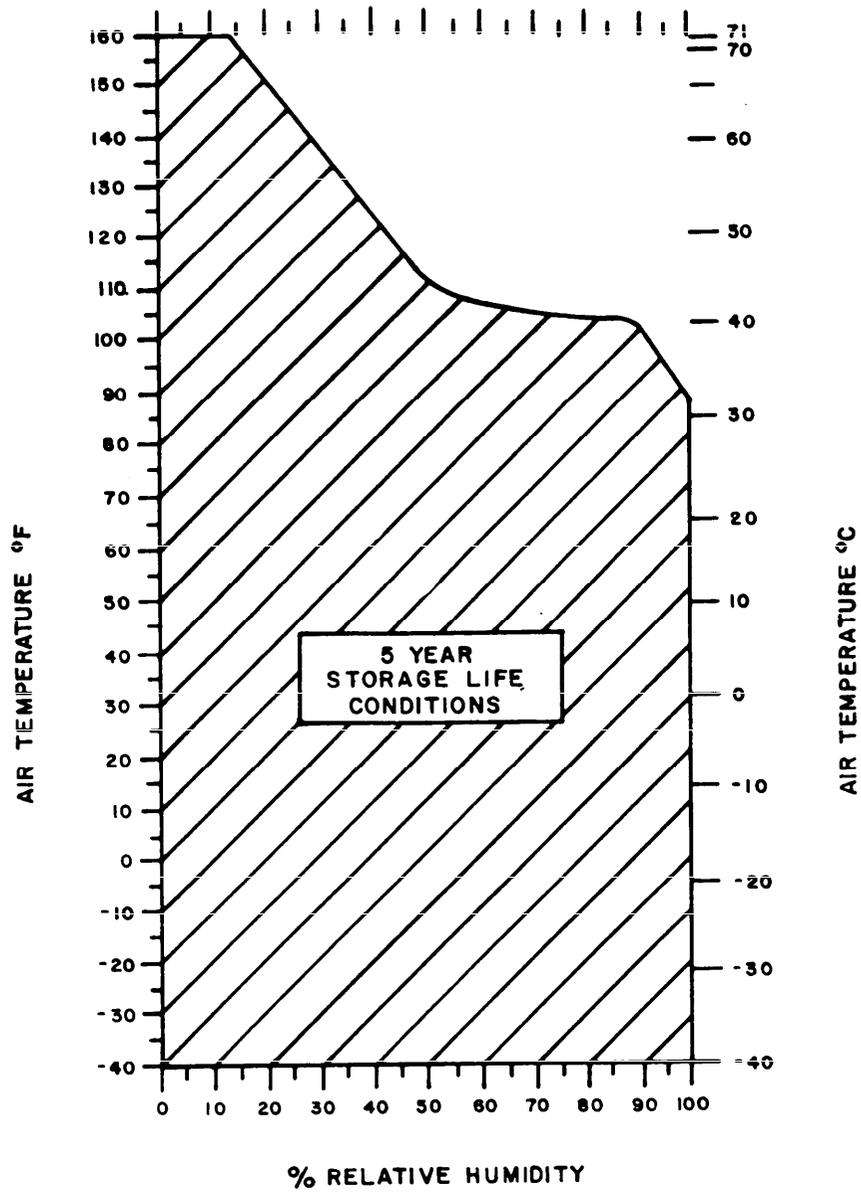


FIGURE 1. Temperature and humidity conditions.

## MIL-L-81745B

3.4.1.3 Accelerated environmental exposure. Exposure to four cycles of the following series of environments followed by a fifth cycle of exposure to a temperature of +160°F (+71°C) for two hours and exposure to a temperature of -25°F (-32°C) for two hours in accordance with the procedures of 3043-ETP-1923 for accelerated environmental exposure.

a. Temperature. Exposure to a temperature of +160°F (+71°C) for three hours followed by exposure to a temperature of -87°F (-66°C) for three hours in accordance with the procedures of 3043-ETP-1923 for temperature testing.

b. Simulated rainfall. Exposure to simulated rainfall of four inches per hour rate for one hour in accordance with the procedures of 3043-ETP-1923 for simulated rainfall testing.

c. Ultraviolet light. Exposure to two 275 watt sunlamps positioned 15 inches above the SLC for 16 hours in accordance with the procedures of 3043-ETP-1923 for ultraviolet light exposure.

3.4.1.4 Fungus. Exposure to fungus cultures at a temperature of +84°F (+29°C) combined with 95 percent relative humidity for 14 days in accordance with the procedures of 3043-ETP-1923 for fungus testing.

3.4.1.5 Salt atmosphere. Exposure to a salt fog atmosphere prepared from a five percent salt solution at a temperature of +95°F (+35°C) for 48 hours in accordance with the procedures of 3043-ETP-1923 for salt spray testing.

3.4.1.6 Water vapor transmission rate (WVTR). Exposure to a temperature of +100°F (+38°C) and 95 percent relative humidity for 68 hours in accordance with the procedures of 3043-ETP-1923 for WVTR testing. Moisture transmitted into the SLC shall be not greater than .2 gm/100 sq.in./24 hours (3.1 gm/sq.m/24 hours).

3.4.1.7 Horizontal and vertical stacking. Exposure to storage when the SLC is horizontally stacked between stanchions up to 10 units high or vertically stacked in bayonet base pallets up to four pallets high.

a. Horizontal. SLC units horizontally stacked 10 units high for stores weighing 30 pounds and less and six units high for stores weighing 31 to 40 pounds. The SLC shall be exposed to a temperature between -40°F (-40°C) and +160°F (+71°C) for 48 hours in accordance with the procedures of 3043-ETP-1923. There shall be no cracking or breaking of the SLC.

b. Vertical. A vertical SLC unit loaded with 200 pounds force on the muzzle end and retained at the breech end in a Bayonet Base as defined by Drawing 1458AS104. The SLC shall be exposed to a temperature between -40°F (-40°C) and +160°F (+71°C) for 48 hours in accordance with the procedures of 3043-ETP-1923. There shall be no cracking or breaking of the SLC.

