

MIL-T-23733A(AS)
15 JANUARY 1968
 SUPERSEDING
 MIL-T-23733(WEP)
 15 JANUARY 1964

MILITARY SPECIFICATION

TRANSMITTER, RATE GYROSCOPE T-751()/AJB-3

This specification has been approved by the
 Naval Air Systems Command, Department of the Navy.
 *Asterisks indicate paragraphs changed from previous
 issue (See 6.7)

1. SCOPE

*1.1 Scope - The equipment covered by this specification shall provide an output signal as a function of the rate of turn of an aircraft.

1.2 Associated Equipment - This equipment shall operate with the associated equipment listed in 6.8.

2. APPLICABLE DOCUMENTS

*2.1 General - The following documents of the issue in effect on the date of invitation for bids, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal

BB-N-411 Nitrogen

Military

MIL-C-172 Cases; Bases, Mounting; and Mounts,
 Vibration (for use with Electronic
 Equipment in aircraft)

MIL-W-5008 Wiring; Aircraft, Installation of

MIL-E-5400 Electronic Equipment, Aircraft,
 General Specification for

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MIL-T-5422	Testing Environmental Aircraft Electronic Equipment
MIL-I-6181	Interference Control Requirements, Aircraft Equipment
MIL-E-17555	Electronic and Electrical Equipment and Associated Repair Parts, preparation for delivery of
MIL-T-18303	Test Procedures; preproduction and inspection, for Aircraft Electronic Equipment, format for
MIL-N-18307	Nomenclature and Nameplates for Aeronautical Electronic and Associated Equipment
MIL-C-23727	Computer Set, Loft Bomb Release AN/AJB-3A

STANDARDS

Federal

FED-STD-595	Colors
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Military

MIL-STD-704	Electric Power, Aircraft, characteristics and utilization of
MS17394	Transmitter, Rate Gyroscope T-751/AJB-3A
MIL-STD-781	Reliability Tests, exponential
MIL-STD-794	Parts and Equipment, procedures for packaging and packing of

Naval Air Systems Command

AR-5	Microelectronic Devices used in Avionics Equipment, procedures for selection and approval of
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*2.1.1 Availability of Documents

- (1) When requesting specifications, standards, drawings, and publications, refer to both title and number. Copies of this specification and applicable specifications required by contractors in connection with specific procurement functions may be obtained upon application to the Commanding Officer, Naval Supply Depot, Code 105, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120.

3. REQUIREMENTS

*3.1 Preproduction - This specification makes provision for preproduction testing.

*3.2 Parts and Materials - In the selection of parts and materials, fulfillment of major design objectives shall be the prime consideration. In so doing the following shall govern:

- (1) Microelectronic technology shall conform to requirements specified herein.
- (2) Other parts and materials requirements shall conform to Specification MIL-E-5400.
- (3) Nonrepairable subassemblies, as outlined in Specification MIL-E-5400, shall be used when practicable. The general size of the subassembly and the amount of circuitry to be included therein shall be approved by the procuring activity. Nonrepairable subassemblies must be reliable. (See 6.4)
- (4) When previously produced models of this equipment did not use nonrepairable subassemblies, the design shall not be changed to employ non-repairable assemblies without the approval of the procuring activity.

*3.2.1 Nonstandard Parts and Materials Approval - Approval for the use of nonstandard parts and materials (including tubes, transistors, diodes) shall be obtained as outlined in Specification MIL-E-5400. Microelectronic devices shall be approved as outlined in AR-5.

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*3.3 Design and Construction - The equipment shall conform with all the applicable requirements of Specification MIL-E-5400 for design, construction and workmanship, except as otherwise specified herein.

*3.3.1 Total Weight - The total weight of the equipment, excluding cables, shall be a minimum consistent with good design and shall not exceed 3.0 pounds.

3.3.2 Reliability -

*3.3.2.1 Operational Stability - The equipment shall operate with satisfactory performance, continuously or intermittently for a period of at least 20 hours without the necessity for readjustment of any controls which are inaccessible to the operator during normal use.

