

NOT MEASUREMENT SENSITIVE

MIL-I-25355B (USAF)
1 JUNE 1993
 SUPERSEDING
 MIL-I-25355A (USAF)
 14 OCTOBER 1970

MILITARY SPECIFICATION

INDICATOR, INSTRUMENT LANDING, AIRPORT RUNWAY

This specification is approved for use by the Department of the Air Force and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers one type of electrical indicating instrument designated Indicator, Instrument Landing, Airport Runway.

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 specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

Federal

PPP-B-1672

Boxes, Shipping, Reusable
with Cushioning

Beneficial comments recommendations, additions, deletions and any pertinent data which may be of use in improving this document should be addressed to: Oklahoma City Air Logistics Center/TICLA, Tinker AFB, OK 73145-3037 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 6610

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

MIL-I-25355B (USAF)

Military

MIL-P-116	Preservation, Methods of
MIL-B-121	Barrier Material, Greaseproofed, Waterproofed, Flexible
MIL-C-5015	Connector, Electrical, Circular Threaded
MIL-E-5400	Electronic Equipment, Airborne, General Specification For
MIL-S-7742	Screw Threads, Standard, Optimum Selected Series, General Specification For
MIL-A-8625	Anodic Coatings, For Aluminum And Aluminum Alloys
MIL-B-27497	Bearing, Jewel, Sapphire, Synthetic
MIL-T-31000	Technical Data Packages, General Specification For
MIL-C-83488	Coating, Aluminum, Ion Vapor Deposited

STANDARDS

Federal

FED-STD-101	Preservation, Packaging And Packing Materials: Test Procedures
FED-STD-595	Colors

Military

MIL-STD-129	Marking For Shipment And Storage
MIL-STD-130	Identification Marking Of U.S. Military Property
MIL-STD-461	Electromagnetic Emission And Susceptibility Requirements For The Control Of Electromagnetic Interference
MIL-STD-462	Electromagnetic Interference Characteristics, Measurement Of
MIL-STD-471	Maintainability Demonstration
MIL-STD-781	Reliability Tests, Exponential Distribution
MIL-STD-785	Reliability Program For Systems And Equipment, Development And Production
MIL-STD-810C	Environmental Test Methods
MIL-STD-889	Dissimilar Metals
MIL-STD-970	Standards & Specifications, Order Of Preference For The Selection Of Procedures For Development And Application Of Packaging Requirements
MIL-STD-2073/1B	

MIL-I-25355B (USAF)

MS3102

Connector, Receptacle, Box Mounting

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Document Order Desk, Bldg 4D, 700 Robbins Ave, 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.

55D13107

Indicator, Low Approach ID-525/ARN-
Outline Dimensions of

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from OC-ALC/TILDO, Tinker AFB, OK 73145-3037 or as directed by the contracting officer.

2.2 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, 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 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.2) in accordance with 4.4.

3.2 Selection of specifications and standards. Specifications and standards for necessary commodities and services not specified herein shall be selected in accordance with MIL-STD-970.

3.3 Materials.

3.3.1 Nonmagnetic materials. Nonmagnetic materials shall be used for all parts of the indicator except where magnetic materials are essential.

3.3.2 Fungus-proof materials. Materials which are nutrients for fungi shall not be used where it is practicable to avoid them. Where used and not hermetically sealed, they shall be treated with a fungicidal agent.

3.3.2.1 Recovered materials. Recovered materials shall be used to the maximum extent possible without jeopardizing the end use of the item.

3.3.3 Metals. Metals shall be of the corrosion-resistant type, or shall be suitably treated to resist corrosion due to salt fog or atmospheric conditions to which the indicator may be subjected when in storage or during

MIL-I-25355B (USAF)

normal storage life.

3.3.3.1 Dissimilar metals. Unless suitably protected against electrolytic corrosion, dissimilar metals shall not be used in intimate contact with each other. Dissimilar metals are defined in MIL-STD-889.

3.3.4 Protective treatment. When materials are used in the construction of the indicator that are subject to deterioration when exposed to climatic and environmental conditions likely to occur during service usage, they shall be protected against such deterioration in a manner that will in no way prevent compliance with the requirements of this specification. The use of any protective coating that will crack, chip, or scale with age or extremes of climatic and environmental conditions shall be avoided.

