MIL-D-18300G(AS)
1 MARCH 1970
SUPERSEDING
MIL-D-18300F(AS)
1 MARCH 1967

MILITARY SPECIFICATION

DESIGN DATA REQUIREMENTS FOR AVIONIC EQUIPMENT

This specification has been approved
by the
Naval Air Systems Command, Department of the Navy

1. SCOPE

1.1 Scope. The design data for avionic equipment required by this specification shall be furnished for each contract in which this specification is referenced. The items of design data to be supplied shall be furnished in accordance with Paragraph 6.2, unless specified otherwise in the contract.

2. APPLICABLE DOCUMENTS

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

SPECIFICATIONS

Military

MIL-W-5088	Wiring, Aircraft, Installation of
MIL-E-5400	Electronic Equipment, Aircraft, General Specification for
MIL-I-6181	Interference Control Requirements, Aircraft Equipment
MIL-C-6781	Control Panel: Aircraft Equipment, Rack or Console Mounted
MIL-P-7788	Plate, Plastic, Lighting
MIL-E-8189	Electronic Equipment, Guided Missiles, General Specification for

*See 6.5

MIL-R-18136	Research and Engineering Report, Format and General Requirement
MIL-R-18301	Reports: Contractor's Engineering for Aircraft Avionics Equipment
MIL-T-18303	Test Procedures, Preproduction and Inspection, for Aircraft Electronic Equipment, Format for
MIL-T-18306	Test Equipment and Test Bench Harness Requirements for Avionic Equipment and Guided Missile Contracts
MIL-N-18307	Nomenclature and Nameplates for Aeronautical Electronic and Associated Equipment
MIL-T-21200	Test Equipment for use with Electronic and Fire Control Systems, General Specification for
MIL-R-23094	Reliability Assurance for Production Acceptance of Avionic Equipment, General Specification for
MIL-T-23103	Thermal Performance Evaluation, Airborne Electronic Equipment, General Requirements for

Naval Air Systems Command

EI-1000	Avionics Installation Instruction, Format for
ET-1000	Avionics Bench, Preflight, and Flight Test Instructions, Format for
AV-2000	Outline for Preparation of Military Specifications for Aircraft Avionic Equipment
AV-3000	Outline for Preparation of Amendments to Military Specifications
AV-4000	Outline for Preparation of Military Specifications for Aircraft Avionic Support Equipment
AV-5000	Outline for Preparation of Military Specifications for Instruments

AR-5 Microelectronic Devices Used in Avionic Equipment, Procedures for Selection and Approval of

AR-10 Maintainability of Avionics Equipment and Systems, General Requirements for

AR-22 Aeronautical Requirements Format and Content of Formal Directives

AR-29 Frequency Allocation and Equipment Spectrum Signature, Requirements for

AR-30 Integrated Logistic Support Requirements for Aeronautical Systems and Equipment

AR-41 Technical Directive Development and Acquisition of Integrated Logistic Support for Aeronautical Weapon System Changes

WR-5 Support Equipment, Design, Approval, Selection and Ordering for Bureau of Naval Weapons Contracts

WR-97 Aircraft Electronic Equipment, Reliability Requirements for Design of

STANDARDS

Military

MIL-STD-15 Electrical and Electronic Symbols

MIL-STD-16 Electrical and Electronic Reference Designations

MIL-STD-243 Types and Definitions of Models for Communications-Electronics Equipment

MIL-STD-461 Electromagnetic Interference Characteristics Requirements for Equipments

MIL-STD-469 Radar Engineering Design Requirements, Electromagnetic Compatibility

MIL-STD-480 Configuration Control - Engineering Changes, Deviations and Waivers

MIL-STD-481 Configuration Control - Engineering Changes, Deviations and Waivers

MIL-STD-701 Preferred and Guidance List of Transistors

MIL-STD-704 Electric Power, Aircraft, Characteristics and Utilization of

MIL-STD-781 Reliability Tests, Exponential Distribution

PUBLICATIONS

Department of Defense

DSM-4120.3M Standardization Policies, Procedures and Instructions

Air Force - Navy Aeronautical Bulletins

No. 400 Electronic Equipment, Aircraft and Guided Missiles, Applicable Documents

*2.2 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, Publications and Forms Center, Code 105, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120.

(2) Copies of AV-2000, AV-3000, AV-4000 and AV-5000, Outline for Preparation of Specifications, may be obtained upon application to the Commander, Naval Air Systems Command, Washington, D. C. 20360, Attention: Avionics Division.

