MIL-D-8684B(AS)
28 April 1967
Superseding
MIL-D-8684A(Aer)
6 October 1959

MILITARY SPECIFICATION

DATA AND TESTS, ENGINEERING: CONTRACT REQUIREMENTS

FOR

AIR LAUNCHED GUIDED MISSILE SYSTEMS

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

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont)

TABLE OF CONTENTS (Cont)

TABLE OF CONTENTS (Cont)

MILITARY SPECIFICATION
DATA AND TESTS, ENGINEERING: CONTRACT REQUIREMENTS
FOR
AIR LAUNCHED GUIDED MISSILE SYSTEMS

1. SCOPE

1.1 SCOPE. - This specification contains the requirements for engineering data and tests to be furnished under contracts for air launched guided missile systems.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVITY OF DOCUMENTS. - The following documents form a part of this specification. Unless otherwise indicated in the applicable addendum to this specification, the issue in effect on date of invitation for bids shall apply.

2.1.1 SPECIFICATIONS

MILITARY

MIL-S-901	Shock Tests (Hign Impact), Shipboard Machinery
MIL-D-1000/1	Drawings, Engineering and Associated Data
MIL-W-3947	Weight and Balance Control Data for Guided Missiles and Space Launch Vehicles
MIL-E-5400	Electronic Equipment, Aircraft, General Specification for
MIL-T-5422	Testing, Environmental Electronic Equipment
MIL-D-5480	Data, Engineering and Technical, Reproduction thereof
MIL-P-5518	Pneumatic System; Aircraft Design, Installation and Data Requirements for
MIL-I-6051	Electrical-Electronic System Compatibility and Interference Control Requirements for Aeronautical Weapon Systems, Associated Subsystems and Aircraft
MIL-I-6181	Interference, Controlled Requirements, Aircraft Equipment
MIL-E-7016	Electrical Load and Power Source Capacity, Analysis of; Method for Aircraft and Missiles
MIL-F-7179	Finishes and Coating, General Specification for Protection of Aerospace Weapon Systems, Structures and Parts
MIL-H-7700	Manuals: Flight

2.1.1 (Cont)

MILITARY (Cont)

MIL-E-8189	Electronic Equipment, Guided Missiles, General Specification for
MIL-I-8500	Interchangeability and Replaceability of Component Aircraft and Missiles
MIL-A-8868	Airplane Strength and Rigidity Data and Report
MIL-A-8870	Airplane Strength and Rigidity Vibration, Flutter and Divergence
MIL-M-8910	Manuals, Technical; Illustrated Parts Breakdown and Preparation of
MIL-M-9878/1	Cards, Tabulating and Microfilm
MIL-I-16910	Interference Measurement, Radio, Methods and Limits, 14 Kilocycles to 1000 Megacycles
MIL-R-18136	Research and Engineering Report; Format and General Requirements
MIL-D-18243	Demonstration of Air Launched Guided Missile Systems and all Target Guided Missile Systems; General Specification for
MIL-H-18248	Handbooks; Maintenance Instruction(Aircraft)
MIL-D-18300	Design Data Requirements for Avionic Equipment
MIL-N-18307	Nomenclature and Nameplates for Aeronautical Electronic and Associated Equipment
MIL-M-18828	Mockups; Construction of: for Target Drones and Guided Missiles
MIL-M-20800	Manuals, Technical, Atomic Weapons(Nuclear)
MIL-P-21018	Preparation of Standard Aircraft Characteristics Charts and Performance Data for Guided Missiles
MIL-H-21287	Handbook; Maintenance Instructions (For Air Launched Guided Missiles)
MIL-H-21288	Handbook; Assembly and Checkout Instructions (For Air Launched Guided Missiles)
MIL-H-21374	Handbook; Loading and Unloading Instruction (For Air Launched Guided Missiles)
MIL-H-22174	Human Factors Data for Aircraft & Missile System
MIL-S-23069	Safety Requirements, Minimum, for Air Launched Guided Missiles
MIL-P-23189	Pert/Time and Pert/Cost Management Information System for Planning and Control
MIL-D-23660	Data, Technical, for Rocket Motors
MIL-P-25062	Parachute Recovery Systems, Missile and Drone, General Requirements for Development of
MIL-H-25475	Hydraulic Systems, Missile, Design, Installation, Tests and Data

2.1.2 STANDARDS

MILITARY

MIL-STD-15	Graphic Symbols for Electrical and Electronic Diagrams
MIL-STD-100	Engineering Drawing Practices
MIL-STD-167	Mechanical Vibrations of Shipboard Equipment
MIL-STD-176	Weight and Balance Data Reporting Forms for Guided Missiles and Space Launch Vehicles
MIL-STD-704	Electric Power, Aircraft, Characteristics and Utilization of
MIL-STD-838	Lubrication of Military Equipment
MIL-STD-1304	Reliability Reports

2.1.3 PUBLICATIONS

WEAPON REQUIREMENTS

WR-8	Revised Pages for Aircraft Contract Detail Specification
WR-11	Design and Test of Packaging, Packing, Shipping and Handling Equipment for Weapon System Components
WR-29	Compatibility, Frequency Allocation and Equipment Spectrum Signature; Requirements for
WR-43	Preparation of Quality Assurance Provisions
WR-62	Naval Weapons Requirements Specifications and Standards: Use of

(When requesting specifications, standards, drawings, and publications refer to both title and number. Copies of this specification and applicable specifications, standards, drawings, and publications may be obtained upon application to the Commanding Officer, Naval Aviation Supply Depot, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120)

2.2 OTHER PUBLICATIONS. - The following documents form a part of this specification. Unless otherwise indicated in the applicable addendum to this specification, the issue in effect on date of invitation for bids shall apply.

2.2.1 STANDARDIZATION MANUALS

M200	Standardization Policies, Procedures and Instructions

(Application for copies of the above manual should be addressed to Commanding Officer, Naval Supply Depot, 5801 Tabor Ave., Phila., Pa. 19120).

2.2.2 CATALOGING HANDBOOK

H-6 Federal Item Identification Guides for Supply Cataloging

(Application for copies of the above handbook should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402).

2.2.3 FORMS

NAVWEPS 4200/25 Engineering Drawings and Associated Data Requirements
DD-816 Electron Tube Complement Report for Armed Services Equipment (Including Semiconductor Devices)
DD-1423 Contract Data Requirements List
NAVAIR-13100/4 Missile Characteristic Chart

(Copies of the above form should be obtained from the local Government representative).

2.2.4 LISTS

NAVAIR 16-I-525 Preferred Standard Test Equipment for Naval Aircraft and Guided Missile Electronics Equipment

(Application for copies of the above list should be addressed to Officer in Charge, Naval Air Technical Services Facility, 700 Robbins Ave., Phila., Pa. 19111)

2.2.5 DOCUMENTS

IRIG Document No. 102-61
IRIG Standard Coordinate System and Data Format for Antenna Patterns

(Application for copies of the above document should be addressed to: Secretariat, Range Commanders Council, White Sands Missile Range, New Mexico 88002)

INDUSTRY STANDARDIZATION DOCUMENT
ASA Y32.16 - 1965
Electrical and Electronics Reference Designations

(Application for copies of the above document should be addressed to: American Standards Association, Inc., 10 East 40th St., New York, New York 10016)

2.3 USE OF SPECIFICATIONS AND STANDARDS. - Use of specifications and standards by design activities shall be in accordance with WR-62. Approval of contractor documents for a specific contract shall not constitute approval for other contracts held by the same contractor or for contracts held by other contractors.

3. REQUIREMENTS

3.1 ACTION. - Action required by NAVAIR, local Government representative (LGR), etc., on engineering data and tests for air launched guided missile systems shall be as specified in paragraph 4.2.2 and Table I. NAVAIR acceptance or release action as indicated in Table I may be delegated to the local Government representative at the discretion of NAVAIR.

3.1.1 DATA TO BE FURNISHED. - No data is required by this specification or by applicable documents referenced in Section 2, unless specified in the contract or order. Data to be furnished shall consist of that listed on the completed DD Form 1423 referenced in or made a part of the contract, unless otherwise specified in the contract.

3.2 QUANTITY, TYPE AND DISTRIBUTION

3.2.1 QUANTITY. - Quantity of design data required shall be as specified in Table I.

3.2.2 TYPE. - Type of engineering data required shall be as specified in Table I. The data and drawings shall be furnished as follows:

(1) Non-drawing data, non-reproducible copies, shall be in accordance with Specification MIL-D-5480, Type I, Class 1.

(2) Non-drawing data, reproducible copies, shall be in accordance with Specification MIL-D-5480, Type I, Class 2.

(3) Drawings, non-reproducible copies, shall be in accordance with Specification MIL-D-5480, Type II, Class I.

(4) Drawings, reproducible, shall be in the form of microfilm in accordance with 3.4.49.

3.2.3 DISTRIBUTION. - Distribution shall be as specified in Table I.

3.3 REPORTS. - All reports shall be in accordance with Specification MIL-R-18136.

3.4 ENGINEERING DATA REQUIRED. - The following engineering data are required.

3.4.1 PROGRAM MASTER PLAN. - A program master plan, designed to fulfill the basic programming requirements of NAVAIR and the contractor, shall be submitted. The plan shall be furnished in a ring binder suitable for the insertion of new and revised pages. The plan shall include:

(1) Brief description of the missile system.

(2) A statement indicating the government-furnished equipment required including quantities, intended use and justification therefor.

(3) A statement indicating the government facilities required including intended use and justification therefor.

(4) A statement of program status in relation to schedules.

(5) Master schedule showing the following as applicable for the system and for each of the major components of the system (e.g. missile, missile control system or control central, missile auxiliaries, launcher, handling equipment, checkout equipment, packaging, trainers and facilities):

(a) R&D contract award
(b) Mockup approved
(c) Delivery of first developmental model
(d) First flight
(e) Initiation of contractor's demonstration
(f) Initiation of Navy technical evaluation
(g) Initiation of Navy operational evaluation
(h) Production contract award
(i) First production model delivered
(j) Fleet release

(6) A component development schedule showing the following as applicable for each item listed in the Master schedule with appropriate component breakdown (e.g. for the missile; airframe, guidance, propulsion, etc.):

(a) R&D contract award
(b) Mockup approved
(c) Development Model completed

3.4.1 (Cont)

(6) (Cont)

(d) First flight or test of equipment
(e) Production prototype completed
(f) Design approval tests
(g) Production configured equipment available for Navy technical evaluation

(7) Detailed scheduled charts showing:

(a) When government-furnished equipments will be required
(b) The schedule for each of the development phases, test and study areas described in the program planning report of 3.4.2
(c) Design, fabrication and delivery of each block of missiles and supporting equipment
(d) Target dates in connection with each planned procurement for each of the following:

(1) All specifications required for initiation of procurement
(2) Request for Proposal from NAVAIR to contractor
(3) Submission of proposal by contractor
(4) Contract award in order to meet projected delivery schedule

(8) Allocation charts for equipment to be delivered

(9) Summary of existing contract items

(10) Graphical and tabular fiscal summary for each existing contract including projected expenditure rate.

The master plan shall incorporate schedules covering a period of at least two years subsequent to the current fiscal year. The plan shall be updated or reissued at least quarterly to reflect the latest status of the program.

The following statement shall be incorporated in a foreword or introduction in the report:

"It is the purpose of this Master Plan to present, in one volume, a general picture of the scope of the program and sufficient schedule information to enable orderly future planning of the system by the contractor and NAVAIR personnel.

3.4.1 (Cont)

Care should be exercised by persons using this Master Plan in that future quantities quoted are only estimates and as such do not necessarily reflect the actual requirements of the government.

Schedules are subject to revision without notice. Acceptance of this report does not imply concurrence in schedules and quantities by the Government nor should they be used in any way by the contractor to commit or obligate funds."

3.4.2 DEVELOPMENT PROGRAM PLANNING REPORT. - A development program planning report shall be submitted. The report shall be furnished in a ring binder suitable for the insertion of new and revised pages. The report shall include:

(1) A brief summary of the development program plan and a detailed description of the following phases of the program:

(a) Initial Design Phase which shall encompass the development of the basic missile system design and associated data through mockup.