*3.3.2.2 Operating Life - The equipment shall have a total operating life of 15,000 hours with reasonable servicing and replacement of parts. Parts requiring scheduled replacement shall be specified by the contractor.

*3.3.2.3 Reliability in Mean Time Between Failures (MTBF) - The equipment shall have 5000 hours of mean (operating) time between failures when tested and accepted as outlined under the requirements of 4.4.3.

3.3.3 Cabling and Connections -

*3.3.3.1 Cables and Connectors - The equipments shall provide for the use of cables and connectors in accordance with Specification MIL-E-5400.

*3.3.3.2 Interconnection Cabling - The equipment shall be capable of satisfactory operation using external wiring in accordance with the applicable requirements of Specification MIL-W-5088. The external wiring shall be unshielded, except that a minimum number of the individual wires may be shielded when demonstrated as necessary to meet interference control requirements and provided the assembly of the cable to its plugs may be easily accomplished. External cables and that portion of the connectors attached to the cables shall not be supplied as part of the equipment.

*3.3.4 Interchangeability - Interchangeability shall be in accordance with MIL-E-5400.

*3.3.5 Interference Control - The generation of radio interference by the equipment and the vulnerability of the equipment to radio interference shall be controlled within the limits of Specification MIL-I-6181.

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3.5.1.3.1 Hermetic Sealing - The case shall provide a hermetically sealed enclosure for all of the mechanism. The case shall be so constructed that it may be opened, the mechanism removed and replaced and the rate gyroscope transmitter case resealed at least three times. This shall be possible without the use of any special tool, jig or fixture, unless such device is specifically approved by the procuring activity. The sealing of the case shall not be dependent upon any material which will be adversely affected by any atmosphere to which the instrument may be subjected in normal use in military aircraft.

***3.5.1.3.2 Filling Medium** - The filling medium shall be either a mixture of 90% nitrogen and 10% helium or 95% helium and 5% carbon dioxide. The nitrogen used shall be in accordance with Specification BB-N-411, Type I, Class I, Grade C. The filling medium shall contain not more than 0.006 milligram of water vapor per liter (dew point -65°C) at the filling pressure. The absolute pressure of the filling medium in the case shall be 1 ± 0.1 atmosphere.

***3.5.1.3.3 Leak Rate** - The gas or mixture of gases in the case, adjusted to a pressure differential of one atmosphere, shall not have a leakage from the case that would permit more than 10 percent contamination of the filling medium after 1000 hours.

***3.5.1.3.4 Hydraulic Medium** - The Hydraulic Filling Medium shall be Dow Corning 510 fluid or equivalent and shall be filtered so that maximum particle size shall not exceed 8.8 Microns diameter in the medium.

***3.5.1.4 Electrical Connections** - Connections to external circuits shall be provided as specified on MS17394. The connections shall conform to Table I.

TABLE I

<u>TERMINAL</u>	<u>FUNCTION</u>
A	Power Ground
B	115V, 400 cps single phase power
C	Output Signal
D	Output Signal
E	Power Ground
F	26V, 400 cps single phase power

***3.5.1.5 Installation Mounting** - Installation shall be with the connector end of the equipment facing forward in the aircraft.

***3.5.1.6 Undervoltage Protection** - The equipment shall not be damaged by voltages below the minimum specified herein and shall automatically resume normal operation when the voltage returns within the specified limits.

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*3.5.1.7 Signal Source Impedance - The signal source impedance shall be approximately 1,000 ohms.

*3.5.1.8 Operating Range - The rate gyroscope transmitter shall have an operating range ± 180 degrees per minute. Suitable stops shall be provided to limit the output and to prevent damage to the equipment when the operating range is exceeded.

*3.5.1.9 Natural Frequency - The rate gyroscope transmitter shall have a minimum undamped natural frequency of 5 cps.