3. REQUIREMENTS

*3.1 Non-Standard Parts and Materials - All non-standard parts, materials and non-repairable subassemblies other than microelectronic devices selected for use in the equipment must be approved as required by MIL-E-5400. Microelectronic devices shall be approved as required by 3.4. The contractor need not await the approval prior to ordering or fabrication of the part or assembly; however, final approval of the non-standard item shall be obtained prior to delivery of any equipment required by the contract. The following are pertinent:

(1) The information to be supplied with each request shall be as outlined in MIL-E-5400. In the event a drawing is not available at the time the request for approval is submitted, the contractor's purchase specification may be substituted providing it completely describes the part or material. It is important that the forwarding letter itemize (preferably in an enclosure) the parts or materials by the contractor's part, drawing or specification number and that the source(s) be specified thereon. Non-repairable sub-assemblies construction details, such as parts used, trim locations, potting material, connectors, test points, thermal design, shielding, packaging, reliability life, electrical characteristics, etc., shall be included in the approval request.

(2) Unless otherwise stated, approval of non-electric hardware items used for mechanical applications (excluding vibration isolators and mounts) is not required.

(3) On contracts for reordered equipment(See 6.1.3) the contractor shall obtain approval only for use of any additional non-standard part or for parts supplied from sources other than those supplying previously approved non-standard parts.

Requests for approval of non-standard parts shall be sent to the following:

Commanding Officer
U. S. Naval Avionics Facility
Indianapolis, Indiana 46218
Attn: Code 445

With copy of forwarding letter to:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: AIR 533

3.2 This item deleted

*3.3 This item deleted

*3.4 Microelectronic Devices and Assemblies Data - All microelectronic devices and assemblies are subject to approval in accordance with the requirements of AR-5. Data submitted to obtain approval shall include a procurement specification, interchangeability demonstration plans and reports thereon. Requests for approval shall be submitted to:

Commanding Officer
U. S. Naval Ammunition Depot
Crane, Indiana 47522
Attn: QESM

With copy of forwarding letter to:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: AIR 533

*3.5 Test Procedures - The contractor shall prepare, in detail, test procedures which will outline step by step the methods which the contractor recommends for use in testing the equipment to determine that all contractual requirements have been met. The procedures will include any test called out in the detail equipment specification, and the applicable general design and the general environmental test specifications and such other tests necessary to determine that each applicable requirement has been met. The procedures will cover tests to be given to the complete equipment and will exclude tests called out in specifications covering parts, such as capacitors, resistors, etc. Design approval test procedures shall be prepared for development equipment and Preproduction (First Article) test procedures shall be prepared for Production equipment. These procedures shall include procedures for acceptance and life tests, where applicable. Acceptance test shall include individual, sampling, reliability and special tests as applicable. MIL-T-18303 shall be used as a guide in the preparation of the test procedures. Copies of each of the proposed procedures shall be submitted as indicated below for review and approval. For contracts for re-ordered equipment where the contractor is supplied test procedures from a previous contract, which have been approved for use on the present contract, the contractor needs to submit for approval only such revision pages to cover changes he may propose. Test procedures must be submitted in sufficient time to permit adequate review and approval prior to the start of testing. If not specified otherwise, the proposed procedures shall be submitted at least 60 days prior to the start of testing. The procedures shall be submitted as follows:

(1) Development and Service Test Equipment (Design Approval Test)

(a) One copy to:
Procuring Activity

(b) One copy to:
Commander
U. S. Naval Air Development Center
Warminster, Pennsylvania 18974

(2) Preproduction Equipment (Preproduction (First Article), Acceptance, Reliability, and Life Tests)

(a) Two copies to the Naval activity designated responsibility for administration of the tests. This will usually be #

Commanding Officer
U. S. Naval Avionics Facility
Indianapolis, Indiana 46218
Attention: Code 440

OR

Commanding Officer
U. S. Naval Ammunition Depot
Crane, Indiana 47522
Attention: Code QECA

NOTE. If the contractor has not been advised that a Naval activity has been designated responsibility for administration of the testing, the test procedures shall be sent to the procuring activity, Attention: Cognizant Technical Desk.

3.5.1 Approval of the test procedures shall be by the procuring activity or the Government activity designated this responsibility.

*3.5.2 After approval of the proposed procedures, an original and one copy of the final approved procedures shall be sent to the activity approving the procedures.