(b) Prototype Development Phase which shall encompass the development from the Initial Design Phase through the construction of a functional prototype.

(c) Preflight and Serviceability Phase which shall encompass the development from the functional prototype through the construction of working models.

(d) Evaluation Phase which shall encompass the continued development and testing of working models to contractor's demonstration.

(e) Contractor's Demonstration which shall include a brief description of the plans for, and facilities required for the contractor's demonstration. Duplication of the details of 3.4.46 is not required.

(f) Product Improvement Phase which shall encompass the development work to eliminate deficiencies and incorporate improvements considered necessary as a result of the Navy's technical evaluation.

3.4.2 (Cont)

(2) The above description shall include but not necessarily be limited to the scope and general procedures to be followed in each of the following areas:

Development Tests
Reliability Tests (Contractor may refer to the report required by 3.4.6)
General Flight Tests
Captive Flight Tests
Missile Launchings
Ground Handling Studies
Interagency Liaison
Safety Tests

(3) The planning report shall provide for program check points designed to promote orderly technical monitoring of the contractor's development program. These check points shall include those specified in 3.4.10.

3.4.3 ENGINEERING REPORT. - An engineering report shall be furnished presenting evidence of the accomplishment of successive steps that constitute the engineering process. The report shall be prepared in four parts as follows:

Part I Problem Definition
Part II Analytical Solution
Part III Mechanization Report
Part IV Verification Report

3.4.3.1 PROBLEM DEFINITION (PART I). - Part I of the engineering report shall consist of a complete definition of the problem that the system is required to solve. The definition shall contain a clear statement of all of the system boundaries. The definition shall include a quantitative statement of the measure of effectiveness for measuring the degree of success of the system in solving the problem defined for the system to solve. This measure of effectiveness shall have the following characteristics:

(1) It shall truly measure the system's effectiveness
(2) It shall be quantitative
(3) It shall be statistically efficient
(4) It shall be complete
(5) To a degree consistent with the above, it shall be simple; it shall have physical meaning; and it should lead to some idea of the theoretical limits and variability.

3.4.3.1 (Cont)

The definition shall define the problem to be solved under all the various aspects of fleet usage of the system. The problem definition shall include a listing of all technical requirements bearing on the merit of the equipment to be developed including a definition of all technical requirements. The source of each requirement shall be indicated. The problem definition shall enumerate all assumptions made with a statement of justification for each. Those requirements which constitute outputs of the system shall be so identified, and the requirements of compatibility with other systems or equipments imposed on these outputs shall be stated. Those requirements which constitute inputs into the system shall be completely listed and categorized according to whether they are fixed inputs or variable inputs. The requirements which constitute constraints shall be separately listed and shall include constraints imposed by the tactical environment, the physical environment, the logistics environment and the maintenance environment, including the maintenance philosophy and test equipment. While it is envisioned that the Navy Department will prepare the basic Problem Definition, and will incorporate it as part of the contract specifications, the contractor shall be required to review this basic Problem Definition to determine if the requirements stipulated by the contract technical requirements and applicable specifications are sufficient to permit an optimum solution to the problem. The contractor shall also review any other available information bearing on the subject of problem definition for the system even if no specific requirement exists in the contract or specification for its review but which information is necessary to produce an optimum solution. Areas of deficiency in the stated requirements shall be identified and limiting assumptions used to cover each deficiency shall be quantitatively defined and justified. Gaps in information on technical requirements shall likewise be identified and assumptions shall be stated with justification for each. When ambiguities in the requirements are found, those requirements shall be identified and re-expressed in an unambiguous manner. The contractor's concurrence in the basic Problem Definition, or his proposed revised version of it shall be submitted to the contracting agency for acceptance and approval and for concurrence with the identified assumptions and restatement of requirements. Such approval and concurrence must be received prior to initiation of Part II. Part I effort should be completed prior to the initiation of the "Initial Design Phase" described in paragraph 3.4.2(1)(a). In addition to the above, it is possible that during Part II (Analytical Solution) the contractor may discern need for additional changes in Part I to overcome omissions or to improve definitiveness. If this occurs, the contractor shall promptly submit proposed revisions to Part I.

3.4.3.2 ANALYTICAL SOLUTION (PART II). - The analytical solution shall consist of the solution in analytic form to the complete problem defined in Part I. The report shall contain a conceptualized system in block diagram form together with the mathematical model in symbolic form which was used in the performance of the analysis. The report shall present the analytical operations performed to solve the Part I - defined problem together with the quantitative value representing the measure of effectiveness which the conceptualized system yields. The inputs and outputs of the system shall be summarized with the range of variation indicated for each. The report shall define the subsystem boundaries and their respective inputs and outputs for the optimized system. A complete system description should be developed to the extent where design characteristics are defined, where parameter tolerances are established for both the system and their respective apportionment among the subsystems, and where justification for engineering decisions, assumptions, and compromises are established. The analysis report shall result in the determination of equipment characteristics adequate for performance specification formulation and comprising an abstract solution to the technical development problem. If the results differ significantly from the original technical requirements, the contractor shall bring to the attention of the contracting agency these differences and shall propose modifications as required to insure a feasible solution. The finished report shall be submitted to the contracting agency for approval and concurrence with proposed modifications in technical requirements prior to the commencement of Part III. Part II effort shall be completed prior to the completion of the "Initial Design Phase" described in paragraph 3.4.2(1)(a).

3.4.3.3 MECHANIZATION (PART III). - Mechanization is defined as the process of converting written parameters to an explicit definition of physical equipment. The details of "Mechanization" Part III, should be developed from the system requirements resulting from Parts I and II. Part III should describe and quantitatively justify all deviations to, and compromises of, requirements resulting from mechanization. Any compromise should be clearly expressed in terms of fleet usage and tactical effectiveness as defined by Part II. Diagrams both black and schematic and drawings necessary to understand the text of the report and how the equipment works shall be included. This report shall consider the necessary test equipment, its inaccuracies, and their effect on the system. Test values to be obtained and the test tolerances to be allowed in carrying out the verification test procedures shall be furnished and justified. The inaccuracies of all contributing factors, including test equipment, shall be considered. The justification of tolerances shall be based on a statistical consideration of combined bias errors and distributed errors and the results expressed in terms of the probability of success. An analysis of the accuracy requirements of all maintenance adjustments shall be included. The selection of mechanization methods shall be justified. Where significant reduction in cost appears possible by effecting a slight operational compromise, complete data shall be presented to permit evaluation of performance versus cost. The Mechanization Report shall be submitted and approved by the contracting agency prior to the release for manufacturing of the prototype equipment.

3.4.3.4 VERIFICATION (PART IV). - Part IV of the Engineering Report shall contain the ground and flight test procedures and the data obtained under these procedures. This data shall reveal the degree to which the developed equipment has the parameter values listed in Part II as modified by Part III. The verification data shall cover testing under both laboratory and simulated environmental conditions. In the event the verification data are not within the justified tolerance limits, the contractor shall recommend whether a fix should be made or the discrepance allowed. If the allowance of a discrepancy is to be recommended, the quantitative effect of the discrepancy on the problem solution shall be included, particularly in terms of its effect on the quantitative measure of effectiveness defined in Part I and predicted in Part II. In the event that characteristics not foreseen in earlier parts of the engineering are observed in the verification process or results, the effect of these characteristics on the problem solution shall be shown. Such unforeseen characteristics shall include, for example, the effect of reliably smaller input errors than had been allowed.

3.4.4 MISSILE SYSTEM OPERATIONAL AND COST ESTIMATES REPORT. - The report shall contain an analysis of the estimated operational performance and cost of the missile system. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. It shall include:

(1) Campaign costs of the missile system including (1) tables and curves of missile single shot kill probability against the specified targets; (2) number of sorties per target killed and (3) cost per target killed. Consideration shall be given not only to the cost of missiles that reach the target but also missile attrition and unreliability.

(2) Logistic (including transporation, stowage, storage), spare material, special support equipment and publications requirements, maintenance, personnel and training requirements associated with employment and support by naval and marine activities ashore and afloat.

(3) Analysis of production methods and material availability to insure minimum costs and relation of costs vs. quantities in lots of missiles per year as specified by NAVAIR.

3.4.5 MISSILE SYSTEM BROCHURE. - The brochure shall contain sufficient information to enable other interested organizations to become familiar with the general design and tactical features of the missile system for planning purposes. A preproduction preliminary copy of the document containing proposed art and manuscript shall be submitted for review and approval prior to preparation of final copy. Illustrations shall be used only as required for understanding of technical details. Final copy shall be submitted after incorporation of NAVAIR comments. Any and all classified and/or proprietary data contained in the document shall be clearly set forth on page 2 of the cover. The brochure shall contain the following information:

(1) Introduction (General description of the mission, the missile system, and method of use.)

3.4.5 (Cont)

(2) Operational diagrams

(3) Weight and size of system equipment

(4) Power requirements

(5) Typical aircraft and/or ship installation as applicable.

(6) Specialized training equipment

(7) Logistic requirements

3.4.6 RELIABILITY REPORTS. - Reliability reports shall be submitted in accordance with MIL-STD-1304(AS) and shall include:

(1) Reliability program plan

(1) Work breakdown structure
(2) Work package
(3) Pert network
(4) Program schedule

(2) Effectiveness study

(3) Reliability block diagram and mathematical model.

(4) Reliability prediction

(5) Reliability allocation

(6) Criticality study

(7) Failure modes and effects study.

(8) Environmental study

(9) Reliability test plan and test result

(10) Failure summary

(11) Reliability status

(a) Pert/Time management summary
(b) Pert/Cost analysis
(c) Reliability growth summary
(d) Demonstrated reliability
(e) Predicted reliability
(f) Allocated reliability

3.4.7 ENVIRONMENTAL CRITERIA REPORT. - The report shall present the results of analytical studies and ground and flight tests performed to determine the fundamental external and internal environment in which the missile system must operate, and shall present the proposed methods for feeding this information into the system design. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. Criteria shall be furnished with respect to the following and shall include both shipboard and land-based utilization.

(1) Shock and vibration caused by aircraft installation, motor-burning, transportation, handling and flight.

(2) Altitude, temperature, pressure, moisture and humidity extremes.

(3) Launching airplane influences, when applicable.

(4) Shipboard stowage, handling, and checkout restrictions as defined by NAVAIR.

The report shall present the design criteria for missile system components and shall include the report requirements of para. 3.4.18.5.3 and 3.4.24. It shall include:

(a) Design, shock and vibration spectrum.
(b) Design impact loading conditions.
(c) Design internal temperature conditions.
(d) Design steady state and gust load acceleration limits.

3.4.8 MONTHLY PROGRESS LETTERS. - These letters shall summarize the progress made in all phases of the design, all problems encountered during the reporting period, the causes of the problems and the proposed corrective action, including in the time period required to make the correction, test, manufacturing and reliability programs and shall outline the work to be undertaken during the next period. Important decisions shall be summarized and problems presented for consideration. Graphs, charts, sketches, drawings, illustrations, etc., should be included when necessary to clarify the written material. Each letter shall also include a list of the design and test reports submitted during the reporting period.

3.4.9 PROGRAM EVALUATION AND REVIEW TECHNIQUE (PERT) REPORTING REQUIREMENTS. - Pert/time and Pert/cost diagrams, estimates, and reports shall be submitted as mutually determined between the contractor and the Navy. Diagrams, estimates and reports shall be as specified and in accordance with specification MIL-P-23189.

3.4.10 DEVELOPMENT CHECK POINTS. - The following check points will be used to assist in evaluating and monitoring the development of the missile system:

(1) INITIAL DESIGN REVIEW. - The contractor shall be prepared to present information covering the work accomplished during the initial design phase. The presentation shall be in sufficient detail to familiarize the board with the proposed circuitry and mechanical details.