3.4.2 Handling service conditions.

3.4.2.1 Water leakage. Submersion, horizontally to a depth of approximately one inch, into +120°F (+49°C) water for six minutes, in accordance with the procedures of 3043-ETP-1923 for hot water leak testing. There shall be no

## MIL-L-81745B

continuous evolution of bubbles from any surface or the presence of any water inside the SLC.

3.4.2.2 Tip over. (Note: This paragraph applies only when the store weighs 30 pounds (13.6 Kg) or less.) The SLC tipped, from standing upright on either end and stabilized at a temperature between -25°F (-32°C) and +160°F (+71°C), onto a flat concrete surface. The SLC shall be accelerated by gravity and shall contact the concrete surface along its side in accordance with the procedures of 3043-ETP-1923 for tipover testing. There shall be no cracking or breaking of the SLC or denting of the sonobuoy. Stress whitening of plastic is acceptable except in the breech wall.

3.4.2.3 End drop. (Note: This paragraph applies only when the store weighs 30 pounds (13.6 Kg) or less.) The SLC dropped, from 11 inches (27.9 cm) with either end down and stabilized at a temperature between -25°F (-32°C) and +160°F (+71°C), onto a flat concrete surface. The SLC shall be accelerated by gravity and shall contact the concrete surface on its end in accordance with the procedures of 3043-ETP-1923 for drop testing. There shall be no cracking or breaking of the SLC or denting of the sonobuoy. Stress whitening of plastic is acceptable except in the breech wall.

### 3.4.3 Aircraft service conditions.

3.4.3.1 Aircraft conditions. Exposure to temperatures between -68°F (-56°C) and +128°F (+53°C) and atmospheric pressures between sea level and that equal to 40,000 feet (12,192 meters) altitude for transporting the store and 30,000 feet (9,144 meters) altitude for launching the store. Exposure to vibration and shock as encountered in P-3C, S-3A, SH-2F, and SH-60B operation.

3.4.3.2 Accelerated temperature and altitude exposure. Exposure to temperatures between -68°F (-56°C) and +128°F (+53°C) at an atmospheric pressure equal to sea level for periods of time between six and 18 hours, exposure to a temperature of -68°F (-56°C) at an atmospheric pressure equal to 40,000 feet (12,192 meters) altitude for a maximum of three hours, and exposure to a temperature of +95°F (+35°C) at an atmospheric pressure equal to 40,000 feet (12,192 meters) altitude for a maximum of two hours in accordance with the procedures of 3043-ETP-1923 for temperature and altitude testing. Total test time shall be a maximum of 65 hours.

3.4.3.3 Accelerated vibration exposure. Exposure to random vibration, at power spectral densities and frequencies specified by Figure 2, in three mutually perpendicular axes for a total of three hours. The SLC, with an expended JAU-1/B initiator installed, shall be installed in a simulated aircraft launcher mounted at a 45° angle in accordance with the procedures of 3043-ETP-1923 for vibration testing. The SLC shall be stabilized at a temperature between -68°F (-56°C) and +128°F (+53°C). The muzzle cap release mechanism and breech locking lugs shall not crack, break or release and the SLC shall not back out of the anti-rotation latch of the simulated aircraft launcher.

3.4.3.4 Accelerated shock exposure. Exposure to 100 half-sine vertical shocks at an acceleration of 13g's and 15 millisecond duration, when installed in a simulated aircraft launcher mounted at a 45° angle with an expended JAU-1/B initiator installed in the SLC, in accordance with the procedures of

## MIL-L-81745B

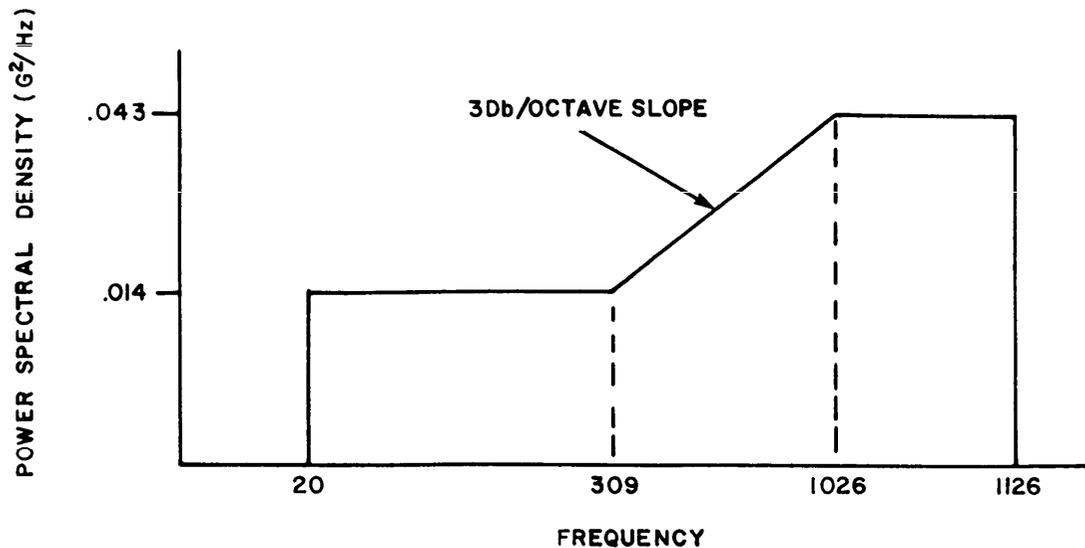


FIGURE 2. Vibration power spectral density.

3.4.3.4 Accelerated shock exposure. Exposure to 100 half-sine vertical shocks at an acceleration of 13g's and 15 millisecond duration, when installed in a simulated aircraft launcher mounted at a 45° angle with an expended JAU-1/B initiator installed in the SLC, in accordance with the procedures of 3043-ETP-1923 for shock testing. The SLC shall be stabilized at a temperature between -68°F (-56°C) and +128°F (+53°C). The muzzle cap release mechanism and breech locking lugs shall not crack, break or release and the SLC shall not back out of the anti-rotation latch of the simulated aircraft launcher.