*3.6 This item deleted.

*3.7 Report on Contractor's Tests. The contractor shall prepare two copies of a report including the results of all tests conducted by the contractor on the design approval or preproduction (first article) model, as applicable. This report shall be submitted within five days after completion of all contractor tests. Reports shall be directed as follows:

(1) Design Approval Test

(a) One copy to:
Procuring Activity

(b) One copy to:
Commander
U. S. Naval Air Development Center
Warminster, Pennsylvania 18974

(2) Preproduction (First Article) Tests

(a) Two copies to the Naval activity designated responsibility for administration of the tests or, if no activity is designated, to the procuring activity, Attention: Cognizant Technical Desk

*3.8 Nomenclature, Identification Plates and Serial Number Prefix Letters. The contractor shall request assignment of nomenclature, (See 3.8.1), serial number prefix letters and approval of identification plate drawings to identify the equipment and major units to be furnished under the contract in accordance with MIL-N-18307. Requests shall be directed as follows:

(1) Assignment of Nomenclature

(a) Five (5) copies to:
Commanding Officer
Naval Air Engineering Center
Philadelphia, Pa. 19112 (Attn: WESO X-42)

(b) One (1) copy to:
Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: Code AIR 520

(2) Identification Plate Drawings

(a) Two (2) copies to:
The Cognizant Defense Contract Administration Services Officer
or Naval Plant Representative as appropriate

(3) Assignment of Serial Prefix Letters

(a) Two (2) copies to:
Commanding Officer
Naval Air Engineering Center
Philadelphia, Pa. 19112 (Attn: WESO X-42)

(b) One (1) copy to:
Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360 (Attn: Code AIR 520)

3.8.1 For contracts for re-ordered equipment, when there have been no modifications to the equipment which affect one way or two way interchangeability (see MIL-N-18307), a letter, with a statement to this effect, shall be submitted in lieu of the DD Form 61 nomenclature requests.

*3.9 Maintainability and Support Equipment Report - Within 90 days after the date of the contract, the contractor shall prepare and submit 4 copies of a report on the engineering approach to maintainability and test equipment requirements. This report shall be divided in two sections and shall be updated every 90 days to reflect any changes. These two sections shall be as follows:

Section 1 - A maintainability report in accordance with AR-10.

Section 2 - A support equipment report in accordance with MIL-T-18306, including the recommended common and peculiar support equipment for the following categories of maintenance support:

(a) Organizational
(b) Intermediate
(c) Depot

(The requirements of Section II of the report may be fulfilled by submission of data in accordance with WR-5 or AR-30)

*3.9.1 Approval of the Maintainability and Support Equipment Report. The maintainability and support equipment report shall be subject to approval by the procuring activity. The contractor shall be advised of approval or action required for approval. Upon approval of the report by the procuring activity, the contractor shall submit a proposal including a detailed cost breakdown and a preliminary specification prepared in accordance with MIL-T-18306 and AV-4000. This proposal shall include each item of special support equipment included in the approved report.

The four copies of this report shall be submitted as follows:

(3) Copies to:
Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: Cognizant Technical Desk

(1) Copy to:
Commanding Officer
U. S. Naval Ammunition Depot
Crane, Indiana 47522
Attn: Code QECA

3.10 Design Data to be supplied with Equipment submitted for tests. When the contractor is required to ship an equipment to a Naval Activity for tests the following data shall be included with the equipment.

(1) Two copies of external wiring diagram
(2) Two copies of a practical wiring diagram
(3) Two copies of a complete schematic diagram
(4) Two copies of over-all functional block diagram
(5) Two copies of outline dimensional sketches of all major units
(6) Two copies of brief operating instructions
(7) Two copies of a report of all tests conducted on the equipment by the contractor

*3.11 Equipment Specifications

3.11.1 Development Contracts (R&D). On R&D contracts the contractor shall prepare a MIL Specification written in sufficient detail to permit its use in the competitive procurement of production equipment. The specification shall specify all design and performance requirements including, where applicable, details and materials of construction. The specification shall reflect the model being provided under the R&D contract and shall include any additional requirements and characteristics which should be included in the production equipment. A preliminary draft of the specification shall be submitted 30 days prior to submission of the model for test. The final draft shall be submitted within 30 days after approval of the preliminary draft.