(2) MOCKUP. - When a mockup of the complete missile system is required under the contract it shall be constructed for inspection by the Initial Design Review Board or a Mockup Board as specified by NAVAIR. The mockup shall be constructed in accordance with Specification MIL-M-18828, except that the mockup, shall include the complete system. In constructing the mockup, emphasis shall be placed on overall physical arrangement and dimensions of the missile and supporting equipment (test equipment, handling equipment, aircraft equipment and packaging), its serviceability provisions and its aircraft and shipboard compatibility. Mockup photographs shall be furnished in accordance with Specification MIL-M-18828.

(3) PROTOTYPE SYSTEM REVIEW. - The contractor shall be prepared to present information covering the work accomplished subsequent to the Initial Design Review and shall construct for NAVAIR inspection a functional prototype missile system based on the approved initial design. This prototype system may consist of functional black boxes, assemblies and subassemblies not necessarily packaged within the final envelope dimensions.

(4) PREFLIGHT AND SERVICEABILITY INSPECTION. - A preflight and serviceability inspection shall be conducted on a complete developmental system. The airborne portions of the system shall be installed in a test bed aircraft of the type in which the system will ultimately be used. The preflight and serviceability inspection shall include, as a minimum, the following:

(a) Removal and replacement of all aircraft mounted units and racks.
(b) Perform a preflight checkout of the complete system utilizing the system's self test features supplemented, if necessary, by Special Support Equipment.
(c) Upload and download missiles from all stations utilizing, insofar as practicable, the missile handling and loading equipment designated for the system.
(d) Demonstrate all special handling equipment developed as part of the system.

Photographs of the system shall be furnished in accordance with Specification MIL-M-18828.

3.4.10 (Cont)

(5) EVALUATION REVIEWS. - Reviews as deemed necessary by NAVAIR shall be held to assess the results of ground and flight tests, assess insofar as practicable the extent to which design objectives have been met and the degree to which proposed fixes will clear up discrepancies, to review proposed changes to the specifications and to determine the contractor's readiness to demonstrate the missile system.

(6) DEMONSTRATION REVIEW. - A review of the results of the demonstration program shall be held to determine the extent of the contractor's compliance with the specifications; determine completeness of integration of missile system into service type aircraft; determine the readiness of the system to proceed with Navy technical evaluation; determine the extent of the contractor's support required during the Navy's flight test program; and assess the readiness of the system for possible procurement of preproduction quantities.

(7) PRODUCT IMPROVEMENT REVIEWS. - Reviews as necessary to assess the development work accomplished to eliminate deficiencies and incorporate improvements determined necessary as a result of the Navy's technical evaluation.

3.4.11 PRESENTATION DATA. - Presentation data shall include slides, charts, graphs, etc. and motion picture film footage.

3.4.11.1 SLIDES, CHARTS, GRAPHS, ETC. - The contractor shall provide slides, charts, graphs, etc. as required by NAVAIR for presentation purposes to portray up-to-date information on missile system development and configuration. Slides shall consist of 3 1/4 inch by 4 inch lantern slides and 35mm slides in color. An identifying description of the submitted material shall accompany this data.

3.4.11.2 MOTION PICTURE FILM. - Motion picture film shall be provided in accordance with the following:

(1) Coverage. - The contractor shall accomplish motion picture photography on both a continuing and an "as specified" basis as indicated herein. Photographic coverage may include documentation of highlight aspects of research and development, facilities construction and utilization, hardware fabrication and production, test activities, including high speed engineering sequential motion picture coverage of appropriate test phases, and related events and subjects involving the contractor's area of responsibility.

3.4.11.2 (Cont)

(2) Objective. - The objective of the motion picture coverage specified herein is to satisfy a continuing need for documentation and reporting of the contractors research and development activities and progress. The motion picture coverage thus obtained will be used for purposes of program evaluation and management, analysis, written report backup, and the preparation of training, orientation and briefing films. Other uses include legal historical, and the fulfillment of various information services requirements.

(3) General. -

(a) All motion picture coverage will be professional photographic quality and in a quantity that will enable the Navy and the contractor to produce factual, minimum-cost film reports, and the Navy to produce the film clips indicated in subsequent paragraphs.

(b) Original motion picture photography will be in 16 mm color, exposed at 24 frames per second. Black-and-white film and other frame-rates and other film sizes may be used in instances where the capability of the color film or the normal frame-rates would be detrimental to the accomplishment of specialized photographic coverage, such as aerial, engineering sequential, and time measurement photography.

(c) The camera film shall be that type of raw stock which will best suit the conditions surrounding the particular coverage assignment.

(d) The contractor shall not project or cut original film exposed in connection with the contract, except to eliminate waste film caused by camera failure or faulty photographic techniques (gross over or under exposure, over or under development, out of focus, etc.) which results in qualitatively unsatisfactory film.

(e) Completed film reports shall contain no contractor promotional material beyond the name of the firm in the film title and in such places in the picture and narration where it is needed for purposes of identification and clarity.

3.4.11.2 (Cont)

(3) (Cont)

(f) All original camera film footage shall be slated whenever possible. Slate information shall include, as appropriate: contractor identification, project number and/or name, contract number, security classification, date photographed, scene and take number. One copy of caption information describing the action involved in each scene and the significance of the sequence of which the individual scene is a part, will be forwarded with all camera film footage. All individual reels of the film footage will bear head and tail security classification leaders.

(g) All of the original motion picture footage produced and costed under terms of this contract shall be the property of the Commander, Naval Air Systems Command. Unless otherwise specified herein, the contractor shall forward all original motion picture material produced under this contract within 120 days after processing. Exception will be made on such portions of the original footage as may be required for the production of planned complete film reports called for under terms of this contract. In this latter circumstance the motion picture original material will be forwarded not later than one year after processing.

(h) All classified motion picture film footage, and completed film reports produced under this contract will be handled in accordance with the security regulations.

(4) Production and submittal of Motion Picture Documentation Materials:

(a) The contractor shall accomplish continuing motion picture coverage of all significant highlight events within the area of his activity and responsibility as they occur and as he determines is essential to the fulfillment of NAVAIR's need for engineering, evaluation, and management data, or for reporting purposes. Coverage will include the unsuccessful and unfavorable events as well as the positive aspects of the contractor's activity and progress. The contractor shall also accomplish coverage of specific developments and special events within the area of his activity and responsibility, as may be directed. Such special coverage may coincide with the continuing coverage described above or it may be an additional requirement.

3.4.11.2 (Cont)

(4) (Cont)

(b) The contractor shall furnish following completed motion picture reports, and selected film footage for production of film clips from the photography accomplished in paragraph (4)(a) above:

(1) Progress Film Reports:

(a) The contractor shall produce formal progress film reports annually.

(b) Progress film reports shall be complete audio-visual reports organized objectively to give a factual account of a phase or portion of the contractor's project or program, its development, production progress and test activity. These film reports shall be produced in a manner which will permit compilation of an integrated and chronological film record of the entire history of the progress and activity within the contractor's area of work and responsibility when all progress film reports from the contractor are combined.

(c) Progress film reports shall be approximately 5 to 20 minutes in length (1/2 to 2 reels), depending upon the reporting period, and shall normally contain only picture, titles and narration. However, when it is deemed essential for clarity, a limited amount of simple animation, artwork, graphs, lip sync, and sound effects may be used.

(d) Title format specifications are reflected in Figures 1 and 2 and shall be used for all film reports produced under terms of this contract.

3.4.11.2 (Cont)

(4) (Cont)

(b) (Cont)

(1) (Cont)

(e) The contractor shall prepare and deliver the items listed below on, or prior to the dates specified:

(1) Release prints shall be delivered for information not later than 40 calendar days following the end of the reporting period.

(2) All Pre-print materials used to make the release prints in 3.4.11.2(4)(e)(1) above, including the matching sound track negative, and copy of the final cutting and recording continuity script, shall be delivered not later than 60 calendar days following shipment of the release prints. Prior to shipment of pre-print materials, the contractor may produce one release print for his own use.

(2) Special Film Reports. - The production of special film reports may be assigned to the contractor from time to time by the contracting officer. Such films will encompass scientific, engineering, and technical aspects of the research, development, fabrication, and testing phases of the contractor's area of activity and responsibility. Special film reports shall conform to the same requirements specified above for progress film reports, and when directed by the office of primary responsibility, prints will be made and distributed to the same addressees. The production of these special film reports will be specifically directed by the contracting officer and will be negotiated individually as required.

? 4.11.2 (Cont)

(4) (Cont)

(b) (Cont)

(3) Film Clip Footage:

(a) In addition to the completed film reports called for in (4)(b)(1) and (4)(b)(2), the contractor shall submit on an expedited basis film footage selected from the record and documentary motion picture photography accomplished in compliance with (4)(a) above, or obtain and submit such film footage specifically filmed for the preparation of film clips as directed. Subject matter of this film footage will include coverage of special happenings such as program reviews, mock-ups, test flights, critical or complex problem areas, technological break-throughs, engineering sequential coverage of research, development and laboratory test activities, and other events which depict the program progress and status. Such footage will be used by the Navy to prepare clips for the in-service production of films and for other reporting and briefing purposes.

(b) Footage for film clips suitable for use in the various film reports must portray a complete story of a specific research and development event, phase, or activity. The photographic coverage for each clip should include a variety of scenes of the reported item or event, i.e., establishing shots, medium shots, close-ups, and cutaways, to assist the Navy film editor in telling the story. The film footage should consist of full length, unedited, untitled, silent scenes assembled in continuity and of sufficient length to provide 5-10 minutes running time as received from the contractor.

3.4.11.2 (Cont)

(4) (Cont)

(b) (Cont)

(3) (Cont)

(c) One 16mm, color, timed master bearing emulsion in the original camera position, and one matching color work print of the film clip footage shall be included. Both the master and the work print shall be edge numbered or coded. Two copies of written information describing the activities and items shown shall be delivered with this film footage.

(d) The completed motion picture reports and film clips footage shall be limited to five prints for any single report and shall be coordinated through the Chief of Information with the appropriate Department of Defense Office if the report is to be released to the public or if it deals with research and development projects.

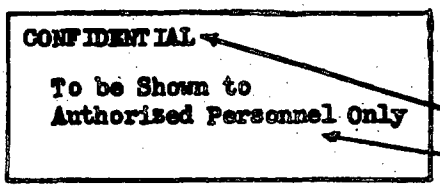
(5) Reporting of Motion Picture Coverage. - The contractor shall forward a written report on each completed film report and each shipment of motion picture footage submitted for the preparation of film clips. The following information shall be provided in narrative form or in format shown in Figure 3; subject and/or title of the photography (completed film report or film clip footage), classification, size and type of film, contract number, project name and number, purposes of photography (e.g., quarterly progress report, film clip, OPR request, etc.), location of original film. (NOTE: If original film has been forwarded, so indicate and give date of shipment; if not submitted give estimated date of shipment, number and location of masters and other pre-print materials (if in the possession of contractor, give estimated date of shipment, number and location of prints)(for completed film reports indicate number and location of composite release prints), estimated cost (original photography should be costed to the completed progress or special film reports when filmed for inclusion in such reports; original photography specifically filmed for film clip purposes should be costed to the particular film clip involved).)

(6) Procedure at Naval Facilities. - When any portion of the work conducted under this contract is performed at a Naval Test Range or other Naval facility where a technical motion picture production capability exists, the Naval facility will accomplish the photography and provide the contractor with the original or a 16mm color, timed printing master with emulsion in the camera position and one matching color work print. It will be the responsibility of the contractor to provide the liaison and technical guidance to assure that all applicable portions of the contractor's program are covered.