### 3.5 Design.

3.5.1 Store launcher. The SLC shall be capable of transporting and launching "A" size stores in the P-3C, S-3A, SH-2F, and SH-60B aircraft launch tube systems and simulations of the same when exposed to the service conditions specified in 3.4.3. Launching of the store shall be accomplished by using a JAU-1/B initiator, a JAU-22/B initiator or the pneumatic launch tube system of the SH-60B. Launching from simulated aircraft launch tubes shall be accomplished in accordance with the procedures of STF-TP-101, 3043-ETP-1923, and STP-7056-2. The SLC shall perform as specified in 3.5.1.1 through 3.5.1.2.

3.5.1.1 Transporting. The SLC shall not require adjustments or the removal of any parts prior to installation into the aircraft launch tube. Once installed in an aircraft launch tube, the SLC shall remain latched in place and shall not release the store inadvertently. The SLC shall be removable, by hand and as a single piece, from the aircraft launch tube whether the store has been launched or not.

## MIL-L-81745B

seconds duration are permitted. Stores weighing between 10 and 40 pounds (4.5 and 18.1 kg) shall clear the SLC bore within the time and velocity limits defined by Figures 3 and 4. Figure 3 limits apply to first article and performance maintenance inspections and Figure 4 limits apply to quality conformance inspections. Measurement shall be accomplished by timing the outputs of optical sensors located within the test apparatus or by analyzing high speed photographic film of store launching. Jettisoned parts, such as the muzzle cap, shall not adhere to the store in any way so as to affect the deployment and operation of the store. The SLC shall not crack or break and sharp edges, that could cause injury to personnel upon subsequent handling, shall not result.

3.5.2 Store container. The SLC shall be capable of protecting the store when exposed to the service conditions specified in 3.4. The SLC shall meet the requirements of this specification following testing as specified in the packaging requirements of 5.1.

### 3.6 Construction.

3.6.1 Form factor. The external size and shape of the SLC shall conform to the internal size, shape, bearing surfaces, and latching mechanisms of sonobuoy launch tubes and storage racks of the P-3C (pressurized and unpressurized Cartridge Actuated Device (CAD) launch tubes and internal stowage racks), S-3A (unpressurized CAD launchers), SH-2F (unpressurized CAD launch tubes) and the SH-60B (unpressurized pneumatic launch tubes). The controlling aircraft interfaces are specified by drawing TE21077. The internal size and shape of the SLC shall conform to drawing 1458AS120. The overall length of the SLC, including a minimum .017 inch (.43 mm) X 50° chamfer on the muzzle cap flange, shall be not greater than 39.773 inches (101.02 cm) and the SLC outside diameter shall be not greater than 5.400 inches (13.72 cm) in accordance with drawing TE21077.

3.6.2 Plastics. Plastics used in the construction of the SLC shall be resistant to changes in properties that could result in embrittlement, stress cracking, swelling, or softening during prolonged exposure to inks, greases, cements, and sealants used in the construction of the SLC and exposure to service conditions specified in 3.4. Molding imperfections such as parting lines, ejection pin marks, flash and sprue remnants are permitted provided that specification requirements are met. Porosity that extends to the surface in critical areas such as sealing surfaces and strength locations including breech locking lugs and the muzzle cap release mechanism is not permitted. Plastic parts shall incorporate adequate stress relief radii on inside and outside corners. The radius at the root of the breech locking lugs shall be not less than .02 inch (.51 mm). Quality controls shall be placed on the plastic molding process to ensure uniform production of parts. Quality controls shall be placed on the percentage of reground plastic, from the same production run, that may be used and in no case shall it be greater than 25 percent. Plastics used in the tube section of the SLC and the muzzle cap shall have an advertised flammability rating meeting or exceeding Underwriter's Lab (UL) Subject 94 rating of HB or V-0 through V-2.

3.6.3 Metals. Metals used in the construction of the SLC shall be resistant to corrosion when exposed to service conditions specified in 3.4.