3.11.2 Production Contracts. On contracts for production equipment a MIL type specification shall be prepared reflecting the equipment produced on the contract. This will generally be a revision of the contract specification, corrected and expanded to include authorized changes, details and materials of construction, design and performance requirements and shall, in all respects, reflect the latest production equipment. The specification shall be in sufficient detail to permit its use in competitive procurement of additional equipment which will be electrically and mechanically interchangeable with the latest model of equipment produced. The preliminary draft shall be submitted 30 days after approval of the preproduction model or 30 days after delivery of the first equipment on the contract when a preproduction model is not required. The final draft shall be submitted within 30 days after receiving approval of the preliminary draft. Each contractor shall keep the specification up to date by submitting amendments or revisions to reflect any approved changes to the equipment during the contract. If there are no changes to the contract specification, the contractor shall submit a letter stating this fact.

*3.11.2.1 CFE Contracts (Weapon System) The contractor shall prepare and submit to the procuring activity, for approval, specifications covering each of the contractor furnished equipments or systems and related special support equipment. Preliminary drafts, except those for the support equipment, shall be submitted within 60 days after approval of the applicable aircraft detail

specification and shall be approved prior to the start of development or procurement. After approval of the equipment covered by the specification the contractor shall submit a MIL-type specification covering the equipment delivered (See 3.11.2). Each specification shall be kept up to date by revisions or amendments reflecting any changes to the equipment.

*3.11.3 Specification Preparation. In the preparation of specifications the latest outline for the preparation of Military Specifications (AV-2000, AV-3000, AV-4000, AV-5000 or Defense Standardization Manual 4120.3M, as applicable) shall be used as a guide. When the specification prepared is a revision to an existing MIL Specification, each of the paragraphs of the revised specification which reflect changes shall be identified by an (*) preceding the paragraph number.

An amendment may be submitted in lieu of a revision where the number of changes are relatively small and when approved by the procuring activity. Proper security classification should be assigned for the material involved. In classified specifications each paragraph must be marked, to indicate its security classification, with a (U), (C) or (S), as applicable, placed following the numerical designation, and immediately preceding the first word of the paragraph. A preliminary draft shall be submitted for review and, upon approval, a final draft shall be submitted for acceptance. The final draft shall be typed on a good grade of smooth white bond size 8 X 10½ inches. Preliminary and final drafts of specifications shall be sent as follows:

(a) Preliminary Drafts

(1) Copy to:
Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attention: Cognizant Technical Desk

(1) Copy to:
Activity which has responsibility for administration of the Preproduction or First Article tests. If no activity has been assigned this responsibility, then send to above address.

(b) Final Draft

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attention: Cognizant Technical Desk

*3.12 Installation Instructions (For Production Equipment only)
The contractor shall prepare and furnish a document covering the installation of the equipment under contract. This document shall be prepared in accordance with the latest issue of the Naval Air Systems Command, Avionics Installation Instruction EI-1000. One copy of a preliminary draft shall be submitted for review and approval prior to submitting the final draft for acceptance. The final draft shall be prepared on a good grade of smooth, white bond paper size 8 X 10½ inches. Photographic reduction paper size 10 X 15 (NAVAIR-2503 or equivalent) may be used in lieu of the 8 X 10½ bond, however, if the larger paper is used then type no smaller than standard pica shall be used. The preliminary draft shall be submitted 4 months prior to the delivery of the first equipment and the final draft within 30 days after approval of the preliminary draft. The drafts shall be submitted as follows:

(a) Preliminary Drafts
Activity which has responsibility for administration or the Preproduction or First Article tests. If no activity has been assigned this responsibility, then send to the address listed in (b) below.

(b) Final Draft

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attention: Cognizant Technical Desk

On the contracts for reordered equipment the contractor needs to submit only such revisions necessary to cover any changes resulting from changes incorporated in the equipment and not covered by the previously issued documents. If there are no changes, the procuring agency shall be advised in writing.

*3.13 Bench, Preflight and Flight Test (For Production Equipment Only)
The contractor shall prepare and furnish a document which outlines the procedures for accomplishing the necessary bench, preflight and flight tests. These tests are to determine that the equipment has not been affected by shipment and has been properly installed so that satisfactory equipment operation and performance is accomplished. Where possible the bench tests should be identical to or compatible with the individual acceptance tests. This document shall be prepared in accordance with the latest issue of the Naval Air Systems Command Avionics Instruction ET-1000. One copy of a preliminary draft shall be submitted for review and approval prior to submitting the final draft for acceptance. The final draft shall be prepared on a good grade of smooth white bond paper, size 8 X 10½ inches. The preliminary draft shall be submitted 3 months prior to delivery of first equipment and the final draft within 30 days after approval of preliminary draft. The drafts shall be submitted as follows:

(a) Preliminary Draft

Activity which has responsibility for administration of the Preproduction or First Article tests. If no activity has been assigned this responsibility, then send to the address listed in (b) below.