3.5.1.10 Performance Characteristics - The performance characteristics of the rate gyroscope transmitter shall be as follows under standard conditions (3.3.8), and with a 1000 $\pm 1\%$ resistive load across the output terminals.

*3.5.1.10.1 Null Limits - With the rate gyroscope transmitter at rest, the output shall not exceed ± 7.5 micro-amperes.

*3.5.1.10.2 Output Signal - The output shall be as follows for rotation in either direction about the input axis.

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<u>Input</u>	<u>Output Milliampere</u>
180°/minute	1.000 <u>+8%</u>
90°/minute	0.500 <u>+9.5%</u>
45°/minute	0.250 <u>+12.5%</u>

The output tolerances shall be proportional to these values at all intermediate input rates.

*3.5.1.10.3 Signal Polarity - Pin C shall be positive with respect to Pin D for clockwise (right turn) input rates. Pin D shall be positive with respect to Pin C for counterclockwise (left turn) input rates.

*3.5.1.10.4 Damping Ratio - The damping ratio shall be between 8 and 12.

*3.5.1.10.5 Cross Coupling - When rotated about axes perpendicular to the input axis, the output shall be less than 1% of the value obtained when rotated at the same rate about the input axis.

*3.5.1.10.6 Resolution and Threshold - Both the resolution and the threshold shall be less than 0.015 degree per second.

*3.5.1.10.7 Hysteresis and Friction - The hysteresis and friction shall not exceed 1% of the maximum operating rate.

*3.5.1.10.8 Rate of Turn Signal Pickoff - The pickoff shall be so designed that no rubbing or contacting surfaces will be used. It shall be an E- or Microsyn-type pickoff, or equivalent.

*3.5.1.11 Performance at Temperature Extremes - The rate gyroscope transmitter shall perform as specified herein at temperature extremes except as follows:

*3.5.1.11.1 Null Limits - The output shall not exceed +14 microamperes.

3.5.1.11.2 Output Signal - An additional +3 1/2% shall be applied to the output signal tolerances. At 95°C operation, the additional tolerances shall be +7%.

4. QUALITY ASSURANCE PROVISIONS

*4.1 Responsibility for Inspection - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to 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.

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*4.1.1 Classification of Tests - Items covered by this specification shall be subjected to the following tests to determine compliance with all applicable requirements:

- (1) Preproduction (First Article) Tests
- (2) Initial Production Tests
- (3) Acceptance Tests
- (4) Life Tests

*4.2 Preproduction Tests - Preproduction tests shall be made on an equipment representative of the production equipments to be supplied under the contract. Preproduction tests shall be accomplished under the responsibility of the contractor and shall be conducted in accordance with the approved test procedure of 4.6. The government inspector and the procuring activity shall be advised when tests are to be conducted so that a representative may be designated to witness or supervise the tests when so desired. Contractors not having adequate facilities to conduct all required tests shall obtain the services of a commercial testing laboratory acceptable to the Government.

*4.2.1 Preproduction Test Data - The contractor shall submit all data collected in conducting these tests to the procuring agency for review and approval. On first production contracts this data shall include a list of all electrical and electronic parts giving their specified voltage current and temperature rating and the applied circuit voltage, current and ambient and surface temperatures. The ambient and surface temperature shall be obtained under the extreme high temperature operating condition.

*4.2.2 Scope of Tests - Preproduction tests shall include all tests deemed necessary by the procuring activity to determine that the equipment meets all the requirements of this Specification and the contract. Preproduction tests shall include environmental tests in accordance with the procedures of Specification MIL-T-5422 and interference tests in accordance with Specification MIL-I-6181.

*4.2.3 Preproduction Approval - Approval of the preproduction sample shall be by the procuring activity upon satisfactory completion of all tests. No production equipments shall be delivered prior to the approval of the preproduction sample. Prefabrication of production equipment prior to the approval of the preproduction sample is at the contractor's own risk. The approved preproduction sample shall be retained by the contractor for his use in the fabrication and testing of equipment to be submitted for acceptance. The preproduction sample shall not be considered as one of the equipments under the contract.