3.4.11.2 (Cont)

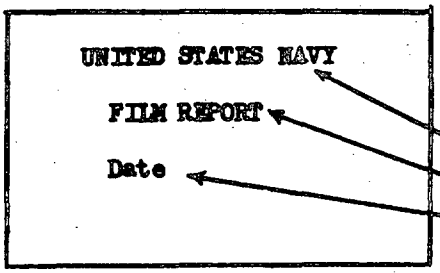
MOTION PICTURE TITLE FORMAT

SPECIFICATIONS



Title Classification (Beginning and End)

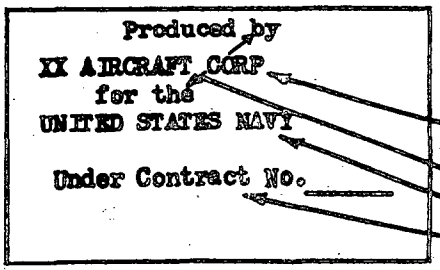
1. No. Drop Shadows
2. ACME - 10 Field
3. 120 PT. Franklin Gothic Extra Condensed
4. 36 PT. Bernhard Gothic Heavy



Identification Title

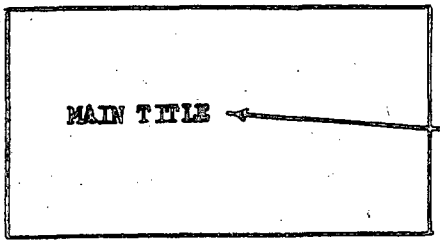
1. All lettering with Black Drop Shadows
2. ACME - 10 Field
3. 48 PT. Bernhard Gothic Medium Condensed
4. 84 PT. Franklin Gothic Extra Condensed
5. 36 PT. Bernhard Gothic Medium Condensed

Indicate period covered by report.



Credit Title

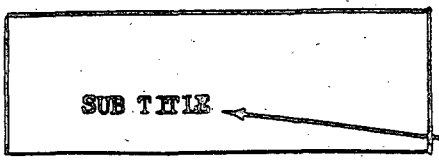
1. All lettering with Black Drop Shadows
2. ACME - 10 Field
3. Type face and size at discretion of Contractor
4. 48 PT. Kauffman
5. 48 PT. Bernhard Gothic Medium Condensed
6. 36 PT. Bernhard Gothic Medium Condensed



Main Title

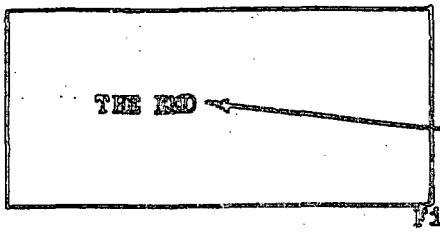
1. All lettering with Black Drop Shadows
2. ACME - 10 Field
3. 96 PT. Lydian Bold
4. Use unclassified title if possible

NOTE: Main titles should indicate subject matter contained in report.



Sub Title

1. All lettering with Black Drop Shadows
2. ACME - 10 Field
3. 84 PT. Lydian Bold
4. Use unclassified title if possible



End Title

1. No Drop Shadows
2. ACME - 10 Field
3. 96 PT. Lydian Bold

LETTERING: White
BACKGROUND: Navy Blue, textured

Figure 1

PRODUCTION GUIDE FOR TITLING
(For Completed Films Only - Not Applicable to Film Clips)

LEGEND: Fl-Fade In FO-Fade Out FR-Frames

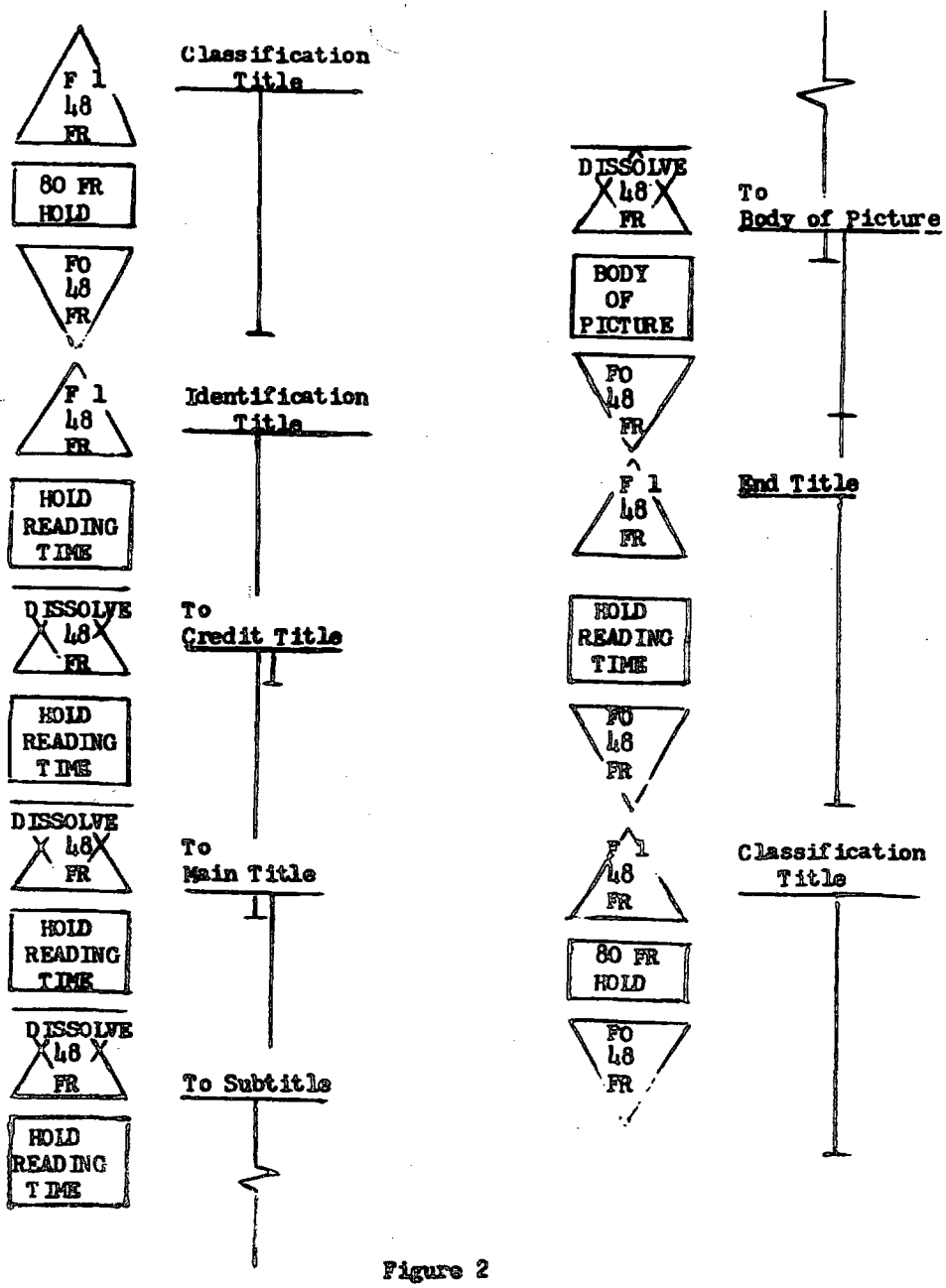


Figure 2

REPORT OF PICTORIAL COVERAGE STILL AND/OR MOTION PICTURE PHOTOGRAPHY (To be prepared by contractor)				Period Covered by Report			Date of Report		Fiscal Data	
Item	Subject of Photography	Classification	Size Film	Type Film	Amount Exposed	Date Exposed	Photographer	Cont. Number	W/s or Proj. Number	Estimated Cost
1										
2										
3										
4										
5										

	Purpose of Photography	Location (Where Exposed)	Location of Original Film	Number of Masters	Location of Masters	Number of Prints	Location of Prints
1							
2							
3							
4							
5							

Figure 3

3.4.12 SIMULATOR PROGRAM REPORTS. - A report shall be prepared for each major simulator program. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. The report shall state the objectives of the program, the duration of the program, the simulation set-up employed, the results of the study, the degree to which the objectives were fulfilled, conclusions, and recommended action.

3.4.13 AIRCRAFT INSTALLATIONS REPORT. - An aircraft installations report shall be submitted. The report shall contain sufficient information to permit incorporation of the missile system in the launching aircraft by the aircraft contractor or by the missile contractor. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. The report shall also include the following:

(1) An analysis of the effect of the missile system on the performance of the launching aircraft including take-off, rate of climb, ceiling, stability, maneuverability range as well as speed and altitude performance as listed in applicable missile system detail specification, the characteristics of which will be furnished by NAVAIR.

(2) A description of all launching aircraft equipment, the weight, space, power, heating and cooling requirements, adapters and special fittings required for the aircraft installation. The arrangement of the equipment as installed or proposed for each of the aircraft listed in the applicable missile system detail specification shall be shown. Heating and cooling requirements, in terms of pounds of air per minute, or similar data if the aircraft will supply coolant other than air. Data shall include requirements for standby, warm-up, and significant flight conditions.

(3) Clearly show deck and catapult bridle clearances on all carrier aircraft installations carrying missiles externally.

(4) Characteristics of signals between airborne portions of the system and the launch aircraft. This shall include amplitude and tolerance of all signals, data rates, timing of signals, detail message content, definitions of digital information of input and output signals, and input and output terminating and shielding.

3.4.14 SHIP INSTALLATION REPORT. - A report shall be submitted containing sufficient information to permit incorporation of the missile system in naval vessels specified by NAVAIR. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. The report shall include:

3.4.14 (Cont)

(1) Recommended shipboard allowances of all missile components (including major components, wings, fins, connections, squibs, etc.) missile and support equipment spare parts, handling and loading equipment, special adapters and fittings, tools (special and ordinary) for missile and support equipment, shipping containers, guided missile check out equipment, test equipment for the guided missile checkout equipment and any other item that must go on board ship to support the missile system.

(2) Written descriptions and outline drawings of each item listed in paragraph 3.4.14(1), including for each item as applicable the weight, dimensions, center of gravity, hard spots for fastening, sensitive areas subject to damage, and any other pertinent details. In addition, foundation and mounting information, utilities required (air, nitrogen, electric power, etc.), heat generation data and wiring and piping connection details shall be furnished for all test equipment to be installed on ships.

(3) Estimated missile assembly time, required shipboard readiness (ready service requirements), recommended shipboard flow rates and aircraft arming rates.

(4) Recommended shipboard stowage, testing and handling procedures. This phase of the report should set forth recommendations on locations of stowage and testing facilities; arrangements of all compartments; stowage requirements (bare or packaged); and shock mitigation, temperature and humidity requirements. Recommendations on handling methods should be the result of analyses of sizes and weights of components, complexity of assembly and required flow rates. The depth to which any mechanization of shipboard handling may be recommended in order to meet required aircraft arming rates should be outlined in detail.

(5) Description of flow patterns shall include flow from replenishment station through strike-down routes, stowage in magazines, breakout, check-out, strike-up, assembly/disassembly as applicable during these evolutions, aircraft de-arming following captive flight or after recovery operations as required. Flow diagrams shall show target configuration, whether packaged or bare, handling equipment at each point in flow pattern, along with necessary universal and/or special adapters. Flow patterns will also stipulate number of personnel required for each operation and estimated time required to complete the operation.

3.4.15 HANDLING EQUIPMENT REPORT. - This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. The report shall describe all handling equipment required for use with the missile system including standard items and special adapters thereto.

3.4.16 SHIPPING CONTAINERS REPORT. - A report shall be submitted describing the shipping containers for the missile or missile system as applicable. The report shall show provisions and design limitations for shock mounting, vibration isolation, sealing, lifting, loading on transportation medium, stacking and re-use in compliance with the criteria of WR-11 and MIL-S-901.

3.4.17 INTEGRATED SYSTEM DYNAMICS REPORT. - A report shall be submitted containing analyses of the integrated airframe, guidance, stabilization and control system configurations and modes of operation. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. A sufficient number of flight conditions shall be analyzed to show that a satisfactory degree of stability may be expected over the entire operating envelope. These analyses shall show that any reasonable variation of estimated missile system parameters (such as c.g. position, stabilization system characteristics, etc.) will not adversely affect stability and control. If an analogue computer is used in the analyses, substantiating hand computational analyses shall also be made for the selected values of the system parameters. This report shall also include the following data: (1) A list of symbols used including definitions and units, (2) Tables of Aerodynamic Stability derivatives for the condition analyzed, (3) Numerical coefficients of the airframe equations of motion for all conditions analyzed, (4) All system and subsystem transfer functions used in the analyses, and (5) Numerical values of roots determined from digital computer or from graphical methods such as the root locus analyses. The information presented in this report shall be based upon the latest and most applicable experimental and theoretical data available at the time of submittal, and shall be fully documented and referenced. When major changes are made in the missile, revisions to this report showing the effects of these changes shall be submitted as soon as possible and without regard to the normal date for periodic revision. At least 30 days prior to first flight, the data in this report shall be revised as necessary and the complete report submitted for acceptance prior to release of the missile for first flight. In the event flight test data show different system dynamic characteristics than predicted, an appendix shall be submitted to show these differences.