(b) Final Draft

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attention: Cognizant Technical Desk

On the contracts for reordered equipment the contractor needs to submit only such revisions necessary to cover any changes resulting from changes incorporated in the equipment and not covered by the previously issued documents. If there are no changes the procuring agency shall be advised in writing.

*3.14 Interim Engineering Reports. (Development contracts only) The contractor shall prepare and furnish quarterly 27 copies of an Interim Engineering Report prepared in accordance with MIL-R-18301. The reports shall be sent as follows:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360

(22 copies) Attention: Code AIR 604
(5 copies) Attention: Cognizant Technical Desk

*3.15 Final Engineering Reports. (Development contracts only) The contractor shall prepare and furnish 27 copies of a Final Engineering Report in accorance with MIL-R-18301. The reports shall be sent as follows:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360

(22 copies) Attention: AIR 604
(5 copies) Attention: Cognizant Technical Desk

*3.16 Drawing Requirements for Rack or Console Mounted Controls. The contractor shall prepare and submit to the Procuring Activity, Attention: Cognizant Equipment Engineer, one copy of drawings for each control unit (either GFE or CFE) designed in accordance with the applicable requirements of MIL-C-6781 for rack or console mounting in an aircraft. The drawings shall be submitted in sufficient time to permit review and approval prior to the fabrication of the control units. The drawings shall show the following information:

(1) All major outline dimensions, as defined in MIL-C-6781, including length, width, depth, location of mounting fasteners and dust cover. The location and type of connector (or pigtail when used) the depth dimension to the end of the attaching plug and cable clamp whether they are furnished with the equipment or not.

(2) Layout of front panel showing location of parts and subassemblies and giving the location, size and type of all lettering and markings proposed to be used, and details of the control knobs to be employed.

(3) Space utilization of all components of the control panel or unit. This information may be shown by means of a scale drawing (preferably full scale) showing the outline of the parts attached to the mounting plate.

On contracts for reordered equipment drawings are only required when a new or modified control is provided.

*3.17 Engineering Change Data. To obtain approval for an engineering change, the contractor shall submit an Engineering Change Proposal (ECP) giving the necessary information concerning the change. This applies for either a Procuring Activity recommended change or a contractor's proposed change. ECP's shall be prepared in accordance with MIL-STD-480 and 481 and may be initiated by the contractor or submitted upon request.

*3.17.1 Avionics Changes (Technical Directives). When an Engineering Change Proposal (ECP) is approved and is to be incorporated in equipment already delivered, the contractor shall prepare an Avionics Change. This Avionics Change shall be prepared in accordance with AR-22 and AR-41 and shall provide adequate information for incorporation of the change in previously delivered equipment. A preliminary draft shall be submitted for review no later than 120 days prior to the projected issue date and a final draft for acceptance at least 60 days prior to the projected issue date.

*3.17.2 Copies of both preliminary and final drafts of Engineering Change Proposals and Avionics Changes shall be sent to:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: Cognizant Engineer

*3.18 Frequency Allocation and Spectrum Signature Data. The contractor shall provide the Frequency Allocation data and the Spectrum Signature data and test plan as required by the Naval Air Systems Requirement AR-29. Copies of the data and test plan required by AR-29 shall be sent as follows:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: Avionics Division

*3.19 Reliability Reports. Whenever WR-97, MIL-R-23094, or MIL-STD-781 are applicable to the contract, an Interim, Phase or Final Reliability Report as outlined in the specification shall be furnished. Five copies of each report shall be forwarded to:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: Cognizant Technical Desk

One (1) information copy submitted to each of the following:

Commanding Officer
U. S. Naval Ammunition Depot
Crane, Indiana 47522
Attn: Code QECA

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: Code AIR 53355

*3.20 Electromagnetic Compatibility Plans. The contractor shall prepare and furnish four copies of the Interference Control Plan and the EMI/EMC Test Plan as required by MIL-STD-461 or MIL-I-6181 as applicable, and four copies of the Design Criteria Plan and the Test Plan as required by MIL-STD-469 (when MIL-STD-469 is applicable). Two copies shall be sent for review and approval to:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: Avionics Division