MIL-L-81745B

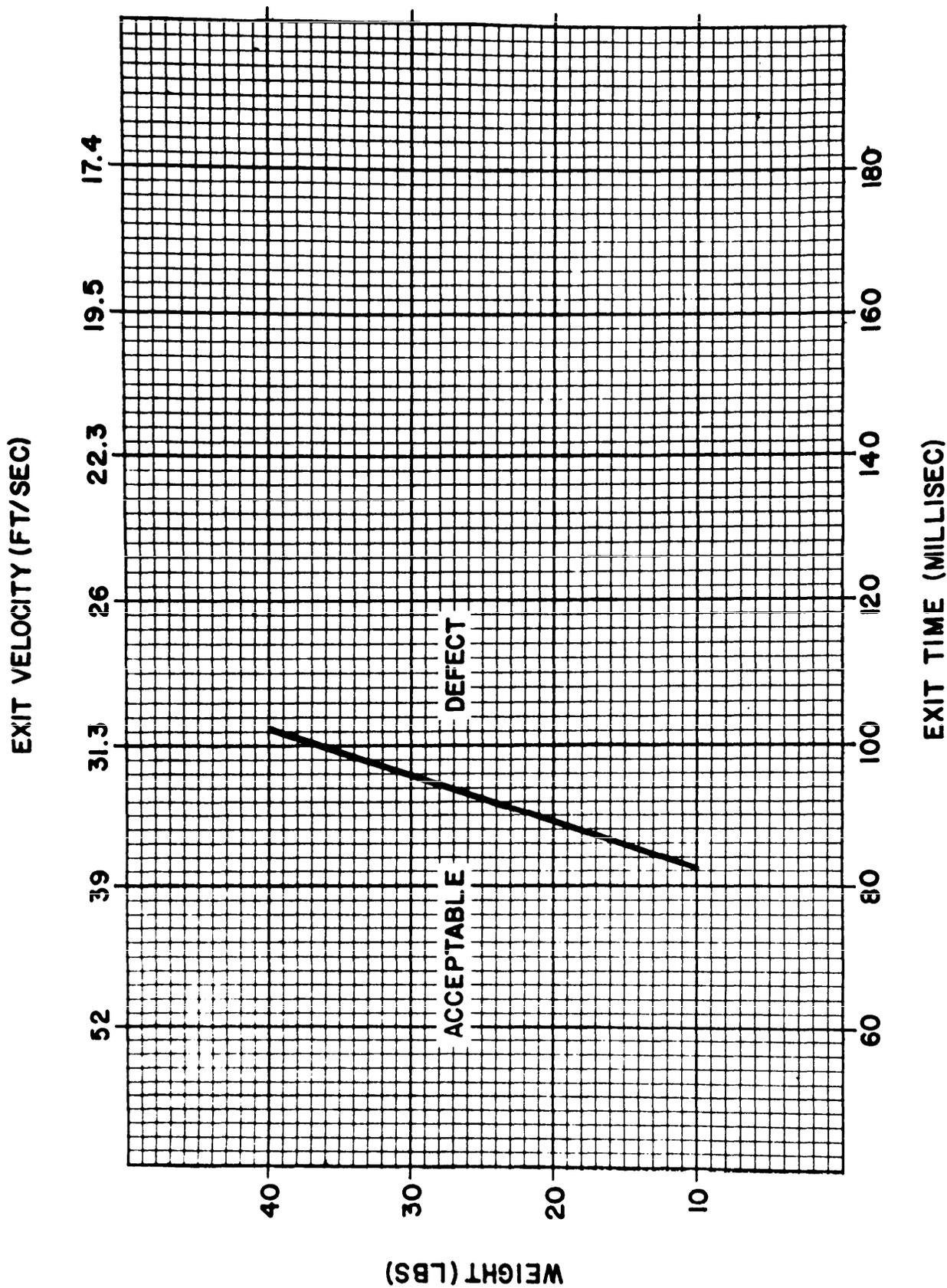


FIGURE 3. Launch time and velocity limits for first article and performance maintenance inspections.

MIL-L-81745B

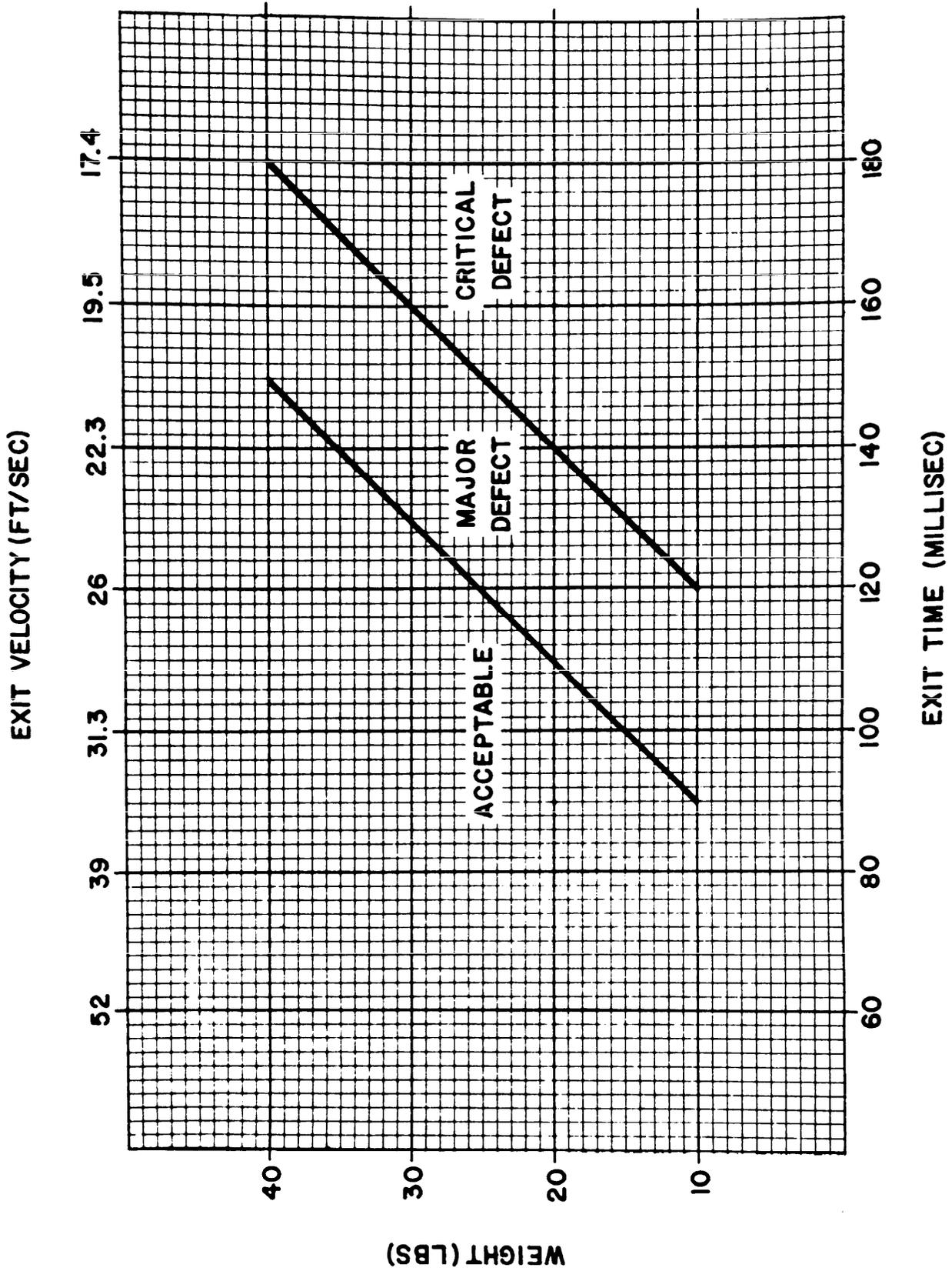


FIGURE 4. Launch time and velocity limits for quality conformance inspections.