3.4 Design and construction. The indicator shall be designed as a direct-current electrical indicating instrument to provide visual indication of aircraft position relative to space patterns generated by ground transmitters by means of two crossed pointers with related warning flag mechanisms and a maker beacon lamp. The vertical pointer shall indicate lateral deviation from the "on course" signal of a selected omnirange course, or from the "on course" signal of a selected runway localizer. The horizontal pointer shall indicate vertical deviation from an "on course" glide slope. The maker beacon lamp shall provide visual indication of the maker beacon signals and the flag alarms shall provide nonoperational indication of associated electronic equipment. The indicator shall be constructed to withstand normal strains, jars, vibrations, and such other conditions incidental to shipping, installation and service.

3.4.1 Electronic parts. Electronic parts and the application thereof shall be in accordance with the requirements for class 2 equipment of MIL-E-5400, unless approved by the procuring activity.

3.4.2 Reliability program. The contractor shall establish a reliability program in accordance with MIL-STD-785.

3.4.2.1 Reliability. The indicator shall have a minimum acceptable mean-time-between-failures (MTBF) of 1000 hours at a 90 per cent confidence level.

3.4.2.2 Longevity. Equipment longevity as defined in MIL-STD-781 shall be 5000 hours before wearout failures occur or the equipment consistently fails to meet the specified MTBF requirements.

3.4.3 Maintainability. Maintainability of the indicator shall be demonstrated in accordance with MIL-STD-471.

3.4.4 Case. The indicator case shall conform to Drawing 55D13107, shall be finished in a durable black, and shall be hermetically sealed. The design shall be such that the mechanism may be removed from the case, replaced, and the case resealed without the use of special tools unless they are approved by the procuring activity. The hermetic seal shall not be dependent upon

MIL-I-25355B(USAF)

materials which may be affected by the action of any atmospheric condition to which the indicator may be subjected.

3.4.4.1 Filling medium. The filling medium shall be of at least 98 percent purity, free of dust particles and containing not more than 0.006 milligrams of water vapor per liter (dew point -65°C) at the filling pressure. The filling medium shall be a mixture of 90 percent nitrogen and 10 percent helium by volume. The absolute pressure of the filling medium in the case shall be approximately 1 atmosphere.

3.4.4.2 Mounting flange. The mounting flange of the case shall be made of nonferrous low density metal and shall have a lusterless black finish, color No. 37038 of FED-STD-595. The mounting flange shall be held in place by means of screws properly secured by lock washers or similar devices of approved design.

3.4.5 Pointers. With the indicator in the normal operating position, the vertical and horizontal pointers shall be pivoted in such a manner that they are vertical and horizontal, respectively, at zero center or at any point of deflection. The pointer mechanisms shall be overdamped (no overswing). Deflection of the pointers shall be linear in degrees with respect to current and shall be in agreement with the polarity and direction specified by Drawing 55D13107. The vertical pointer shall be positioned behind the horizontal pointer when facing the front of the indicator. Each pointer shall be provided with an external zero adjustment. The free ends of the pointers shall not be visible from directly in front of the indicator, regardless of the position of the pointers. Pointer stops shall be located so that it will be possible to measure full scale (150 microamperes) deflection without the pointers being against the stops. Pointer deflection shall be linear in degrees with respect to current within 7.5 percent of the proportionate full scale value of 150 microamperes. A deflection of 5/8 inch measured from the center of the dial shall require 150 microamperes, ± 5 percent, with the indicator in normal operating position. The vertical and horizontal pointer mechanisms shall have a resistance of 1000 ohms ± 3 percent at 25°C .

3.4.5.1 Response time. The time required for the pointers to reach 90 percent of the scale value of final indication (when shunted by 350 ohms) shall be a minimum of 1.15 seconds. Zero time is defined as the instant of current application in the form of a step function.

3.4.6 Flag alarms. The flag alarms shall be operated by a suppressed zero type mechanism which shall hold the flag against a stop in its visible position in the absence of current, or when the current is less than 180 micro-amperes. At any value of current greater than 180 micro-amperes, the flag alarm shall move away from its stop, and shall disappear behind the face mask with the application 245 ± 10 microamperes. Flag alarm positioning and polarity shall be in accordance with Drawing 55D13107. Each flag alarm mechanism shall have a resistance of 1000 ohms ± 3 percent at 25°C .

MIL-I-25355B (USAF)

3.4.7 Cover glass. The cover glass shall be clear, flat, and free from flaws which interfere with normal reading of the indicator.

3.4.8 Dial. The dial face shall be designed in accordance with Drawing 55D13107. The miniature airplane shall be of the same configuration as depicted in the drawing. Scale length of the wings shall be 0.750 ± 0.005 inch. Wing tip radius shall be the same as the dot radius. Plane body diameter shall be 0.190 inch ± 0.005 inch. The plane and dots shall lay on a spherical surface and the pointers shall be curved so as to reduce parallax to a practical minimum.