One (1) copy each submitted for review to:

Commander
U. S. Naval Air Development Center
Warminster, Pennsylvania 18974
Attn: Code AECC

Commander, Naval Air Test Center
Department of the Navy
Patuxent River, Maryland 20670
Attn: Code WST-32

*3.21 Cooling Design Data. Cooling design data, as described in MIL-E-5400, shall be submitted on development and first production contracts no later than three (3) months from the date of the contract. Data from the thermal evaluation test program as specified in MIL-E-5400 shall be in accordance with MIL-T-23103. For re-ordered equipment involving redesign, the contractor must submit sufficient test data per MIL-T-23103 to insure that the equipment cooling is unimpaired. Two copies shall be submitted to:

Commander
U. S. Naval Air Development Center
Warminster, Pennsylvania 18974
Attn: Code AEHT

*3.22 Electromagnetic Compatibility Reports. The contractor shall prepare and furnish four copies of the Test Report as defined and required by MIL-STD-461, and four copies of the Test Report as defined and required by MIL-STD-469 (when MIL-STD-469 is applicable). Two copies shall be submitted for review and approval to:

Commander, Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: Avionics Division

One (1) copy each submitted for review to:

Commander
U. S. Naval Air Development Center
Warminster, Pennsylvania 18974
Attn: Code AECC

Commander, Naval Air Test Center
Department of the Navy
Patuxent River, Maryland 20670
Attn: Code WST-32

4. QUALITY ASSURANCE PROVISIONS

(Not Applicable)

5. PREPARATION FOR DELIVERY

5.1 General. The design data required by this specification shall be adequately packaged to insure safe delivery at destination and to meet security regulations when classified.

6. NOTES

6.1 Definitions.

6.1.1 Definition of Terms. The terms "developmental model", "production model", etc., as used herein are in accordance with the definitions in MIL-STD-243.

6.1.2 Avionic Equipment. The word "avionics" is a contraction of the term "aviation electronics". As used herein the term "avionic equipment" is applied to all airborne and associated electronic equipment.

*6.1.3 Reordered Equipment. Is the reprocurement of equipment previously produced either from the same or a different contractor.

*6.2 Design Data Items Required. Unless specified otherwise in the contract, the following design data items shall be supplied by the contractor (See Table I).

(1) Development Contracts. Items 1, 4, 5, 7, 8, 9, 10, 11, 14, 15, 16, 18, 19, 20, 21 and 22.

(2) First Production Contracts. Items 1, 4, 5, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, and 22.

(3) Subsequent Production Contracts - Reprocurement (Same or Different Producer)

(a) Items 7, 20 and 22 are required.

(b) Items 1, 4, 5, 8, 10, 11, 12, 13, 16, 17, 19 and 21 may be required under certain conditions, as follows:

Item 1 - Required only when there are additions or changes to previously approved non-standard parts list.

Item 4 - Not required if contractor prepared specifications exist, are accurate and current, and if demonstrated sources still exist and have certified that they will provide devices at reasonably competitive prices.

Item 5 - Not required when test procedures from a previous contract are approved for use on present contract, in which case the contractor shall submit for approval only revision pages to cover such changes the contractor may propose. If previously used procedures are not approved for use on the present contract, the contractor must submit complete procedures for approval.

Item 8 - Serial number prefix letters and nameplate approval are required for each contract. However, if there have been no engineering changes or other modifications affecting interchangeability, a letter requesting confirmation of existing nomenclature shall be submitted in lieu of a DD Form 61.

Item 10 - Required only when the equipment is to be tested at a Government activity.

Items 11, 12, and 13 - Required only when a revised MIL Specification, EI, or the ET is necessary to accurately reflect the equipment produced. When no changes to the existing documents are required, no submission will be necessary. The Procuring Activity should be so advised in writing.

Item 16 - Required only when a new or modified control is provided.

Item 17 - Required only when an engineering change has been recommended for the equipment.

Item 19 - Required only when reliability requirements are specified.

Item 21 - Required only if equipment is redesigned.

(4) CFE Contracts (Weapon System) Items. 1, 4, 5, 7, 8, 9, 11, 19, 20, 21 and 22.