3.4.18 AERODYNAMIC AND PERFORMANCE DATA

3.4.18.1 AERODYNAMIC INVESTIGATIONS

3.4.18.1.1 AERODYNAMIC INVESTIGATION PROGRAM REPORT. - A report shall be submitted showing the planned aerodynamic investigation program and schedule for development of the missile design. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. This report shall outline the purpose and scope of each proposed investigation, indicate the test facilities to be employed, test dates desired, estimated occupancy time required, describe the scale and type of models to be constructed and tested, and present the ranges of test variables to be investigated. Program revisions shall be submitted for acceptance prior to undertaking the revised investigations. For wind-tunnel flutter model investigations, MIL-A-8870 shall apply.

3.4.18.1.1 (Cont)

(1) For investigations at Government-furnished facilities - Preliminary contact with the facility to be utilized is usually necessary to determine the feasibility and desirability of conducting the proposed investigation. Following such contact, a request for tests shall be made to NAVAIR. The request shall describe in detail the specific test programs agreed upon. For tests to be scheduled at the David Taylor Model Basin, submittal of requests shall be in accordance with published procedures.

(2) For investigations at privately operated facilities - A detailed description of tests to be conducted and of specific objectives of the tests shall be submitted to NAVAIR.

(3) For wind-tunnel flutter model investigations, MIL-A-8870 is applicable.

3.4.18.1.2 AERODYNAMIC MODEL DRAWINGS. - When an aerodynamic model or models are required under the contract, the design shall be suitable for carrying out the approved aerodynamic investigation program. In establishing model scale ratios, strength, and installations provisions, consideration shall be given to utilizing the maximum number of alternate aerodynamic test facilities. Prior to undertaking construction of any model, approval of the model design by the appropriate test facilities is required. Approved drawings, and design data required for construction of the models shall be submitted to the constructing facility as soon as practicable. For dynamic and free-flight model investigations, the contractor shall furnish the constructing and testing facilities with all design information necessary to simulate full scale conditions in the construction and during the testing of the model. All model drawings shall be made available to the government on request.

3.4.18.1.3 AERODYNAMIC INVESTIGATION DATA. - Data from aerodynamic investigations shall be kept current by prompt delivery of aerodynamic reports in accordance with the following. These reports shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3:

(1) Interim letter reports. - These shall be submitted immediately following completion of each facility occupancy and shall cover items of interest such as purpose, scope, contractor's observations, difficulties encountered, significant results, and conclusions and recommendations as may be possible based on inspection of the available preliminary test results.

(2) Test Data reports. - Reports presenting the basic aerodynamic data and test results obtained from investigations conducted in contractor-furnished and private test facilities shall be submitted. Such reports should include description of the configurations tested and comparison with previously listed versions and with the current proposed missile configurations. Test data should be shown graphically and be referred to axes consistent with the stability and control reports of 3.4.18.2 when possible. Tabulated

3.4.18.1.3 (Cont)

(2) (Cont)

data are not desired unless specifically requested. When subsequent analysis indicates any of the published data to be erroneous, the NAVAIR shall be informed and supplied with appropriate errata or replacement pages.

3.4.18.2 STABILITY AND CONTROL REPORT. - This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. This report shall contain values of the airframe static and dynamic stability and control derivatives (with and without booster) over the complete design envelope. Experimental data similar configurations and results of wind tunnel tests, aeroelastic analysis, and thermoelastic analysis accomplished shall be included. This report shall also include the following data: (1) missile configuration including three view drawing, dimensions, and areas, (2) a list of symbols used including definitions and units, and (3) substantiating data including method used to obtain the aerodynamic derivatives. The information presented in this report shall be based upon the latest and most applicable experimental and theoretical data available at the time of submittal, and shall be fully documented and referenced. When major changes are made in the missile, revisions to this report showing the effects of these changes shall be submitted as soon as possible and without regard to the normal date for periodic revision. At least 30 days prior to first flight, the data in this report shall be revised as necessary and the complete report submitted for acceptance prior to release of the missile for first flight. In the event flight test data show different stability and control characteristics than predicted, an appendix shall be submitted to show these differences.

3.4.18.3 CHARACTERISTICS AND PERFORMANCE DATA. - Performance data reports and Standard Aircraft Characteristics (SAC) charts and drawings prepared in accordance with the following sub-paragraphs and with Specification MIL-P-21018 are required as follows:

3.4.18.3.1 BASIC DATA. - Submit basic data prepared in accordance with MIL-P-21018 for acceptance prior to proceeding with performance calculations for submittal with SAC charts.

3.4.18.3.2 PERFORMANCE DATA REPORT. - The report of (1) below shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3.

(1) Performance Data report. - Using basic data accepted or designated by NAVAIR, prepare and submit an initial Performance Data Report. Revised data shall be submitted whenever changes in missile configuration or powerplant result in significant performance changes. The required format is outlined in paragraph 3.1.2 of Specification MIL-P-21018. The performance data report shall substantiate the performance data presented in the Handbook of Flight Operating Instruction.

3.4.18.3.2 (Cont)

(2) SAC Charts. - SAC charts shall be 10 7/8 X 14 1/4 inches, centered on 12" X 15" matte prints in accordance with Specification MIL-P-21018.

(a) Descriptive Arrangement and Armament and Tankage drawings shall be submitted in the form of reproducible glossy prints prepared on NAVAIR Form 13100/4.

3.4.18.3.3 ADDITIONAL. - Additional submittals of revised Performance Data of 3.4.18.3.2 when required.

3.4.18.4 LAUNCHING CHARACTERISTICS REPORT. - Unless the contractor is specifically exempted from launching characteristics responsibility, a report or reports analyzing the separation characteristics and launch trajectories of the missile(s) under the most critical launching conditions shall be submitted. These reports, if required, shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. If so exempted, the contractor shall provide such technical information as requested by NAVAIR to allow launching characteristics computations as indicated below to be performed by another agency:

(1) AIR LAUNCHED MISSILES. - The analyses shall show the time histories of the motion of the missile(s) from initial firing or ejection to stabilized flight free of the flow field induced by the launching aircraft specified in the applicable detail specification. The analysis shall be made for all missile locations on all launching aircraft assigned for conditions deemed critical and shall include justification of the conditions selected. The analysis method shall be briefly presented with appropriate references and explanation of choice. Launching aircraft induced flow field effects and the calculated transient effect of missile firing upon engine operations are to be included. Possible compressor stall and flameout shall be considered as critical conditions in the analysis. An analysis of jettison trajectories to insure that the missile(s) safely clear(s) all aircraft structural components will be made where applicable. Available information on the launching aircraft will be requested from the Government. The contractor shall submit an analysis report of missile separation characteristics and launch trajectories from launching test aircraft used in the contractor's development program when other than the tactical launching aircraft is used.

3.4.18.5 AERODYNAMIC AND THERMODYNAMIC HEATING DATA. - The following reports are required whenever the recovery temperature or local ambient temperatures due to environment, operation of electronic equipment, etc. equals or exceeds 200°F. These reports shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3.

3.4.18.5.1 AERODYNAMIC AND THERMODYNAMIC HEATING ANALYSIS REPORT. - This report shall present the contractor's analysis of the aerodynamic heating to which the missile will be subjected and shall include a discussion of the method of analysis including explanation and justification of the assumptions and approximations used together with adequate references for all sources of information. A short discussion of the predicted accuracy of the analysis results is to be given. An explanation and justification for the selection or the missile trajectories and launch conditions selected, in terms of assuring analysis of the most critical conditions for the missile system, is to be included. For each selected trajectory time history data for surface temperatures and compartmental temperatures shall be given. These data shall include the effects of environment prior to missile launching and any sources of heating or cooling within the missile.

3.4.18.5.2 STRUCTURAL HEATING SUMMARY REPORT. - This report shall include data on the deformations due to differential heating during transients and deformations under stabilized temperature conditions, effect of deformation on air-loads, and effect of temperature and deformation of stiffness and other parameters pertinent to flutter analysis. Additional data is to be given on the internal stresses due to differential heating and pertinent allowable stress data for structural design. From the calculated temperatures of local area (including the external surface, back-up structure, and structure near power plants (both external or internal), electronics, or other heat sources and structure located in or near the engine exhaust stream), define or clearly reference the material properties used for design. These data shall include static properties at temperature and following exposure to temperature, consideration of loading rates, criticalness of creep parameters, effect of temperature or fatigue strength (when pertinent), joint relaxation data, and fastener, welding, etc. allowables.

3.4.18.5.3 COMPONENT HEATING SUMMARY REPORT. - This report shall present the contractor's analysis of the effects of aerodynamic and thermodynamic heating and the resultant structural deformations on the functioning of the missile components. Compartmental and surface temperatures consistent with the data of the Aerodynamic and Thermodynamic Heating Analysis Report shall be used to analyze the suitability of operational environment upon the function of all internally stowed items such as fuel, engine, electronic gear, hydraulic systems, etc. Wherever heat protection of an item is required, the analysis shall be extended to substantiate the adequacy of the heat protection provisions. This report shall be submitted separately from, but may be prepared for insertion or integration, in the report of 3.4.7.

3.4.19 STRUCTURAL DESIGN, ANALYSES, AND TEST DATA. - Structural design, analyses, and test data shall be submitted for acceptance in accordance with MIL-A-8868 and MIL-A-8870 covering structural, flutter and divergence, and vibration requirements respectively. However, in lieu of the delivery schedules specified in MIL-A-8868 for stress analysis reports and loads reports, such reports shall be submitted not later than 30 days prior to first flight or not later than 60 days prior to commencing static tests, whichever occurs first.

3.4.19.1 DRAWINGS. - Drawings of major structural components shall be submitted showing structural design features including important fitting attachments, beams, ribs, bulkheads, method of skin reinforcement, carry-through structures, joints, splices, cutouts, and other such discontinuities, typical sections through load-carrying members, materials employed and heat treatment, types of riveting, types of welding, and other methods of attachment of important parts. Submittal of drawings shall not be delayed until complete assembly, installation, or production drawings are available. All authorized deviations from detail or other applicable design specification requirements shall be indicated to facilitate review of the drawings. These deviations shall be marked on the drawings in colored crayon, the color of which shall be in sharp contrast with the color of the print. Release of drawings under this item shall not constitute official release of authorized deviations from detail or design specification requirements and shall not be construed as acceptance of non-government specifications or standards. Drawings of major structural components are required as follows:

(1) General Arrangement - (front and side elevations and plan views)
(2) Wing Group
(3) Control and Stabilizing Surfaces Group
(4) Body Group

3.4.20 ELECTRIC SYSTEMS DATA. - The following data shall be submitted. These data shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. Equipment shall be identified by military or manufacturer's part number. Symbols shall be in accordance with MIL-STD-15 and reference designations in accordance with ASA Y32.16-1965 Document. Data shall include information on the complete missile system.

3.4.20.1 INFORMATION ON NON-STANDARD PARTS. - Requests for approval of non-standard parts shall be accompanied by the data required by Specification MIL-E-8189 or MIL-E-5400 as applicable.

3.4.20.2 NOMENCLATURE, NAMEPLATES AND SERIAL NUMBERS. - Nomenclature, nameplates and serial numbers shall be in accordance with Specification MIL-N-18307. The contractor shall request nomenclature for the articles, equipments and major components thereof giving the information required by the Federal Item Identification Guides for Supply Cataloging (Cataloging Handbook H6). Two copies of dimensional outline drawings of each article, equipment or major component thereof shall accompany the nomenclature requests.