3.4.9 Electrical receptacles. Indicator circuits shall be connected to a 10-pin receptacle of the MS3102-18S-1P type except that the design shall be suitable for hermetic sealing. The lamp shall be connected to a 3-pin receptacle of the MS3102-14S-7P Type except that the design shall be suitable for hermetic sealing. The receptacle shall be in accordance with MIL-C-5015.

3.4.10 Wiring. Connection of components to receptacle pins shall be in accordance with 55D13107.

3.5 Performance. The indicator shall perform satisfactorily when subjected to the following conditions:

- a. Dielectric strength - A potential of 2000 V (rms) a-c at a commercial frequency
- b. Vibration - Vibration at double amplitudes of 0.020 inch from 5 to 50Hz
- c. Altitude - Pressure altitudes up to $70,000$ feet
- d. Temperature - Temperatures ranging from -50° to $+70^{\circ}$ C
- e. Salt fog - Exposure to salt fog for a period of 50 hours
- f. Thermal shock - Eight cycles of alternate immersion in tap water at a temperature of 85° C and tap water at 5° C

3.5.1 Overcurrent. Subjection to constant or intermittent overloads of up to four times full scale current shall not depreciate performance.

3.5.2 Interference. Rapidly energizing the maker lamp shall product no noticeable effect on the pointers.

3.5.3 Radio noise. The indicator shall meet the radiated and conducted radio noise requirements of MIL-STD-461 and MIL-STD-462.

3.5.4 Magnetic effect. Compass deflection shall not exceed 4 degrees of arc when the indicator is operating and positioned 8 inches from the compass in a horizontal magnetic field intensity of 0.17 to 0.19 oersted.

3.5.5 Fogging. There shall be no evidence of moisture or oil fogging of the cover glass, wedge, or display when the indicator is subjected to 71° C for 1 hour and the cover glass then rubbed with ice.

MIL-I-25355B (USAF)

3.6 Part numbering of interchangeable parts. All parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable. The item identification and part number requirements of MIL-T-31000 shall govern the manufacturer's part numbers and changes thereto.

3.7 Screw threads. Screw threads shall be in accordance with MIL-S-7742.

3.8 Weight. The weight of the indicator shall not exceed 1.75 pounds.

3.9 Finish.

3.9.1 Aluminum alloy parts. Aluminum alloy parts shall be covered with an anodic film conforming to MIL-A-8625, except that the dial, small holes, and case inserts need not be anodized. If such parts are contained within a hermetically sealed enclosure, they need not be anodized.

3.9.2 Steel parts. Steel parts shall be coated with ion vapor deposited aluminum, where practicable, in accordance with MIL-C-83488, type I or II as applicable and of a class that is adequate to achieve the degree of protection required. Other protective coating, in lieu of MIL-C-83488, may be used if demonstrated to be satisfactory and approved by the preparing activity. Cadmium plating must be avoided when satisfactory alternative processes can be used.

3.10 Bearing synthetic. When sapphire or ruby jewel synthetic bearings are used they shall be suitable for the purpose and shall be in accordance with MIL-B-27497.

3.11 Identification of product. Equipment, assemblies, and parts shall be marked for identification in accordance with MIL-STD-130.

3.12 Workmanship. The indicator, including all parts and accessories, shall be constructed and finished to produce an instrument free from all defects that would affect proper functioning in service. Particular attention should be given to neatness and thoroughness of soldering, wiring, impregnation of coils, making of parts and assemblies, and freedom of parts from burrs and sharp edges.

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 this 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.

MIL-I-25355B (USAF)

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set fourth 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 inspections. 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 4.3.1 in the specification.

4.3.1 Standard atmospheric conditions. Whenever the pressure and temperature existing at the time of test are not specified definitely, it is understood that the test is to be made at atmospheric pressure (approximately 29.92 inches Hg) and at room temperature (approximately 25°C). When tests are made with atmospheric pressure or room temperature differing materially from the above values, proper allowance shall be made for the difference from the specified condition.

4.3.2 Attitude and vibration. Unless otherwise specified, the indicator shall be tested in a normal upright position. The use of light agitation, not to exceed 0.002 inch vibration at a frequency of 40 to 55 Hz, is permissible.