6.2.1 Submission of Design Data. Design data shall be submitted as specified in the individual paragraphs and Table I. A copy of each forwarding letter shall be sent to the cognizant procurement desk. Table II is for the convenience of maintaining a record on the status of the design data items to be supplied.

6.3 Non-standard Parts and Materials. The requirements of Paragraph 3.1 are intended to apply wherever MIL-E-5400, MIL-E-8189 or MIL-T-21200 are referenced to control the general requirements for the design and manucacture of airborne and associated electronic equipment.

6.4 Prior to the preparation of a specification, it is desirable for the contractor to discuss the content and latest format with the project and specification personnel of the Naval Air Systems Command. The outline of form AV-2000 is applicable for most specifications covering electronic type equipment. AV-4000 is applicable for electronic special support equipment. AV-5000 is for instruments.

6.5 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.

TABLE I

SUMMARY OF DESIGN DATA REQUIREMENTS (SEE 6.2)

Item	Required Data	Appl. Par.	When Required
1	Information on Non-Standard Parts	3.1	As soon as possible after selection of parts, and prior to procurement or fabrication of the parts.
2	Deleted	3.2	
3	Deleted	3.3	
4	Microelectronics Data	3.4	As soon as possible, and prior to procurement or fabrication of device. (See AR-5)
5	Test Procedures	3.5	
	(1) Recommended Test Procedures		As soon as possible, but no later than 60 days prior to submission of model to be tested.
	(2) Final Approved Test Procedures		Submit after review and approval of recommended test procedure but no later than 10 days prior to submission of model to be tested.
6	Deleted	3.6	
7	Report on Contractor's Tests	3.7	Submit report within five days after completion of all tests.
8	Nomenclature, Identification Plates and Serial Number Prefix Letters	3.8	

TABLE I (Continued)

SUMMARY OF DESIGN DATA REQUIREMENTS (SEE 6.2)

Item	Required Data	Appl. Par.	When Required
	(1) Requests for Nomenclature Assignment		As soon as possible but no later than 120 days prior to the need for use in specifications, drawings, identification plates, etc.
	(2) Approval of Identification Plate Drawings		No later than 30 days after receipt of nomenclature assignment.
	(3) Assignment of Serial Prefix Letters		Concurrent with earliest requests for nomenclature assignment.
9	Maintainability and Support Equipment Report	3.9	Not later than 90 days after date of contract, submit a preliminary report. Preliminary specification must be submitted and approved prior to fabrication of the design approval or preproduction model.
10	Design Data to be Supplied with Equipment Submitted for Testing	3.10	Must accompany the model submitted for test.
11	Equipment Specifications	3.11	
	(1) GFE Development Contracts		Submit preliminary draft 30 days prior to submission of design approval model. Submit final draft within 30 days after approval of the preliminary draft.
	(2) Production Contracts		Submit preliminary draft within 30 days after approval of preproduction model or 30 days after delivery of first production equipment if preproduction tests are not required. Submit final draft within 30 days after approval of preliminary draft.

TABLE I (Continued)

SUMMARY OF DESIGN DATA REQUIREMENTS (SEE 6.2)

Item	Required Data	Appl. Par.	When Required
	(3) CFE Contracts (Weapon System)		Submit preliminary drafts within 60 days after approval of applicable aircraft detail specification. Submit final draft after approval of the equipment covered by the specification.
12	Installation Instructions	3.12	
	(1) Preliminary Draft		Submit at least 4 months prior to delivery of first production equipment to permit review and approval.
	(2) Final Draft		Submit within 30 days after approval of the preliminary draft.
13	Bench, Preflight and Flight Test Instructions	3.13	
	(1) Preliminary Draft		Submit at least 3 months prior to delivery of first production equipment to permit review and approval for final draft.
	(2) Final Draft		Submit within 30 days after approval of preliminary draft
14	Interim Engineering Reports	3.14	Submit quarterly not later than the fifth day of the reporting month.
15	Final Engineering Reports	3.15	Submit concurrent with final model of the equipment.
16	Control Panel Drawings	3.16	As soon as possible, but must be submitted and approved prior to fabrication of the control for design approval or preproduction tests.