3.4.20.3 SCHEMATIC DIAGRAMS. - Preliminary schematic system diagrams in elementary form showing the complete electrical system in straight line shall be supplied. Sufficient information shall be provided to facilitate engineering review and to clearly show the functioning of each electrical circuit.

3.4.20.4 MASTER WIRING DIAGRAMS. - A master wiring diagram plus individual system schematics shall be supplied. These diagrams shall be suitable for incorporation in the applicable missile system handbook. Each system shall be presented on one sheet, if practicable, without undue crowding. Complete drawings shall be provided for circuit elements, such as terminal blocks and connectors which are common to more than one system. Terminal blocks, connectors and wiring shall be identified to correlate with the physical installation.

3.4.20.4.1 AIRCRAFT-MISSILE ELECTRIC SYSTEM DATA. - When the missile system includes an air launched guided missile, the master wiring diagrams shall include the following and these diagrams shall be included in the report of 3.4.13.

(1) The tie-in of the missile system to the launching aircraft generating equipment showing both AC and DC information, i.e., frequency, voltage requirements, current requirements and power factor. Power from the launching aircraft will conform to MIL-STD-704.

(2) The use of power conversion devices required in the launching aircraft, e.g. rectifiers, inverters.

(3) The use of electrical and electronic equipment required in the launching aircraft that is peculiar to the system, e.g. firing panels, illumination, controls.

(4) The type(s) of umbilical plugs and receptacles used both in the aircraft and the missile.

(5) The information that is transmitted to the missile on each of the umbilical pin numbers, including information as to voltage and approximate current required by the missile through these pins.

3.4.20.4.1 (Cont)

(6) The drawing(s) shall be in sufficient detail to follow the step-by-step launching sequence of events both in the missile and in the aircraft. The missile circuitry may be represented in equivalent form; the launching aircraft components may be represented in semi-schematic block diagram form as long as the launching sequence can be traced.

3.4.20.5 ELECTRICAL LOAD ANALYSIS. - Electrical load analysis shall be submitted for the following as applicable.

3.4.20.5.1 LAUNCHING AIRCRAFT. - An electrical load analysis of the launching aircraft as modified to accommodate the missile system in accordance with Specification MIL-E-7016.

3.4.20.5.2 MISSILE. - An electrical load analysis of the missile during post launch period until detonation in general accordance with Specification MIL-E-7016.

3.4.21 MATERIALS AND PROCESSES DEVELOPMENT AND EVALUATION REPORT. - A summary technical report describing materials and processes research, development and evaluation work which has been conducted or is planned under the contract, or alternatively, a statement that no work of this type has been conducted or is contemplated shall be submitted. The report shall include a brief discussion of each problem requiring materials or processes, research, development or evaluation work, and the relationship of the problem to the performance of the system. It shall also delineate all drawings and/or reports which incorporate such material and processes into the missile system. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3.

3.4.22 SPECIAL MATERIALS PARTS LISTS. -

(1) Metal-To-Metal Adhesive Bonding Parts List. - A list of all metal-to-metal adhesive bonded parts in the guided missile and if not obvious from the titles, a description of the parts and their locations, the proprietary name of the adhesives used and a copy of the process specification.

(2) Sandwich Constructions Parts List. - A list of all structural sandwich construction applications in the guided missile and if not obvious from the title, a description of the parts and their locations, a description of the sandwich constructions identifying facing materials, low density core materials and adhesives or brazing alloys, if applicable, and a copy of applicable process specifications.

3.4.22 (Cont)

(3) Plastic Laminates Parts List. - A list of all plastic laminate structural parts in the guided missile and if not obvious from the titles, a description of the parts and their locations, the proprietary designations of the resin and the laminate reinforcements, and a copy of the process specification.

(4) Magnesium Alloy Parts List. - A list of all magnesium alloy applications in the guided missile together with the alloys used and applications if not obvious from the titles, a description of the parts and their applications shall be included.

(5) Lubricant Requirements List. - A list of lubricants prepared in accordance with MIL-STD-838.

3.4.23 FINISH SPECIFICATION. - A finish specification in accordance with Specificatin MIL-F-7179 shall be furnished. The contractor shall number paragraphs to correspond with the system employed in Specification MIL-F-7179 and shall indicate in the submitted specification and the forwarding letter all desired deviations from Specification MIL-F-7179 and other applicable specifications. The reasons for deviations and supporting technical information shall be submitted with the finish specification to NAVAIR for approval.

3.4.24 HEATING AND COOLING REPORT. - A report shall be submitted describing the heating, cooling, insulation, anti-icing and defrosting provisions as applicable. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.7.

3.4.25 HYDRAULIC SYSTEM DATA. - Hydraulic system data shall be submitted as required by Specification MIL-H-25475. These data shall be submitted separately from, but may be prepared for insertion or integration in the report of 3.4.3.

3.4.26 PNEUMATIC SYSTEM DATA. - Pneumatic system data shall be submitted as required by Specification MIL-P-5518. These data shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3

3.4.27 RECOVERY SYSTEM REPORT. - A report shall be submitted describing the missile recovery system in accordance with MIL-P-25602. The report shall include drawings of the attachment provisions, release mechanisms, and stowage provisions. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3.

3.4.28 HUMAN FACTORS DATA. - Reports shall be submitted as required by Specification MIL-H-22174 for use in monitoring and evaluating the contractor's human factors effort in the design and development of the guided missile system. These reports shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3.

3.4.29 ELECTRONIC EQUIPMENT DATA. - For each electronic equipment developed by the contractor under a missile system, the following data shall be submitted. Electronic equipment shall include flight test and maintenance and operational test and checkout equipment:

(1) INFORMATION ON NON-STANDARD PARTS. - Requests for approval of non-standard parts shall be accompanied by the data required by Specification MIL-E-8189 or MIL-E-5400 as applicable.

(2) ELECTRONIC TUBE AND SEMICONDUCTOR DEVICE COMPLEMENT REPORT. - For each equipment which employs electronic tubes, transistors or diodes, a report containing the proposed tube complement shall be submitted. The report shall be submitted on DD Form 816 which may be obtained from the Office of Printing and Publication of the various Naval Districts.

(3) NOMENCLATURE, NAMEPLATES AND SERIAL NUMBERS. - Nomenclature, nameplates and serial numbers shall be in accordance with Specification MIL-N-18307. The contractor shall request nomenclature for the articles, equipments and major components thereof giving the information required by the Federal Item Identification Guides for Supply Cataloging (Cataloging Handbook H6). Two copies of dimensional outline drawings of each article, equipment or major component there of shall accompany the nomenclature requests.

(4) DATA TO BE SUPPLIED WITH PRE-PRODUCTION OR DESIGN APPROVAL MODEL. - When a pre-production or design approval model of equipment is required under a guided missile system contract, two copies of each item of the following data shall accompany the model when shipped for test:

(a) External wiring diagrams

(b) Practical wiring diagram of each component or each constructional unit thereof, whichever is practicable, showing physical location and connections of detail parts and subassemblies with reference symbols and terminal numbers indicated.

(c) Complete schematic diagram.

(d) Overall functional block diagram

(e) Brief operating instructions

(f) Outline dimensional sketches of all major components

(g) Report of contractor's tests

3.4.30 CONTROL AND STABILIZATION SYSTEM REPORT. - A system design report shall be submitted accurately describing and analyzing the performance, stability and operating characteristics (dynamically and statically) of all mechanical, electro-mechanical, pneumatic, hydraulic control and stabilization equipment for each of the following portions of the flight path for each configuration: (1) Launching; (2) Mid-course; (3) Terminal. Power requirements, power developed by the system, type of input, amplification system, system parameters, and response characteristics shall also be included. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3.

This report shall also include a detail description of the methods and tests employed in making the analysis. This report shall be furnished as it evolves throughout the development phases and shall consist of an up-to-date description of the complete control and stabilization system. A revised analysis shall be submitted prior to flight test in all cases of change of either stabilization system or missile characteristics which may be reasonably expected to affect flight performance. Control and stabilization system components used in these tests shall be available to the Government at any time after the tests are completed for additional or special tests as may be required. Functional block diagrams and schematics of all equipments and mechanisms shall be presented.

3.4.31 GUIDANCE SYSTEM REPORT. - A report shall be submitted which sets forth the guidance problem and describes in detail the contractor's design approach to the solution of the problem. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. This report shall include a complete frequency analysis, system drawings such as block diagrams with functions explained and schematic diagrams, including antennas with functions of each element explained. These data shall be furnished as they evolve throughout the development phase and shall consist of an up-to-date description of the complete guidance system, including the drawings and functional explanations specified above.

3.4.32 MAINTENANCE AND OPERATIONAL TEST AND CHECKOUT EQUIPMENT REPORT.- A report shall be submitted describing the procedures for testing the missile system from acceptance to operational use. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. The report shall include all testing to be performed by operating forces and in service shops ashore and afloat. Insofar as practicable, items of test equipment shall be selected from the list of preferred standard test equipment, NAVAIR 16-1-525. The following information shall be furnished by the contractor for each item of recommended special test equipment:

(1) Name and address of contractor

(2) Identification of the equipment for which the test equipment is being recommended

(3) Identification of the recommended special test equipment

3.4.32 (Cont)

(4) A brief technical description of the anticipated use of recommended items e.g. measure magnetron power; display band pass audio filters; rotate gyroscopes at an accurately adjustable rate.

(5) A brief technical description of all required electrical and mechanical characteristics. This description shall be in sufficient detail to allow NAVAIR to determine if the functions of the special test equipment can be performed by alternate items.

3.4.33 FLIGHT TEST EQUIPMENT REPORT. - A report shall be submitted describing the flight test equipment, including telemetering equipment, beacons, etc., required during the flight test program. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3.

3.4.34 TELEMETERING ELECTRONIC DESIGN DATA. - Provide data for Telemetry Sets for the individual requirements of MIL-D-18300 as defined below. (Numbers below refer to Table I of MIL-D-18300).

3.5 Test Procedures for Individual Acceptance Tests Only. - Copies of these procedures shall be furnished the LGR for use in Acceptance Testing.

3.7 Report on Contractor Tests

3.8 Nomenclature; Serial Numbers; and Pertinent Identification Data.

3.11 Prepare drafts of any proposed revisions to existing specifications or new specifications, required to reflect the design of the equipment being produced.

3.18 Frequency Allocation and Spectrum Signature Data

3.4.35 ANTENNA/RADOME DATA REPORT. - An antenna/radome report shall be submitted which shall show the proposed general arrangement of all antennas/radomes. This report shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. In addition, the report shall include the following data for each antenna/radome:

(1) Radiation patterns of the antennas/radomes installed on the missile vehicle in accordance with IRIG Document No. 102-61, IRIG Document No. 102-61, IRIG Standard Coordinate System and Data Format for Antenna Patterns.

3.4.35 (Cont)

(2) Physical description (size and weight)

(3) The effect (if any) on aerodynamic drag of the missile

(4) Installation and performance data

(5) Frequency allocation data in accordance with 3.4.36

(6) Erosion resistance

(7) Beam deterioration with pointing angle

3.4.36 FREQUENCY ALLOCATION DATA. - The contractor shall submit complete Frequency Allocation and Equipment Spectrum Signature Data in accordance with WR-29 for each new equipment or system which will require use of the radio frequency spectrum both active (transmitter) and passive (receiver). Preliminary data is required early in the design of the equipment with revised and complete data being submitted as it becomes available in accordance with WR-29.Submission of the frequency allocation data for NAVAIR use does not relieve the contractor of any responsibility of obtaining FCC authorization to operate the equipment while in his possession.

3.4.37 ARMAMENT DATA. - A report shall be submitted which correlates the information available on warhead, fuze and guidance units proposed for use in the missile system. Problems associated with the functioning of each of the above units which affect the accuracy of warhead detonation to provide the highest target kill shall be discussed in this report. Thie report and the reports of 3.4.37.1, 3.4.37.2 and 3.4.37.3 shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3.