4.4 First article inspection.

4.4.1 Test samples. The first article test samples shall consist of three indicators representative of the production equipment. The samples shall be identified with the manufacturer's part number and such other information as required by the procuring activity.

4.4.2 Tests. The first article tests shall consist of all the tests specified under 4.6.

4.5 Quality conformance inspection. Quality conformance inspection shall consist of:

- a. Individual tests
- b. Sampling tests

MIL-I-25355B(USAF)

4.5.1 Individual tests. Each indicator shall be subjected to the following tests as described under 4.6:

- | | |
|---------------------------|-------------|
| a. Examination of product | (see 4.6.1) |
| b. Dielectric strength | (see 4.6.2) |
| c. Resistance | (see 4.6.3) |
| d. Position error | (see 4.6.4) |
| e. Response time | (see 4.6.5) |
| f. Pointer error | (see 4.6.6) |
| g. Flag alarm operation | (see 4.6.7) |
| h. Sealing | (see 4.6.8) |

4.5.2 Sampling tests. A minimum of 2 indicators shall be selected at random from each 100 or fraction thereof produced and subjected to the following tests as described under 4.6:

- a. Individual tests
- b. Vibration
- c. Thermal shock
- d. High altitude - low temperature
- e. High temperature exposure
- f. Interference
- g. Radio noise
- h. Magnetic effect
- i. Fogging
- j. Overcurrent
- k. Salt fog

4.5.2.1 Reject criteria. When one item selected from a production run fails to meet the specification, no items still on hand or later produced shall be accepted until the extent and cause of failure are determined and corrected. Individual tests may be continued pending the investigation of a sampling test failure. However, final acceptance of items on hand or later produced shall not be made until it has been determined that the items meet all the requirements of this specification. The investigation of a test failure could indicate that defects may exist in items already accepted. If so, the contractor shall fully advise the procuring activity of all defects likely to be found and methods for correcting them.

4.6 Test methods

4.6.1 Examination of product. The indicator shall be inspected to determine compliance with this specification with respect to materials, workmanship, marking, and dimensions.

4.6.2 Dielectric strength. A potential of 200 volts at a commercial frequency shall be applied between any connector pin and the case of the indicator for a minimum period of 5 seconds. There shall be no breakdown of the insulation.

MIL-I-25355B (USAF)

4.6.3 Resistance. Resistance of the indicator circuits shall be measured across pins A and B, across pins C and D, across pins E and F, and across pins G and H of the 10-pin receptacle. Each circuit shall measure 1000 ohms ± 3 per cent.

4.6.4 Position error. With the indicator in normal upright position and pointer mechanisms deenergized, the vertical and horizontal pointers shall each be adjusted by means of the zero correctors to bisect the center of the indicator dial. The indicator shall be rotated 30° counter-clockwise, and tilted 30° forward. The pointers shall not deflect more than 7/64 inch from the dial center.

4.6.5 Response time. Pins A and B of the 10-pin receptacle shall be shunted with an external resistance of 350 ohms to allow for the effect of another indicator in parallel with the usual source. A stable source of DC voltage shall be connected to this circuit through a sufficient resistance to develop a current of 150 microamperes through the indicator. The time required for the vertical pointer to reach 90 percent of final indication after application of the voltage shall be a minimum of 1.15 seconds. The external shunt shall be removed from pins A and B, connected to pins C and D, and the test repeated. The time required for the horizontal pointer to reach 90 percent of final indication shall be a minimum of 1.15 seconds.

4.6.6 Pointer error. Current shall be applied to the vertical and horizontal pointer circuits as specified in paragraph 4.6.5. The current required for full scale (5/8 inch) deflection (both in the polarity specified on Drawing 55D13107 and with the polarity reversed) shall be 150 microamperes ± 5 percent. The position of each pointer shall be checked with at least 2 intermediate values of current applied. Pointer deflection shall be linear in degrees with respect to current within 7.5 percent of the proportionate full scale value of 150 microamperes.

4.6.7 Flag alarm operation. Apply a direct current of 180 microamperes (polarity as shown on Drawing 55D13107 to pins E and F of the 10-pin receptacle. The vertical (LOC OR RANGE) flag shall be completely visible. The current shall be slowly increased until the flag is completely hidden. The current shall then be measured and shall be 245 ± 10 microamperes. The test shall be repeated with current applied to pins G and H. The horizontal (GLIDE SLOPE) flag shall be fully visible at 180 microamperes and shall be completely hidden at 245 ± 10 microamperes.