TABLE I (Continued)

SUMMARY OF DESIGN DATA REQUIREMENTS (SEE 6.2)

Item	Required Data	Appl. Par.	When Required
17	Engineering Change Data	3.17	
	(1) Engineering Change Proposals		To be initiated by contractor or submitted upon request.
	(2) Avionics Changes		Submit preliminary draft no later than 120 days prior to projected issue date and final draft at least 60 days prior to projected issue date
18	Frequency Allocation and Spectrum Signature Data	3.18	
	(1) Frequency Allocation Data (DD-1494)		Within 30 days after any one of the conditions described in AR-29 is found to exist.
	(2) Test Plan for Spectrum Signature Measurements		No later than 60 days prior to start of measurements.
	(3) Spectrum Signature Data		Prior to termination of contract.
19	Reliability Reports	3.19	As outlined in the applicable reliability specification.
20	Electromagnetic Compatibility Plans	3.20	
	(1) Interference Control Plan MIL-STD-461		Within 90 days after contract award.
	(2) EMI/EMC Test Plan MIL-STD-461		No later than 60 days prior to start of testing.

TABLE I (Continued)

SUMMARY OF DESIGN DATA REQUIREMENTS (SEE 6.2)

Item	Required Data	Appl. Par.	When Required
20	(3)Design Criteria Plan (MIL-STD-469)		Within 90 days after contract if MIL-STD-469 is applicable.
	(4)Test Plan (MIL-STD-469)		No later than 60 days prior to start of testing if MIL-STD-469 is applicable.
21	Cooling Data	3.21	As soon as possible, but not later than 3 months from date of contract.
22	Electromagnetic Compatibility Reports	3.22	
	(1)Test Report (MIL-STD-461)		Must be submitted and approved prior to termination of contract.
	(2)Test Report (MIL-STD-469)		Must be submitted prior to termination of contract if MIL-STD-469 is applicable.

TABLE II

STATUS OF DESIGN DATA ITEMS

Item	Required Data	Submission Date	Approved Date	Remarks
1	Information on Non-standard Parts			
2	Deleted			
3	Deleted			
4	Microelectronics Data			
5	Test Procedures			
	(1) Recommended Test Procedures			
	(2) Final Approved Test Procedures			
6	Deleted			
7	Report on Contractor's Tests			
8	Nomenclature, Ident. Plates, Serial Prefix Letters			
9	Maintainability and Support Equipment Report			
10	Design Data to be Supplied with Equipment Submitted for Testing			
11	Equipment Specifications			
	(1) Preliminary Draft			
	(2) Final Draft			
12	Installation Instructions			
	(1) Preliminary Draft			
	(2) Final Draft			

TABLE II (Continued)

STATUS OF DESIGN DATA ITEMS

Item	Required Data	Submission Date	Approved Date	Remarks
13	Bench, Preflight and Flight Test Instructions			
	(1) Preliminary Draft			
	(2) Final Draft			
14	Interim Engineering Reports			
15	Final Engineering Reports			
16	Control Panel Drawings			
17	Engineering Change Data			
18	Frequency Allocation and Spectrum Signature Data			
	(1) Frequency Allocation Data (DD-1494)			
	(2) Test Plan for Spectrum Signature Measurements			
	(3) Spectrum Signature Data			
19	Reliability Reports			
20	Electromagnetic Compatibility Plans			
	(1) Interference Control Plan			
	(2) EMI/EMC Test Plan			
	(3) Design Criteria Plan			
	(4) Test Plan			

TABLE II (Continued)

STATUS OF DESIGN DATA ITEMS

Item	Required Data	Submission Date	Approved Date	Remarks
21	Cooling Data			
22	Electromagnetic Compatibility Reports			
	(1) Test Report (MIL-STD-461)			
	(2) Test Report (MIL-STD-469)			

OTHER DATA SPECIFIED IN THE CONTRACT*

Contract Item No.	Data	Submission Date	Approval Date	Remarks
	Engineering Drawings			
	Handbooks			
	Other (Specify)			

*To be shipped to designations specified in contract.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1973-713-158/376

SPECIFICATION ANALYSIS SHEET

Form Approved
Budget Bureau No. 119-R004

INSTRUCTIONS

This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity *(as indicated on reverse hereof)*.

SPECIFICATION
MIL-D-18300G(AS) Design Data Requirements for Avionic Equipment

ORGANIZATION *(Of submitter)*	CITY AND STATE

CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT
		$

MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.

2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. IS THE SPECIFICATION RESTRICTIVE?

☐ YES ☐ NO IF "YES", IN WHAT WAY?

4. REMARKS *(Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)*

SUBMITTED BY *(Printed or typed name and activity)*	DATE

DD FORM 1 APR 63 1426

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