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*4.2.4 Production Equipments - Equipments supplied under the contract shall in all respects, including design, construction, workmanship, performance and quality, be equivalent to the approved preproduction sample. Each equipment shall be capable of successfully passing the same tests as imposed on the preproduction sample. Evidence of non-compliance with the above shall constitute cause for rejection and for equipment already accepted by the Government, it shall be the obligation of the contractor to make necessary corrections as approved by the procuring activity.

*4.3 Initial Production Tests - One of the first ten production equipments shall be selected and sent at the contractor's expense to a designated Government laboratory for tests. This equipment shall be selected by the procuring activity after the equipment has successfully passed all individual tests. The preproduction sample shall not be selected for this test.

*4.3.1 Scope of Tests - This equipment may be subjected to any and all tests the procuring activity deems necessary to assure that the production equipment is equivalent to the previously approved preproduction sample in design, construction, workmanship, performance and quality and that it meets all applicable requirements.

*4.3.2 Accessory Material - In addition to the complete equipment submitted for Initial Production Tests the contractor shall also submit such accessory material and data necessary to test the equipment.

*4.3.3 Initial Production Sample Approval - Approval of the Initial Production Sample shall be by the procuring activity upon satisfactory completion of all tests. Any design, material or performance defect made evident during this test shall be corrected by the contractor to the satisfaction of the procuring activity. Failure of the Initial Production Sample to pass any of the tests shall be cause for deliveries of equipment under the contract to cease until proper corrective action is approved and accomplished. Corrective action shall also be accomplished on equipment previously accepted when requested by the procuring activity.

*4.3.4 Reconditioning of Initial Production Test Sample - On completion of the initial production test the equipment shall be reworked by the contractor by replacing all wear or damaged items. After reworking, the contractor shall resubmit the equipment for acceptance.

*4.4 Acceptance Tests - The contractor shall furnish all samples and shall be responsible for accomplishing the acceptance tests. All inspection and testing shall be under the supervision of the government inspector. Contractors not having testing facilities satisfactory to the procuring activity shall engage the service of a commercial testing

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laboratory acceptable to the procuring activity. The contractor shall furnish test reports showing quantitative results for all acceptance tests. Such reports shall be signed by an authorized representative of the contractor or laboratory, as applicable. Acceptance or approval of material during the course of manufacture shall not be construed as a guarantee of the acceptance of the finished product. Acceptance tests shall consist of the following:

- (1) Individual Tests
- (2) Sampling Tests
- (3) Reliability Assurance Tests
- (4) Special Tests

*4.4.1 Individual Tests - Each equipment submitted for acceptance shall be subjected to the individual tests. These tests shall be adequate to determine compliance with the requirements of material, workmanship, operational adequacy and reliability. As a minimum, each equipment accepted shall have passed the following tests:

- (1) Examination of Product
- (2) Operational Test
- (3) Manufacturing Run-In Test

*4.4.1.1 Examination of Product - Each equipment shall be examined carefully to determine that the material and workmanship requirements have been met.

*4.4.1.2 Operational Test - Each equipment shall be operated long enough to permit the equipment temperature to stabilize and to check sufficient characteristics and record adequate data to assure satisfactory equipment operation.

*4.4.1.3 Manufacturing Run-In Test - Each equipment shall be operated under the conditions specified herein for a period of 10 hours without failure. A failure shall be defined as anything which causes malfunctioning of the equipment. Only those adjustments will be permitted which can be made by using such controls and adjustments that are accessible to the operator during the normal use of the equipment.