4.6.8 Sealing. The indicator case shall be tested for leaks by means of a mass-spectrometer-type helium leak detector. The detected leak rate shall not exceed 1 micro cubic foot per hour at a pressure differential of 12 to 14.7 psi.

4.6.9 Vibration. The indicator shall be subjected to a vibration test in accordance with Method 514.2, Procedure I, of MIL-STD-810C. The indicator shall be vibrated at a double amplitude of 0.020 inch from 5 to 50 Hz. The maximum amplitude of pointer vibration shall not exceed 1/32 inch. Following

MIL-I-25355B (USAF)

the vibration period, the indicator shall be checked for response time, pointer error, and flag alarm operation as specified herein. No screws or other parts shall become loosened or damaged as a result of vibration.

4.6.10 Thermal shock. The indicator shall be subjected to eight cycles of immersion in water at a temperature of $85^{\circ} \pm 2^{\circ}\text{C}$ and the in water at a temperature of $5^{\circ} \pm 2^{\circ}\text{C}$ without evidence of moisture penetration or damage to coating or the case. The length of time for each immersion shall be 30 minutes, with not more than 5 seconds between immersions. After eight continuous cycles have been completed and the indicator has returned to room temperature, the pointers and flags shall be operated throughout their range. There shall be no evidence of sticking.

4.6.11 High altitude-low temperature. The indicator shall be subjected to an altitude of $70,000$ feet ± 5000 feet at a temperature of $-55^{\circ} \pm 3^{\circ}\text{C}$ for a period of 4 hours. While at this pressure and temperature pointers and flags shall be operated throughout their range of travel without sticking.

4.6.12 High temperature exposure. The indicator shall be subjected to a temperature of $70^{\circ} \pm 2^{\circ}\text{C}$ for a period of 24 hours. The indicator shall then be returned to room temperature and checked for sticking of pointers or flags. Following this test, the pointers shall not have deviated from the center of the indicator more than 0.080 inch. The pointers shall be reset and the pointers and flag alarms tested as specified in paragraphs 4.6.6 and 4.6.7 respectively, except that the pointer error tolerance shall be ± 8 percent and the flag alarms shall be hidden at a current of 245 ± 15 microamperes.

4.6.13 Interference. The marker lamp shall be energized by rapidly applying 28 volts to pin B or C of the 3-pin receptacle with pin A common. No noticeable effect shall be produced on either of the pointers.

4.6.14 Radio noise. The indicator shall be tested for conducted and radiated radio noise in accordance with MIL-STD-461 and MIL-STD-462 within the limits of 0.15 and 150 MHz.

4.6.15 Magnetic effect. The indicator, first, not operating and second operating on rated voltage, shall be rotated in a vertical plane about a short bar magnetic compass with the nearest part of the indicator 8 inches from and magnetically east or west of the center of the compass. Starting directly under the compass, the indicator shall be held in positions 0° , 45° , 90° , 135° , 180° , 225° , 270° , and 315° from the initial position. At each of these positions, the indicator shall be rotated on its own horizontal axis until it is in its normal upright position. The horizontal magnetic field intensity shall be 0.17 to 0.19 oersted. The deflection of the compass of the compass at any of the specified positions shall not exceed 4° .

4.6.16 Fogging. The indicator shall be energized and kept in a $70^{\circ} \pm 2^{\circ}\text{C}$ controlled ambient temperature for a minimum of 1 hour. At the end of this period and while still at the high temperature, an ice cube shall be rubbed

MIL-I-25355B (USAF)

on the face of the indicator glass for a period of 1 to 2 minutes. The glass shall be wiped dry (compressed air shall not be used) and the indicator inspected for evidence of water or oil fog. Any evidence of fogging shall be cause for rejection. This test may be conducted in conjunction with the test specified in 4.6.12.

4.6.17 Overcurrent. Each of the indicator movements shall be subjected to a current of four times the full scale value for a period of 1 minute. The associated pointer shall not break or stick. Following the test, the indicator shall be subjected to the tests specified in 4.6.6 and 4.6.7.

4.6.18 Salt fog. The indicator shall be subjected to a salt fog test in accordance with Method 509.1, Procedure I, and MIL-STD-810C. There shall be no evidence of external corrosion or deterioration which will affect subsequent operation. The indicator shall then be subjected to the test specified in 4.6.2. The measured resistance shall be a minimum of 20 megohms between each pin of the electric receptacles and the shell. The external surface of the indicator may be washed with distilled water and air dried prior to subjection to the dielectric strength test.