## MIL-L-81745B

3.6.4 Bore. The tube section of the SLC shall have a smooth bore with a diameter of 4.90 to 4.98 inches (12.45 to 12.65 cm) at the breech end and 4.90 to 5.04 inches (12.45 to 12.80 cm) at the muzzle end in accordance with drawing 1458AS120.

3.6.5 Breech. The breech shall be the tube section of the SLC with a closed end. The breech shall have provision for the assembly of a JAU-1/B or JAU-22/B initiator and for mating to the O-ring seal of the SH-60B pneumatic launcher. The breech shall withstand the application of 150 pounds/sq.in. (10.3 bars) pneumatic or hydraulic pressure (gauge) internally for 30 seconds without cracking or rupturing. The breech shall be one piece and not less than 10 inches (25 cm) long. The breech shall be constructed in accordance with drawing TE21077. The breech shall incorporate the features specified in 3.6.5.1 through 3.6.5.5.

3.6.5.1 Breech thread. The thread shall be 1 and 15/16-16 UNS-2B and shall be not less than .82 inch (21 mm) long with clearance for the projecting end of the initiator in accordance with drawing TE21077. The UNS-2B thread shall be the same as the UN-2B thread specified by FED-STD-H28 except for a minor diameter of 1.870-1.890 inches and a pitch diameter of 1.8969-1.9139 inches. The breech threads shall permit the assembly of an initiator, without galling and until the initiator shoulder butts against the breech, by hand at a temperature as low as -30°F (-34°C), and by spark resistant tool at a temperature as low as -40°F (-40°C). The breech thread shall withstand the application of a minimum force of 2,500 pounds (11,120 N), applied either inwardly or outwardly from the breech through the initiator, prior to shearing.

3.6.5.2 Breech locking lugs. The breech shall have four equally spaced external radial locking lugs in accordance with drawing TE21077. The breech locking lugs shall withstand the application of a force not less than 1,600 pounds (7,117 N), applied outwardly from the breech through a simulated aircraft launch tube breech assembly, prior to shearing.

3.6.5.3 Breech environmental seal. A means shall be provided to environmentally seal the breech at the bottom of the breech thread. The seal shall rupture when exposed to a 40 pounds/sq.in. (2.8 bars) pneumatic pressure (gauge) applied into the breech thread. The seal shall not interfere with, nor be broken by, insertion of an initiator or insertion of the SLC into the Bayonet Base as defined by drawing 1458AS104.

3.6.5.4 Breech O-ring surface. The surface for mating to the O-ring seal of the SH-60B pneumatic launcher shall have a diameter not less than 2.175 inches (55 mm) in accordance with drawing TE21077. Between the minimum diameter and the breech thread, the surface shall be free of surface irregularities such as ejector pin marks and shall have a surface finish of 63 micro-inches or SPI-SPE Number 5 or better.

3.6.5.5 P-3C pressurized chute stop alignment mark. The breech end shall have a raised radial bar located 180 degrees from the center of the P-3C pressurized chute stop on the SLC muzzle in accordance with drawing TE21077.

3.6.6 Muzzle. The muzzle shall be the tube section of the SLC with an open end and it shall have provision for the assembly of a muzzle cap. The muzzle

## MIL-L-81745B

shall have four equally spaced anti-rotation latch slots and a P-3C pressurized chute stop in accordance with drawing TE21077.

3.6.7 Muzzle cap. A cap and seal shall be provided to environmentally seal the muzzle. The cap shall be flanged so that external loads applied to the cap shall be transferred to the SLC muzzle without damaging the muzzle cap release mechanism. The flange shall not overhang the anti-rotation latch slots or the P-3C pressurized chute stop. The cap shall have ribs or other tactile features within the envelope of the SLC that will allow grasping the cap by hand for the purpose of rotating the SLC within an unpressurized aircraft launch tube. The cap shall be readily removable and replaceable, without the use of special tools, for the purpose of removing or replacing the store. When sonobuoy alignment within the SLC must be fixed, the cap shall be indexed to the muzzle and shall have store index pins in accordance with drawing 1458AS120. The muzzle cap shall have a recess permitting the application of 1 inch (25 mm) wide PPP-T-97, Type II, Class B tape across the muzzle cap and up both sides of the SLC. The recess shall protect the tape from abrasion when the SLC is standing upright on the muzzle end. The government will procure and apply tape in the field as necessary.

3.6.8 Muzzle cap release mechanism. A mechanism shall be provided for retention of the store in the bore of the SLC prior to launching and release of the store at launching. The design of the mechanism shall prevent Foreign Object Damage (FOD) producing debris by jettison of the mechanism with the muzzle cap at launching or retention of mechanism remnants within the muzzle. Tape may be used as part of the retention design. The mechanism shall be readily removable and replaceable, without the use of special tools, for the purpose of removing or replacing the store. The mechanism shall withstand the application of a force not less than 600 pounds (2,669 N), applied outwardly from the muzzle through a simulated muzzle cap, prior to releasing.

3.6.9 Setting ports. Some stores may require selection of operational functions and in that case ports shall be provided in the SLC tube for access to the store selection controls. Ports shall not be located in the SLC breech. The performance of the SLC shall not be degraded by the addition of ports. The ports shall be permanently covered by flexible environmental seals that enable store function selection. The flexible seals shall be transparent so that the controls can be seen. The flexible seals used for electronic function selection shall withstand 350 selections and shall not fail during store launching. The flexible seals used for mechanical function selection, because of the greater control movement required, may be constructed of thinner material than the seals used for electronic function selection. The flexible seals used for mechanical function selection shall withstand 50 selections without seal failure and are permitted to fail during store launching. The exterior surface of the SLC, within 0.5 inch (13 mm) surrounding the flexible seal used for mechanical function selection, shall permit the application of PPP-T-60, Type IV tape for the purpose of reinforcing the seal during store launching. The government will procure and apply tape in the field as necessary.