3.4.37.1 FUZE ANALYSIS. - A report analyzing the target intercept problem and accuracy of fuzing required to attain the specified target kill shall be submitted. Types of fuzing which may be applicable for the solution of the intercept problem shall be discussed with the advantages and disadvantages of each type enumerated. This analysis shall include an evaluation of the operability of the proposed fuze system(s) in the presence of all forms of expected jamming.

3.4.37.2 FUZE DATA. - A quarterly report shall be submitted which sets forth the status of fuze development. This report shall include a brief of development progress including circuit analysis of the fuze circuitry under development with improvements attained by modifications or new circuitry added. Results of major tests with description of tests performed shall be included.

3.4.37.3 GOVERNMENT-FURNISHED EQUIPMENT ARMAMENT DATA. - A report shall be submitted for GFE armament components (except nuclear) explaining in detail any problems associated with systems integration and effectiveness.

3.4.37.4 NUCLEAR WEAPON SYSTEM DATA (FOR MISSILES EQUIPPED WITH NUCLEAR WARHEAD). - A report shall be submitted for the nuclear weapon system (adaption kit) explaining in detail any problems associated with systems integration and effectiveness.

3.4.37.5 FUZING, WARHEAD, AND LAUNCHING AIRCRAFT COMPATIBILITY REPORT. - A report shall be submitted which sets forth the compatibility of the intended weapon system for safe delivery and escape of the launching aircraft. This report shall present the methods and basis for defining the warhead explosion field contours of critical weapon effects as specified by NAVAIR, and shall include a description of the following:

(1) Weapon yields and weapon trajectories considered.

(2) Arming sequence considered.

(3) Recommended delivery techniques or launching aircraft flight paths and conditions through the weapon release point.

(4) Recommended escape maneuvers or launching aircraft flight paths and conditions from weapon release point through shock arrival at the aircraft.

(5) Statement of all assumptions made and justification of any deviations from methods presented in referenced material.

3.4.37.6 STOCKPILE TO TARGET SEQUENCE DATA (FOR MISSILES EQUIPPED WITH NUCLEAR WARHEAD). - Missile System data as necessary for the preparation of the Stockpile to Target Sequence shall be provided. This document will be prepared by the Government and will define the operational and logistic concepts and both the natural and induced environmental criteria involved in the delivery of an Atomic weapon from the stockpile to the target and the logistic flow involved in re-cycling the Atomic weapons materials from the user to the stockpile. The (STS) data report will be in general conformation with: Headquarters, Field Command, Armed Forces Special Weapons Project, SRD, Handbook - Stockpile to Target Sequence.

3.4.37.7 CORRELATION DRAWINGS. - The contractor shall provide correlation drawings for the missile armament compartment and items contained therein and the launcher cartridge(s). Correlation drawings will be authenticated by each affected design agency. Correlation drawings are those drawings required during design and engineering for the purpose of:

(1) Providing mating and compatibility information

(2) Identifying significant mechanical, electrical and other critical interfaces, with tolerances. The information supplied should be compatible with the performance requirement and should include, but not be limited to: space configurations, bolt hole spacing, pin connectors, electrical loads, environmental limitations, weights, center of gravity, and other general background information required by other agencies.

(3) Providing sufficient initial information to enable the design agencies involved in the design of various elements in the missile system to proceed with engineering design effort.

3.4.38 WEIGHT AND BALANCE DATA. - Submit in accordance with Specification MIL-W-3947.

3.4.38.1 STUDIES OR PROPOSAL PHASES. - The data required by Table 1 of MIL-W-3947 shall be submitted for study contracts or proposal phases.

3.4.38.2 DEVELOPMENT AND PRODUCTION GUIDED MISSILES. - The following data shall be submitted in accordance with Specification MIL-W-3947 Table II. For purposes of acceptance inspection, the reports of (1) (2) and (4) shall contain the tabulated maximum and minimum weights and moments, with tolerances, for each section that must be held in order to achieve the weight and center of gravity of the assembled missile:

(1) Estimated Weight Report

(2) Calculated Weight Report

(3) Weight and Balance Status Reports

(4) Actual Weight Reports and Appendices

(5) Operational Weight Data. - Preflight Report. This report shall be furnished for, or be representative of missiles assigned for free flight test portions of Specification MIL-D-18243 for development missiles only.

3.4.38.2 (Cont)

For air launched missiles, data shall be submitted as supplements to (1), (2), (3) and (4) above to show the weight and balance affect of the complete missile installation on the specified launching aircraft. These data shall be listed in sufficient detail to identify the individual electronic units, launching equipment, etc., as well as derive the gross weights for the missile carrying condition. Test or maintenance equipment should not be listed unless it is airborne and is required in the launching procedure.

3.4.39 PROPULSION SYSTEM DATA. - The following propulsion system data shall be submitted:

(1) Complete set of documentation in accordance with MIL-D-23660.

(2) Complete set of installation-interface drawings of the propulsion unit in the missile including:

(a) Motor attachment points to missile
(b) Motor attachment designs to launcher
(c) Schematic for release of assembled motor-missile combination from rail or ejection launcher
(d) Schematic of initiation of ignition starting with pilot switches
(e) For rail-launching provide layout of rocket motor exhaust temperature and pressure profiles as related to all parts of launching aircraft
(f) Aerodynamic heating analysis data and measured data for propulsion unit as determined in para. 3.4.18.5.1 or as determined separately and reported herein.

3.4.40 TEST PROCEDURE MANUAL. - A test procedure manual shall be submitted which sets forth the plan and procedures for conducting the tests required by 3.5.1 and 3.5.3. The manual shall be submitted separately from, but may be prepared for insertion or integration in, the report of 3.4.3. The manual shall be in sufficient engineering detail to show specification compliance but need not extend to specific operations performed as a part of the manufacturing process. Each test procedure shall include a reference to the applicable verification criteria published in the report of 3.4.3.4. Where tests will not be used to show specification compliance the method used to show compliance shall be described. Sampling rates shall be specified where appropriate and shall include the sampling requirements of applicable specifications. Changes to the Test Procedure Manual stemming from design changes to applicable equipment must receive approval of NAVAIR prior to final adoption. Pending NAVAIR approval or disapproval, the contractor may make interim use of the changed procedures with the concurrence of the LGR.

3.4.41 DEVELOPMENT TESTS REPORTS. - A report shall be submitted for each group of tests required by 3.5.1. This report shall present the results of the tests, the contractor's analysis of results, including conclusions in sufficient engineering detail to enable NAVAIR to assess compliance with existing specifications. When detailed coverage is presented in other design data submitted under other provisions of this specification it need not be duplicated in this report. In such cases reference shall be made to the applicable report for additional information.

3.4.42 EXPERIMENTAL FLIGHT TEST REPORT. - Individual reports of the following types are required. NAVAIR may disapprove release of any specific missile for flight when the flight does not appear to be in the best interest of the missile system development.

3.4.42.1 PREFLIGHT PLANNING REPORT. - This report shall be prepared for each discrete phase of the experimental flight program. Such phases shall include subdivision within the firing programs and subdivisions within captive flight program if any. Preflight planning report shall include the data specified below and shall be amended as found necessary prior to flight of a revised missile/weapon system.

(1) General description of plans and objectives of flight.

(2) Description of equipment including block diagrams, wiring diagrams, general arrangement, test equipment, as changed from previous equipments.

(3) Deviations from the general flight test program as established in 3.4.2.

(4) Description of tests to be performed prior to firing.

(5) Description of instrumentation required.

(6) Worst failure splash patterns.

(7) Frequency allocation data required in 3.4.36.

(8) Data needed for Explosive Safety Approved (ESA).

(9) Data on the Preflight Rating Tests (PFRT).

(10) Reports of 3.4.18.4 and 3.4.19 for the determination of launch safety.

3.4.42.2 PREFLIGHT DETAILED FLIGHT PLAN FOR EACH FLIGHT. - The plan shall include data sufficient to allow the test activity to plan for each flight, including:

(1) Specific description of plans and objectives of flight.

(2) Specific schedules.

(3) Specific instrumentation.

3.4.42.3 POST FLIGHT FIRING LETTER REPORT. - The letter report shall be submitted after every missile firing and shall be a brief description of the flight test and results including:

(1) Statement of the plans and objectives.

(2) Visual observations.

(3) Telemetered or other instrumented miss distance.

(4) Preliminary conclusions.

3.4.42.4 POST FLIGHT EVALUATION REPORT. - This report shall be submitted after the completion of each discrete phase of the experimental flight program and shall be an appendix to the comparable preflight planning report (3.4.42.1) and shall contain:

(1) Analysis of flight results including comparison with expected results.

(2) Conclusions

(3) Plans for feedback of conclusions into the missile/weapon/AMCS system design.

3.4.43 HANDBOOKS. - The following handbooks are required:

3.4.43.1 HANDBOOK OF MAINTENANCE INSTRUCTIONS. - This handbook shall be prepared in accordance with Specification MIL-H-21287 for air launched missiles. This handbook will be for use by personnel qualified for detail repair which will involve the use of maintenance equipment not normally available to personnel aboard ship or in the field. Instructions shall cover maintenance of the complete missile system with the exception of Government-furnished equipment. Utilization of this handbook aboard ship will be on an as needed basis. The handbook shall include the following appendices:

APPENDIX NO. 1 - MAINTENANCE TEST EQUIPMENT. - This appendix shall cover the maintenance procedures on the test equipment and handling equipment used in the maintenance of the missile system.

3.4.43.1 (Cont)

APPENDICES NOS. 2, 3, etc. - LAUNCHING AIRCRAFT - A separate appendix shall be furnished for each launching aircraft. These instructions shall be in general accordance with Specification MIL-H-18248 and shall include maintenance instructions for missile system components installed in the launching aircraft. These instructions shall not duplicate service or maintenance instructions covered in the applicable aircraft handbook of maintenance instructions or component equipment handbooks.

3.4.43.2 ILLUSTRATED PARTS BREAKDOWN. - This handbook shall be prepared in accordance with Specification [illegible]M-8910.

3.4.43.3 HANDBOOK OF ASSEMBLY AND CHECKOUT INSTRUCTIONS. - This handbook shall be prepared in accordance with Specification MIL-H-21288 for air launched missiles. These instructions shall be prepared for use by personnel aboard ship, in the field, or at processing activities whose responsibility includes removal of the missile from shipping containers, section checkout, assembly, component system replacement, missile checkout, placement in ready storage, removal from ready storage, checkout, and return to ready storage. The handbook shall include the following appendices:

APPENDIX NO. 1 - MISSILE SYSTEM OPERATIONAL TEST AND CHECKOUT EQUIPMENT. - This appendix shall be prepared for use by personnel aboard ship or in the field whose responsibility is missile system checkout. A complete description, theory of operation, and maintenance of the missile system operational test and checkout equipment shall be included.

APPENDIX NO. 2 - OPERATIONAL TEST AND CHECKOUT EQUIPMENT TEST SETS. - This appendix shall be prepared for use by personnel whose responsibility is use and maintenance of test sets which checkout and trouble shoot the operational test and checkout equipment.

APPENDIX NO. 3 - ASSEMBLY GROUND HANDLING EQUIPMENT. - This appendix shall be prepared for use by personnel whose responsibility is use and maintenance of ground handling equipment necessary in performing the tasks covered by the Handbook of Assembly and Checkout Instructions.

APPENDICES NOS. 4, 5, etc. - LAUNCHING AIRCRAFT. - A separate appendix shall be furnished for each of the launching aircraft. These instructions shall be prepared for use by personnel whose responsibility is the servicing and checkout of the missile system components installed in the launching aircraft.

3.4.43.4 HANDBOOK OF LOADING AND UNLOADING INSTRUCTIONS. - This handbook shall be prepared in accordance with Specifications MIL-H-21374 for air launched missiles. These instructions shall be prepared for use by personnel aboard ship and in the field (primarily squadron personnel) whose responsibility is acceptance of ready storage missile, delivery to the launcher or launching aircraft, checkout of the launcher or launching aircraft, loading, checkout of launcher-missile or aircraft-missile combination, unloading and return to ready storage. All designated launching aircraft shall be included in the coverage. The handbook shall include the following appendices:

APPENDIX NO. 1 - LOADING GROUND HANDLING EQUIPMENT. - This appendix shall be prepared for use by personnel whose responsibility is operation and maintenance of handling equipment used in performing the tasks covered by the Handbook of Loading and Unloading Instructions.