Temperature	Ambient room
Humidity	Ambient room
Vibration	Any selected frequency within the range of 20 to 30 cps (excluding resonant points) and a minimum amplitude of <u>+3</u> g's

The equipment shall be vibrated (without vibration isolators) for a period of 10 minutes prior to the beginning of the 10-hour period of operation. Where feasible, the equipment shall be operated during this vibration period

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for the purpose of detecting flaws and imperfect workmanship. Operation within the specified limits of satisfactory performance is not necessarily required during the vibration period. The direction of vibration should be vertical to the normal mounting plane for 5 minutes and lateral to the plane for 5 minutes. Where it is not feasible to vibrate the equipment in 2 directions the vertical direction shall be used. During the 10-hour period of operation following the 10-minute vibration period, the equipment shall be mechanically cycled periodically through its various phases of operation. Should a failure occur, it should be repaired and the test started over, except that the 10-minute vibration period need not be repeated when it is certain the failure was not a result of the vibration. Should repetitive failures occur, corrective action shall be taken to eliminate this defect from future equipment. A record shall be kept of all failures. The 10-hour period specified above may be composed of two 5-hour periods to conform with the standard working hours.

*4.4.2 Sampling Tests - Equipments selected for sampling tests shall first have passed the individual tests. Equipments shall be selected for sampling tests by the government inspector in accordance with the following: (Sampling tests shall not be conducted unless Reliability Assurance Tests of 4.4.3 are deleted by contractual action).

<u>Quantity of Equipments Offered for Acceptance</u>	<u>Quantity to be Selected For Sampling Test</u>
First 10	0*
Next 50	1
Next 75	1
Next 100	1
	1 for each additional 200 or fraction thereof

*NOTE: If by contract action the Initial Production Test (4.3) is deleted, then a Sample Test shall be conducted on one equipment from the first 10 produced.

*4.4.2.1 Scope of Tests - As a minimum, each equipment selected for sampling tests shall be subjected to the following tests:

- (1) Complete operational test at ambient room conditions, making all necessary measurements to assure that all applicable specification requirements have been met.
- (2) Operational test at certain environmental conditions. The conditions may vary for each equipment tested and should be based on results of the preproduction, initial production, individual and special tests.

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- (3) Manufacturing run-in test specified in paragraph 4.4.1.3 except that the test duration shall be 120 hours with no restriction on the number of failures. However, each failure shall be analyzed as to cause and remedial action necessary to reduce the possibility of its recurrence in future equipment.

*4.4.3 Reliability Assurance Tests - Reliability Assurance Tests shall be conducted using MIL-STD-781. Tests as required by both the Qualification Phase and the Sampling Phase shall be conducted.

*4.4.3.1 Qualification Phase - Prior to the acceptance of equipments under the contract or order, a minimum of three (3) equipments shall be tested as outlined in MIL-STD-781, under the section entitled "Qualification Phase of Production Reliability Tests". The maximum number of equipments to be used shall be those listed in Table 5 of MIL-STD-781. For the Qualification Phase, Test Level F shall be used. The Accept-Reject Criteria for Test Plan III shall be used.

*4.4.3.2 Reliability Sampling Phase Tests - Samples of the production equipment shall be tested as outlined in MIL-STD-781 (as modified herein), under the Section entitled "Sampling Phase of Production Reliability Tests". For the Sampling Phase (or All-Equipment Test), Test Level F shall be used.

*4.4.3.2.1 Lot Size for Sampling Phase - The equipments constructed during 1 month shall be one lot. The Accept-Reject criteria for Test Plan III shall be used to determine the length of the tests in each lot. Unless otherwise specified in the contract or order, no equipments shall be shipped until an Accept decision is reached under each lot.

*4.4.3.3 Test Details - The test details such as the length of the test cycle, the length of the heat portion of the cycle, the performance characteristics to be measured, special failure criteria, preventive maintenance to be allowed during the test, etc., shall be part of the test procedures to be submitted and approved by the procuring activity prior to the beginning of the Qualification Test Phase of the Reliability Assurance Tests.

*4.4.4 Special Tests - Special tests shall be conducted on a quantity of equipments for the purpose of checking the effect of any design or material change on the performance of the equipment and to assure adequate quality control. The equipment selected for special tests may be selected from equipments previously subjected to the sampling or reliability assurance tests.