3.6.10 Electronic Function Select (EFS) window. Some stores may include EFS and in that case a window shall be provided in the SLC tube to enable reading of the EFS display. The performance of the SLC shall not be degraded by the addition of the window. The window shall not be located in the SLC breech.

## MIL-L-81745B

The window shall not rupture during store launching. The window shall be transparent and shall not degrade either the luminous intensity of the Light Emitting Diode (LED) display or the legibility of the Liquid Crystal Display (LCD), as specified by the sonobuoy specifications, by more than 25 percent. The window shall not degrade the LED or LCD display viewing angle, as specified by the sonobuoy specifications, by more than 25 percent.

3.6.11 Obturator. An obturator shall be provided between the interior closed end of the breech and the store to seal that volume of the SLC bore. The launching impetus shall be transmitted by the obturator to the store and shall result in launching of the store with specified velocity. The obturator surface which transmits the launching impetus to the store shall be in accordance with drawing 1458AS120. The obturator shall be retained within the SLC during and following launching.

3.6.12 Cushions. Cushioning material shall be provided inside the SLC to partially absorb shock and vibration forces transmitted between the store and the SLC. The cushioning material shall prevent damage to the SLC and store or inadvertent release of the store. The cushioning material shall be retained within the SLC during and following store launching or shall exit the SLC with the muzzle cap during store launching.

3.6.13 Desiccant. The SLC shall contain one unit of MIL-D-3464, Type II desiccant. The desiccant may be of any shape and shall be located between the muzzle cap and the obturator but shall not be in direct contact with the store. The desiccant shall be retained within the SLC during and following store launching or shall exit the SLC with the muzzle cap during store launching.

3.6.14 Weight. The weight of the SLC shall be not greater than five pounds (2.3 kg).

3.6.15 Color. The color of the muzzle cap release mechanism shall contrast with the color of mating parts to assist in visual inspection. The color of the breech locking lugs shall contrast with the dark color of the SH-60B launch tube breech.

3.6.16 Identifying numbers. The nomenclature, National Stock Number (NSN) and Naval Ammunition Logistics Code (NALC) number shall be as specified in the contract (see 6.2.1).

3.7 Marking. The SLC shall be marked with the information specified in 3.7.1 through 3.7.10 in accordance with SPD-15.

3.7.1 Shipping information. The SLC side, near the muzzle end, shall be marked with the NSN, NALC number, store name, store nomenclature, transmitter channel number (if applicable), quantity, preservation level, packing date of the store lot (month and year in agreement with the bar code), loaded SLC gross weight (rounded to the nearest pound), cube (rounded to the nearest tenth cubic foot), store contract number, three digit store lot number, contractor's name, and contractor's address in accordance with SPD-15.

3.7.2 Store identification, SLC side. The SLC side, approximately midway between the SLC ends, shall be marked with the store abbreviated nomenclature,

## MIL-L-81745B

transmitter channel number (if applicable), acoustic channel letter (if applicable), NALC number, and store serial number (if applicable) in accordance with SPD-15.

3.7.3 Store identification, SLC muzzle cap. The SLC muzzle cap shall be marked with the store abbreviated nomenclature, transmitter channel number (if applicable), acoustic channel letter (if applicable), and NALC number in accordance with SPD-15.

3.7.4 SLC cautions. The SLC side shall be marked with cautions regarding storage and handling in accordance with SPD-15.

3.7.5 SLC identification. The SLC side, near the breech end, shall be marked with the SLC nomenclature, SLC contract number and three digit SLC lot number in accordance with SPD-15.

3.7.6 EFS setting identification. (Note: This paragraph applies only when the store is equipped with EFS settings.) When the store EFS setting identification marking is not legible through the SLC, the SLC side at the EFS displays and switches shall be marked to clearly identify the transmitter channel, operating life, and hydrophone depth (if applicable) displays and the set and verify function switches in accordance with SPD-15.

3.7.7 Manual setting identification. (Note: This paragraph applies only when the store is equipped with manual settings.) When the store manual setting identification marking is not legible through the SLC, the SLC side at the operating life and hydrophone depth controls shall be marked to clearly identify the life and depth positions and shall be marked with control actuation instructions in accordance with SPD-15.

3.7.8 SH-2F alignment marks. The SLC muzzle, adjacent to the anti-rotation latch slot that is located 90 degrees counterclockwise from the P-3C pressurized chute stop as viewed from the muzzle end, shall be marked with a rectangular alignment mark in accordance with SPD-15.

3.7.9 SLC hazardous material marking. When a sonobuoy contains hazardous material as specified by paragraph 171.8 of Title 49 of the Code of Federal Regulations (49CFR), the SLC shall be marked in accordance with SPD-15.

3.7.9.1 SLC lithium battery marking. The SLC side shall be marked with a warning and two decals in accordance with SPD-15 when the store contains lithium batteries, unless the batteries comply with paragraph 173.206(f) of 49CFR.

3.7.9.2 SLC non-explosive ammunition marking. (Note: This paragraph applies only when the SLC is also the shipping container as occurs when the SLC is shipped without the CNU-239/E shipping and storage container.) The SLC side shall be marked with a warning in accordance with SPD-15 when the store is classified as non-explosive ammunition in accordance with paragraph 173.55 of 49CFR unless the SLC is already marked with lithium battery marking.

3.7.10 Bar code marking. The SLC side, adjacent to the shipping information marking, shall be marked with two bar codes in accordance with SPD-15. The information contained in one bar code shall include the National Item

## MIL-L-81745B

Identification Number (NIIN), U.S. Navy ownership code, and material condition code. The information contained in the other bar code shall include a modified ammunition lot number (manufacturer, date, configuration, and lot information), a shelf life date, and the quantity of stores.

3.8 Safety. The SLC shall provide for safety as specified in 3.8.1 through 3.8.3.

3.8.1 Personnel. The SLC shall be so constructed that personnel cannot be cut by sharp edges. Parts which store energy or that are acted on by stored energy shall not release energy inadvertently. Once installed in an aircraft launch tube, the SLC shall remain latched in place and shall not release the store inadvertently.