4.7 Inspection of packaging. The inspection of the preservation-packaging and interior package marking shall be in accordance with Group A and B quality conformance inspection requirements, Section 4 of MIL-P-116. The sampling and inspection of the packing and marking for shipment and storage shall be in accordance with the quality assurance provisions of applicable container specification and the markings requirements of MIL-STD-129.

4.7.1 First article. When the unit container is capable of serving as the shipping container First Article Inspection, and rough handling tests as outlined in Section 4 of MIL-P-116, shall be accomplished followed by a functional test of the unit to insure freedom from operational malfunction.

5. PACKAGING

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

5.1.1 Preservation-packaging. Unless otherwise specified by the contracting activity, item shall be packaged in quantity unit pack (QUP) of one each. Each item will be provided a preservation method IC-1 in accordance with (IAW) MIL-P-116.

5.1.2 Cleaning. Item shall be cleaned IAW MIL-P-116 C-1 process.

5.1.3 Drying. Immediately after cleaning, the item shall be dried following any one or combination of the drying procedures listed in MIL-P-116. The drying procedures employed shall not be injurious to the item.

5.1.4 Level A. Item shall be preserved IAW MIL-P-116 and MIL-STD-2073-1B to provide a method IC-1.

MIL-I-25355B(USAF)

5.1.5 Level C. Item shall be individually preserved in a manner that will afford adequate protection against corrosion, deterioration, and physical damage during shipment from the supply source to the first receiving activity as specified in MIL-P-116 and MIL-STD-2073-1B.

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

5.2.1 Container-cushioning. Unit container requirements shall conform to MIL-B-121, barrier material, unless otherwise specified by the contracting activity. Unit containers shall be large enough to allow for application of sufficient cushioning/wrap material between the item and unit container to protect the unit container from punctures. Intermediate container requirements shall conform to PPF-B-1672, weather-resistant, unless otherwise specified by the contracting activity. Intermediate containers shall be large enough to allow for application of sufficient cushioning material, between the unit container and intermediate container. Cushioning material shall be of sufficient density and thickness to insure shock transmission does not exceed peak values in G's established for the item.

5.2.2 Level A. Item will be preserved as specified in 5.1 and shall be packed in exterior containers conforming to PPF-B-1672, weather-resistant, unless otherwise specified by the contracting activity. Exterior container shall be uniform shape, size and minimum tare and cube, consistent with the protection required. Closure shall be in accordance with appropriate PPF-B-1672 procedures, as specified by contractor, special packaging instructions (SPI), and contracting activity.

5.2.3 Level B. Same as Level "A" unless otherwise specified by SPI or the contracting activity.

5.2.4 Level C. Item will be packed in containers in such a manner as to afford adequate protection against physical damage during direct domestic shipment from the supply source to the first receiving activity. These packs shall conform to MIL-STD-2073-1B.

5.3 Marking. Unit, intermediate, and exterior containers shall be marked IAW special markings required by the contractor, SPI, and MIL-STD-129.

5.4 Inspection and test. Test of methods of preservation shall be accomplished IAW section 4 of MIL-P-116 to insure compliance with section 5 of this specification. Packaging tests shall be conducted IAW rough handling as specified in FED-STD-101.

6. NOTES

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

6.1 Intended use. Indicator, Low Approach ID-525/ARN is crossed pointer

MIL-I-25355B(USAF)

type instrument (pointers are perpendicular to each other at all times) providing indication from the localizer receiving equipment, from the glide slope receiving equipment, from a combination of the two, or from a VOR to show deviation on the vertical pointer. Indication is also provided for the marker beacon receiver. Flag alarms provide a warning of nonoperation of receiving equipment or ground transmitting equipment.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification
- b. Level of packaging and packing desired (see section 5)
- c. Point of delivery for first article test samples
- d. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1)

6.3 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 production item, a sample selected from the first production items or, a standard production item from the contractor's current inventory (see 3.1), and the number of items to be tested as specified in 4.4.

6.4 Subject term (key word) listing.

ID-525/ARN
Indicator
Low Approach
MIL-E-5400

6.5 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.

Custodian:
AIR FORCE -99

Preparing Activity:
AIR FORCE -71

Project No:
6610-F355

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-T-25355B	2. DOCUMENT DATE (YYMMDD) 930601
3. DOCUMENT TITLE <u>INDICATOR, INSTRUMENT LANDING, AIRPORT RUNWAY</u>			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (if applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME HARLENA EDWARDS		b. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON 336-5960	
c. ADDRESS (Include Zip Code) OC-ALC/TICLA TINKER AFB, OK 73145-3037		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	