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*4.4.4.1 Special Test Schedule - Selection of equipments for special tests shall be made as follows:

- (1) On an early equipment after an engineering or material change.
- (2) Whenever failure reports or other information indicate additional tests are required. (This will be determined by the procuring activity.)

*4.4.4.2 Scope of Tests - Special tests shall consist of such tests as approved by the procuring activity. Test procedures previously approved for the preproduction tests shall be used where applicable. When not applicable, the contractor shall prepare a test procedure and submit it to the procuring activity for approval prior to conducting the tests.

*4.4.5 Equipment Failure - Should a failure occur during either the sampling, reliability assurance or special tests, the following action shall be taken:

- (1) Determine the cause of failure.
- (2) Determine if the failure is an isolated case or design defect.
- (3) Submit to the procuring activity for approval, proposed corrective action intended to reduce the possibility of the same failure(s) occurring in future tests.
- (4) Where practical, include a test in the individual test to check all equipment for this requirement until reasonable assurance is obtained that the defect has been satisfactorily corrected.

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*4.5 Life Test - The contractor shall furnish all samples and shall be responsible for accomplishing the life test. The test shall be of 300-hours duration and shall be conducted on equipments that have passed the individual test. The life test shall be performed under the conditions specified in 4.5.1. The life test sample shall be selected by the government inspector in accordance with the following. (Equipments which have successfully passed the Initial Production Test, Sampling Tests, Reliability Tests, or Special Tests may be selected for life tests.) When reliability tests are conducted, the life test may be omitted if, during the reliability tests, a quantity of equipments equal to, or more than, that listed below receive at least 300 hours each of test time.

<u>Quantity of Equipments Offered for Acceptance</u>	<u>Quantity to be Selected for Life Test</u>
First 25	1
Next 175	1
Next 300	1
	1 for each additional 500 or fraction thereof

*4.5.1 Test Conditions - The life test shall be conducted under the following simulated service conditions.

Temperature	Normal room
Altitude	Normal ground (0 - 5000 ft.)
Humidity	Room ambient
A. C. Voltage	115 + 5 volts and 26 +1 volts (at lowest applicable frequency)

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*4.5.2 Test Periods - The test may be run continuously or intermittently. Any period of operation shall be of sufficient duration to permit the equipment temperature to stabilize. Periodically, the equipment shall be turned on and off several times and put through its various phases of operation.

*4.5.3 Performance Check - At approximately 8-hour intervals during the test, a limited performance check shall be made. The performance check proposed by the contractor shall be subject to approval by the procuring activity.

*4.5.4 Test Data - The contractor shall keep a daily record of the performance of the equipment, making particular note of any deficiencies or failures. In the event of part failures, the defective part shall be replaced and the operation resumed for the balance of the test period. A record shall be kept of all failures throughout the test, including all tube failures. This record shall indicate the following:

- (1) Part type number
- (2) The circuit reference symbol number
- (3) The part function
- (4) Name of the manufacturer
- (5) Nature of the failure
- (6) The number of hours which the part operated prior to failure

*4.5.4.1 Failure Report - In the event of a failure, the government inspector shall be notified immediately. A report shall be submitted to the procuring activity upon completion of the test. In this report, the contractor shall propose suitable and adequate design or material corrections for all failures which occurred. The procuring activity will review such proposals and determine whether they are acceptable.

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*4.6 Test Procedures - The procedures used for conducting preproduction tests, acceptance tests and life tests shall be prepared by the contractor and submitted to the procuring activity for review and approval. The right is reserved by the procuring activity or the government inspector to modify the tests or require any additional tests deemed necessary to determine compliance with the requirements of this specification or the contract. Specification MIL-T-18303 shall be used as a guide for preparation of test procedures. When approved test procedures are available from previous contracts such procedures will be provided and may be used when their use is approved by the procuring activity. However, the right is reserved by the procuring activity to require modification of such procedures, including additional tests, when deemed necessary.