3.8.2 Launching. The SLC shall not be a hazard to the aircraft or crew when launching the store.

3.8.3 Hazardous material. The SLC shall not be constructed of hazardous material as specified by paragraph 171.8 of 49CFR.

3.9 Product assurance program. The contractor shall conduct a product assurance program in accordance with SPD-16.

3.9.1 Product assurance program plan. The contractor shall prepare a Product Assurance Program Plan (PAPP) for review and acceptance by the procuring activity in accordance with the contract (see 6.2.2).

3.9.2 Test procedures. The contractor shall prepare procedures for conducting individual and sampling quality conformance inspections for acceptance by the procuring activity in accordance with the contract (see 6.2.2).

3.10 Workmanship. Workmanship shall be in accordance with standards developed by the contractor. Workmanship standards shall be included in the contractor's PAPP.

#### 4. QUALITY ASSURANCE PROVISIONS.

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein except for aircraft launch tests, first article tests, and performance maintenance tests. Unless otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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

## MIL-L-81745B

- a. First article inspections (see 4.4).
  - (1) Drawing and physical audits (see 4.4.1).
  - (2) Laboratory tests (see 4.4.2).
  - (3) Aircraft safety and fit tests (see 4.4.3).
  - (4) Aircraft launch tests (see 4.4.4).
- b. Quality conformance inspections (see 4.5).
  - (1) Individual tests (see 4.5.1).
  - (2) Sampling tests (see 4.5.2).
  - (3) Aircraft launch tests (see 4.5.3).
- c. Performance maintenance inspections (see 4.6).

4.3 Inspection conditions. Inspections which require measurement of the SLC shall be performed in laboratory conditions as specified in 4.3.1. All other inspections shall be performed in service conditions as specified in 3.4, in laboratory conditions as specified in 4.3.1, or in manufacturing plant conditions as applicable.

4.3.1 Laboratory conditions. Laboratory conditions shall be as follows:

- a. Ambient air temperature of  $+72^{\circ} \pm 2^{\circ}\text{F}$  ( $+22.2^{\circ} \pm 1.1^{\circ}\text{C}$ ) and  $+77^{\circ} \pm 9^{\circ}\text{F}$  ( $+25^{\circ} \pm 5^{\circ}\text{C}$ ) for breech thread measurements.
- b. Atmospheric pressure equal to normal ground level.
- c. Relative humidity of 10 percent to 95 percent.

4.4 First article inspections. First article inspections will be conducted on a sample of SLC's as specified in the contract (see 6.2.1). The first article sample shall be manufactured using the tooling, methods, procedures, parts, and materials intended for use on production SLC's. The sample shall be submitted to the designated test activity. The inspections will be conducted in increments as specified in 4.4.1 through 4.4.4. Deficiencies disclosed during any increment shall be corrected prior to submission of further test samples or the granting of first article approval. Production of SLC's prior to completion of first article inspections and the granting of first article approval shall be done at the contractor's own risk.

4.4.1 Drawing and physical audits. The drawing audit will consist of verifying that the contractor's drawings for the SLC meet the requirements of Drawing TE21077 and Drawing 1458AS120. The physical audit will consist of measuring SLC samples to verify that they conform to the contractor's drawings.

## MIL-L-81745B

4.4.2 Laboratory tests. The tests will include exposure to the service conditions specified in 3.4 and verification of acceptable design, construction, marking, safety, and workmanship as specified herein.

4.4.3 Aircraft safety and fit tests. The tests will include verification of safe operation and acceptable fit in P-3C, S-3A, SH-2F, and SH-60B aircraft.

4.4.4 Aircraft launch tests. The tests will include exposure to the aircraft service conditions specified in 3.4.3 and verification of acceptable design, construction, marking, safety, and workmanship as specified herein.

4.5 Quality conformance inspections. Acceptance of production SLC's shall be on a lot basis after satisfactory completion of the inspections specified in 4.5.1 through 4.5.3 and shall be conditional on delivery in packaging as specified in 5.1. The contractor shall furnish all SLC's and shall be responsible for accomplishing individual and sampling tests. The procuring activity will conduct aircraft launch tests. All inspection and testing at the contractor's plant will be monitored by the cognizant government representative. The contractor shall initiate failure reports, analyze failures, and implement corrective actions for failures encountered in any quality conformance inspection (see 3.3.3). Acceptance or approval of material during the course of manufacture shall in no case be considered a guarantee of the acceptance of the finished product.

4.5.1 Individual tests. Each SLC shall be subjected to the individual tests. These tests shall be adequate to determine compliance with the requirements for material, workmanship, and operational adequacy. As a minimum, each SLC shall be carefully examined with the store installed to determine that the requirements for material, workmanship, marking, store installation, and access to functional settings (if applicable) have been met.

4.5.2 Sampling tests. Sampling tests shall be conducted on sublots before and after store installation as specified in 4.5.2.1 and 4.5.2.2. SLC samples which have successfully completed the sampling inspections shall be returned to the subplot from which they were selected.

4.5.2.1 Before store installation. As a minimum, the tests specified in 4.5.2.1.1 through 4.5.2.1.8 shall be conducted on SLC samples (units or piece parts) selected from sublots not exceeding 3,200 SLC's (units or piece parts) in accordance with MIL-STD-105. In lieu of the specified inspection level, 100 percent inspection or any other increased level of inspection is permitted.

4.5.2.1.1 Obturator diameter. Verify that the obturator diameter is in accordance with the approved PCI. MIL-STD-105 Single Sampling Plan, inspection level S-4, and Average Quality Level (AQL) of .65 shall apply.

4.5.2.1.2 Breech thread diameters. Verify that the breech thread pitch and minor diameters meet the requirements specified in 3.6.5.1 to the full depth of the thread. MIL-STD-105 Single Sampling Plan, inspection level S-4, and AQL of .65 shall apply.

## MIL-L-81745B

4.5.2.1.3 External SLC dimensions. Verify that the SLC tube length and outside diameter are in accordance with the approved PCI. MIL-STD-105 Single Sampling Plan, inspection level S-4, and AQL of .65 shall apply.

4.5.2.1.4 Breech sealing surface. Verify that the breech O-ring sealing surface meets the requirements specified in 3.6.5.4. MIL-STD-105 Single Sampling Plan, inspection level S-4, and AQL of .65 shall apply.

4.5.2.1.5 SLC fit test. Verify that the fit of the SLC, locking of breech, and latching of muzzle when inserted into a simulated launch tube. MIL-STD-105 Single Sampling Plan, inspection level S-4, and AQL of .65 shall apply.

4.5.2.1.6 Breech strength test. Verify the strength of the breech by pressure testing the breech using a pressure tester which seals the breech thread and the SLC tube bore at 9 to 11 inches (23 to 28 cm) from the breech end. The breech shall withstand the application of 150 pounds/sq.in. (10.3 bars) pressure (gauge) as specified in 3.6.5. The test may be accomplished at a piece part level. MIL-STD-105 Single Sampling Plan inspection level S-4, and AQL of .65 shall apply.

4.5.2.1.7 Breech locking lug strength test. Verify the strength of the breech locking lugs by accomplishing the breech to a fixture and then applying force simultaneously to all four breech locking lugs. The peak force required to shear the four lugs shall be a minimum of 1,600 pounds (7,168 N) as specified in 3.6.5.2. Force shall be applied at a fixed rate of between .1 and 1 inch (2.5 and 25 mm) per minute. The test may be accomplished at a piece part level. MIL-STD-105 Single Sampling Plan, inspection level S-1, and AQL of 2.5 shall apply.

4.5.2.1.8 Muzzle cap release mechanism strength test. Verify the strength of the muzzle cap release mechanism by assembling the mechanism to a fixture that simulates an SLC muzzle and muzzle cap and then applying force. The peak force required to release the simulated muzzle cap shall be a minimum of 600 pounds (2,669 N) as specified in 3.6.8. Force shall be applied at a fixed rate of between .1 and 1 inch (2.5 and 25 mm) per minute. MIL-STD-105 Single Sampling Plan, inspection level S-1, and AQL of 2.5 shall apply.

4.5.2.2 After store installation. As a minimum, the tests specified in 4.5.2.2.1 and 4.5.2.2.2 shall be conducted on SLC samples selected from sublots not exceeding the store lot size in accordance with MIL-STD-105. In lieu of the specified inspection level, 100 percent or any other increased level of inspection is permitted. The tests may be accomplished after aircraft launch tests.

4.5.2.2.1 SLC assembly. Verify that the assembly of the muzzle cap, release mechanism, muzzle O-ring seal, breech seal, cushions, obturator, and setting ports is in accordance with the approved PCI. MIL-STD-105 Single Sampling Plan, inspection level I, and AQL of 1.5 shall apply.

4.5.2.2.2 Marking. Verify that the marking meets the requirements specified in 3.7. MIL-STD-105 Single Sampling Plan, inspection level I, and AQL of 1.5 shall apply.

## MIL-L-81745B

4.5.3 Aircraft launch tests. Aircraft launch tests will be conducted on a production lot sample of SLC's as specified in the contract (see 6.2.1). The sample will be randomly selected from a production lot by the cognizant government representative. The sample, with store installed, shall be submitted to the designated test activity. Acceptance and rejection of individual SLC's will be based on the classification of defects specified in 4.5.3.1.

4.5.3.1 Classification of defects. Defects are classified as critical, major, or minor as specified in MIL-STD-105. Failure to meet any requirement of this specification will be classified as a major defect unless classified as critical or minor by Volume III of STF-TP-101. Defect evaluation criteria will be in accordance with Volume III of STF-TP-101.

4.6 Performance maintenance inspections. Performance maintenance inspections will be conducted on a sample of accepted production SLC's as specified in the contract (see 6.2.1). The sample shall be submitted to the designated test activity. These inspections may duplicate any inspections previously conducted during first article inspections. All defective units will be returned to the contractor provided 90 days has not elapsed since acceptance of the last lot of the contract. The contractor shall initiate failure reports, analyze failures, and implement corrective actions for failures encountered in performance maintenance inspections (see 3.3.3).

## 5. PACKAGING.

5.1 Preservation and packaging. Packaging shall be as specified in the contract (see 6.2.1).

## 6. NOTES.

6.1 Intended use. The LAU-126/A SLC serves as a launcher and storage container for sonobuoys and other "A" size stores. The LAU-126/A SLC is compatible with the P-3C, S-3A, SH-2F and SH-60B aircraft.

### 6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Requirements for the reliability program (see 3.3.1).
- c. Identifying numbers assignment (see 3.6.16).
- d. First article inspection sample size and test activity (see 4.4).
- e. Aircraft launch test sample size, AQL, and test activity (see 4.5.3).
- f. Performance maintenance inspection sample size and test activity (see 4.6).
- g. Requirements for packaging (see 5.1).

## MIL-L-81745B

6.2.2 Data requirements. When this specification is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL), the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of DAR 7-104.9 (n) (2) are invoked and the DD Form 1423 is not used the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification is cited in the following paragraphs.

<u>Paragraph No.</u>	<u>Data requirement title</u>	<u>Applicable DID No.</u>	<u>Option</u>
3.2	Engineering Change Proposals (ECP) and Requests for Deviations and Waivers (Long Form)	DI-E-2037	Modified
3.3.3	Report, Failed Item Analysis	DI-R-7039	Modified
3.9.1	Plan, Product Assurance Program	DI-R-1700	Modified
3.9.2	Procedure, Acceptance Test	DI-T-3714A	Modified
4.4.1	Drawings, Engineering and Associated Lists	DI-E-7031	

(Data item descriptions related to this specification, and identified in section 6 will be approved and listed as such in DoD 5000.19L., Vol. II AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.3 First article. The first article should consist of the number of unit(s) specified in the contract (see 6.2.1). The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, tests, and approval of the first article.

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

Preparing Activity  
Navy AS  
(Project PACK-N049)

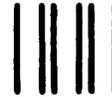
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