*4.7 Reconditioning of Tested Equipment - Equipment which has been subjected to initial production, acceptance and life tests, shall be reconditioned by the contractor by replacing all wear or damaged items. After reworking the contractor shall resubmit the equipment for acceptance.

*4.8 Presubmission Testing - No item, part or complete equipment shall be submitted by the contractor until it has been previously tested and inspected by the contractor and found to comply, to the best of his knowledge and belief, with all applicable requirements.

*4.9 Rejection and Retest - Equipment which has been rejected may be reworked or have parts replaced to correct the defects and resubmitted for acceptance. Before resubmitting, full particulars concerning previous rejection and the action taken to correct the defects found in the original shall be furnished the government inspector.

5. PREPARATION FOR DELIVERY

*5.1 General - All major units and parts of the equipment shall be preserved, packaged, packed and marked for the level of shipment specified in the contract or order in accordance with Specifications MIL-E-17555 and MIL-STD-794. In the event the equipment is not covered in Specification MIL-E-17555, the method of preservation for Level A shall be determined in accordance with the selection chart in Appendix D of MIL-STD-794.

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6. NOTES

6.1 Intended Use - The rate gyroscope transmitter covered by this specification is intended for use in aircraft as a unit of the AN/AJB-3A Loft Bomb Release Computer Set.

6.2 Ordering Data - Purchasers should exercise any desired options offered herein, and procurement documents should specify the following:

- (1) Title, number, and date of this specification.
- (2) Selection of applicable levels of packaging and packing (see 5.1)

*6.3 Precedence of Documents - When the requirements of the contract, this specification, or applicable subsidiary specifications are in conflict, the following precedence shall apply:

- (1) Contract - The contract shall have precedence over any specification.
- (2) This Specification - This specification shall have precedence over all applicable subsidiary specifications. Any deviation from this specification, or from subsidiary specifications where applicable, shall be specifically approved in writing by the procuring activity.
- (3) Referenced Specifications - Any referenced specification shall have precedence over all applicable subsidiary specifications referenced therein. All referenced specifications shall apply to the extent specified.

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*6.4 Performance Objectives - Minimum size and weight, simplicity of operation, ease of maintenance, and an improvement in the performance and reliability of the specific functions beyond the requirements of this specification are objectives which shall be considered in the production of this equipment. Where it appears a substantial reduction in size and weight or improvement in simplicity of design, performance, ease of maintenance or reliability will result from the use of materials, parts and processes other than those specified in Specification MIL-E-5400, it is desired their use be investigated. When investigation shows advantages can be realized, a request for approval shall be submitted to the procuring activity for consideration. Each request shall be accompanied by complete supporting information.

*6.5 Non-Repairable Subassemblies - As a general rule non-repairable subassemblies should be encapsulated or hermetically-sealed. The number of connections internal to the subassembly should be held to a minimum. Detail parts tolerances and ratings should be so selected that the life of the subassembly is greater than that of a similar repairable one. With few exceptions (such as high voltage power supplies), the non-repairable subassembly should evidence a Mean-Time-to-Failure greater than 5000 hours, and for many applications this figure must be nearer 50,000 hours.

*6.6 Type Designations - The parentheses (), when used in the type designation, will be deleted or replaced by either a number or letter furnished by the procuring activity upon application by the contractor for assignment of nomenclature in accordance with 3.3.7. The complete type number shall be used on nameplates, shipping records and instruction books, as applicable.

6.7 Revisions - In specification revisions and superseding amendments an asterisk "" preceding a paragraph number denotes paragraphs in which changes have been made from the previous issue. This has been done as a convenience only and the government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content as written, irrespective of the asterisk notations and relationship to the last previous issue.

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*6.8 Associated Equipment - The equipment shall
operate with the following associated equipment.

<u>System</u>	<u>Type Designation</u>
Computer Set, Loft Bomb Release	AN/AJB-3A
Indicator, Attitude-Director	ID-811

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Naval Air Systems Command
Washington, D.C. 20360

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