APPENDICES NOS. 2, 3, etc. - AIRCRAFT INSTALLATION CHECKOUT EQUIPMENT. - A separate appendix shall be prepared for each of the launching aircraft for use by personnel whose responsibility is operation and maintenance of the aircraft installation equipment.

3.4.43.5 FLIGHT MANUAL . - This manual shall be prepared in general accordance with the applicable portions of Specification MIL-M-7700 and shall include a description of the missile, its mission, its in-flight profile and performance, and operating procedures with a complete tie-in between the missile and the launching aircraft. These instructions shall be prepared for use by flight personnel whose responsibility is tactical operation of the missile system. The manual shall include the following appendices:

APPENDICES NOS. 1, 2, etc. - LAUNCHING AIRCRAFT. - A separate appendix shall be furnished for each of the launching aircraft. This appendix shall cover the missile system operation as applied to the specific launching aircraft. Reference shall be made to the aircraft manufacturer's basic flight manual relating to items or procedures that are common to both the original aircraft configuration and its missile launching configuration.

3.4.43.6 ARMAMENT PROVISIONS (NUCLEAR WARHEAD ADAPTION KIT)(MISSILES WITH NUCLEAR WARHEAD CAPABILITY ONLY). - The adaption kit is defined to include safing, arming, fuzing, self destruct components and the necessary mechanical and electrical parts needed to adapt a nuclear warhead to a missile. Technical publications necessary for the assembly, test, storage, maintenance, inspection, alteration and modification for the nuclear warhead adaption kits shall be prepared in accordance with Specification MIL-M-20800. Requirements for the technical publications prepared in accordance with Specification MIL-M-20800 shall be as determined by NAVAIR.

3.4.43.7 SAFETY MANUAL. - A safety manual shall be provided in accordance with Specification MIL-S-23069.

3.4.44 SPECIFICATIONS AND SPECIFICATION REVISION PAGES. - Specifications and specification revision pages shall be submitted as follows:

3.4.44.1 CONTRACTOR PREPARED SPECIFICATIONS. - Specifications shall be submitted for equipment furnished by the missile system contractor. The specifications shall be in accordance with the Military Outline of Form and Instructions for the Preparation of Specifications, M200, unless otherwise specified. The specifications shall include, but not limited to, the following as applicable:

(1) Missile propulsion system

(2) Missile component systems as appropriate in accordance with XAV format

(3) Each item of launching aircraft equipment or logical grouping thereof in accordance with XAV Format

(4) Each item of operational test and checkout equipment or logical grouping thereof in accordance with XAV Format

(5) Each item of maintenance test equipment or logical grouping thereof in accordance with XAV Format

(6) Each item of handling equipment or logical grouping thereof provided by the contractor

(7) Packaging (shipping containers)

(8) Each item of telemetering equipment or logical grouping thereof in accordance with XAV Format

3.4.44.2 SPECIFICATION REVISION PAGES. - Revised pages for the contract detail specification and for contractor prepared specifications of 3.4.45.1 shall be furnished in accordance with Naval Weapon Requirements WR-8 except for the following (the following paragraph numbers refer to those of WR-8):

3.2.1(1) Add at the end of paragraph "or local Government representative".

3.2.1(3) Change to read, "Guaranteed Performance and Performance Conditions. - Retain contract detail specification paragraphs unless modified under the provisions of (1) above 3.8.1(e) of WR-8) and add additional alternate paragraphs or performance figures as necessary to reflect the contractor's latest actual or estimated performance. Additional paragraphs or figures shall be identified accordingly."

3.4.44.2 (Cont)

3.2.1(4) Change to read, "Weights. - Retain contract detail specification paragraphs unless modified under the provisions of (1) above (3.2.1(1) of WR-8) and add additional paragraphs of figures as necessary to reflect the contractor's latest actual or estimated weights. Additional paragraphs or figures shall be identified accordingly. Actual weights shall be provided for the first missile and revised for the last missile."

5 Delivery. - Change to read, "Delivery. - Revised pages and indices shall be delivered at specified intervals and in the quantities specified in the addendum to Specification MIL-D-8684 via the local Government representative. Classified revised pages and indices shall be handled in accordance with existing security regulations."

6.2.6 Aircraft. - Delete and substitute, "For purpose of this specification the term aircraft shall mean airplanes, helicopters, guided missiles and targets."

The final submittal of specification revision pages shall represent the last missile to which this addendum applies under the contract and shall include a cover page labeled, "Final Corrected".

3.4.45 LOGBOOK. - A logbook with provisions for recording significant occurrences throughout the expected operating life of the missile shall be provided for each missile. A primary consideration in the design of the logbook shall be suitability for use by service personnel; however, on developmental missiles, the inclusion of provisions for recording detailed engineering data is permissible. Each logbook shall include:

(1) One sheet which lists the serial numbers of each missile section as shipped, with added columns to show the serial numbers of each missile section at each reconfiguration of the missile.

(2) A record sheet on the results of missile readiness checkouts performed, commenting with the final factory acceptance test.

(3) A record sheet on airborne captive flights and launch attempts of the missile, including provisions for a brief statement of firing results.

3.4.45 (Cont)

(4) Detachable logbook sections, keyed to the serial numbers of replaceable missile sections, with provisions for recording field test operating times, test failures, repair actions, incorporation of engineering changes, and transfers (shipping/receiving) between activities. Information shall also be provided on limited duty cycle ratings, if any exist, to show when the design duty cycle is exceeded.

(5) A statement which provides field activities with methods of implementing the warranty or guaranty provisions of the production contract.

(6) A statement which provides instructions for use and end disposition of the logbook.

3.4.46 DEMONSTRATION PLAN. - A Formal Demonstration plan shall be submitted. The plan shall include:

(1) Indication by the contractor that the missile system is ready for demonstration and that it will meet the performance requirements of the applicable detail specification.

(2) Test schedules for demonstrating items required by the applicable addendum to Specification MIL-D-18243.

(3) Methods for obtaining, processing, and analyzing data.

(4) Methods of presenting results.

(5) A list of materials and services required specifically for this demonstration.

3.4.47 DEMONSTRATION REPORT. - A demonstration report shall be submitted. The report shall summarize the results of the formal demonstration including:

(1) Discussion of all items required to be demonstrated by the applicable demonstration addendum.

(2) Miss distance for each flight and conditions of flight.

(3) A plot of actual miss distance distribution and a comparison with predicted distributions obtained from analytical and simulator work on comparable flight conditions.

(4) A comparison of the guaranteed versus achieved accuracy.

3.4.47 (Cont)

(5) A comparison of the guaranteed versus achieved reliability.

(6) A complete analysis of all failures and defects which occurred in the demonstration, their causes, and their corrections.

3.4.48 ALTERATION REPORT. - DEMONSTRATION MISSILES. - An individual report on each alteration (alteration shall be as defined in Specification MIL-D-18243) proposed for incorporation in the demonstration missiles. Each report shall include the following information:

(1) Number of alteration (numerical sequence in any particular demonstration)

(2) Detailed description of alteration

(3) Reason for alteration

(4) Serial numbers of missiles affected

(5) Affect on validity of tests already completed

(6) Contractors signature

3.4.49 MICROFILM AND TABULATING CARDS. - Microfilm and tabulating cards of all engineering drawings and associated lists shall be furnished in accordance with Specification MIL-C-9878/1.

3.4.49.1 PREPARATION OF ENGINEERING DRAWINGS. - Engineering drawings and associated lists for the microfilm of 3.4.49 shall be prepared in accordance with Specification MIL-D-1000/1, and a completed NAVWEPS Form 4200/25.

3.4.50 QUALITY ASSURANCE DOCUMENTATION. - Quality Assurance Provisions shall be prepared in accordance with WR-43.

3.4.51 INTERCHANGEABILITY DATA. - The contractor shall provide the interchangeability and replaceability list required for the missile in accordance with MIL-I-8500.

3.4.52 RADAR REFLECTIVITY REPORT. - A report shall be submitted describing the actual radar reflectivity characteristics of the missile, including radar cross-section patterns as a function of frequency, polarization, and aspect angle. Specific measurement parameters for patterns shall be specified by NAVAIR.

3.4.53 SUMMARY OF DESIGN DATA. - The contractor shall submit a complete list in report form of the estimated dates for submittal of design data required by paragraph 3.4 except for structural items which are covered in paragraph 3.4.19. This report shall consist of the titles and submitta dates of all design data. This list shall reference contractors' letters by which data have been submitted and the letters by which data have been accepted including the serial number (if any), the date and the correspondence designation (i.e. AIR-510, AIR-604, etc.) and shall show estimated submittal dates for data not yet submitted. The summary shall list each paragraph in the applicable contract addendum and shall reference the letters which forwarded data under that paragraph.

3.5 TESTS REQUIRED. - Contractors not having laboratory testing facilities satisfactory to the Government Inspector shall engage the services of a commercial testing laboratory acceptable to NAVAIR. The following tests are required:

3.5.1 DEVELOPMENT TESTS. - Development tests shall be performed by the contractor and shall be conducted in accordance with the Test Procedure Manual of 3.4.41. Development Tests shall include all tests required to determine that the missile system and its major components meet the requirements of the applicable specifications. The right is reserved by NAVAIR or the LGR to modify the tests or require any additional tests deemed necessary to determine compliance with the applicable specifications. Development tests shall include, but not necessarily be limited to, the following:

(1) All ground, laboratory and flight tests incident to the selection of components and investigation of the performance of breadboard or engineering models of component systems, sub-assemblies or assemblies under ambient and environmental conditions.

(2) Electronic Equipment Tests. - In accordance with Specification MIL-T-5422.

(3) Radio and Electronic Interference Tests. - In accordance with Specifications MIL-I-6051, MIL-I-6181 and MIL-I-16910 as applicable.

(4) Aerodynamic Tests. - Performance and stability and control tests in accordance with test procedures approved by NAVAIR.

(5) Armament System Tests. - In accordance with test procedures approved by NAVAIR.

(6) Structural Tests. - In accordance with test procedures approved by NAVAIR.

3.5.1 (Cont)

(7) Propellant System Tests. - In accordance with test procedures approved by NAVAIR.

(8) Hydraulic or Pneumatic System Tests. - In accordance with test procedures approved by NAVAIR.

(9) Electrical System Tests. - In accordance with test procedures approved by NAVAIR.

(10) Ice Protection and Temperature Control System Tests. - In accordance with test procedures approved by NAVAIR.

(11) Shipboard vibration tests. - Tests shall be conducted in accordance with MIL-STD-167(SHIPS). In addition these tests shall determine the maximum shock that the missile can withstand when stowed in a manner similar to that in which it will be stowed when aboard ship.

(12) Safety Tests. - In accordance with test procedures approved by NAVAIR.

(13) Miscellaneous. - Other tests required by the LGR or which in the opinion of the contractor are required to fully test the article.

3.5.2 RELIABILITY TESTS. - Reliability tests shall be conducted in accordance with the Reliability Report of 3.4.6 as approved by NAVAIR.

3.5.3 ACCEPTANCE TESTS. - Acceptance Tests shall be conducted in accordance with the Test Procedure Manual of 3.4.40 as approved by NAVAIR by the contractor and witnessed by the LGR for all items submitted for acceptance under the contract. Acceptance tests shall consist of Individual Tests, Sampling Tests and Special Tests:

(1) Individual Tests. - Individual Acceptance tests shall be conducted on each item submitted for acceptance under the contract.

(2) Sampling Tests. - Sampling acceptance tests shall be conducted on a quantity of items as specified in the applicable specifications and/or the Test Procedure Manual of 3.4.40 as approved by NAVAIR. Items for sampling acceptance tests shall be selected by the LGR from those items which have passed the Individual Tests.

3.5.3 (Cont)

(3) Special Tests. - Special acceptance tests shall be conducted on the first item delivered after any engineering change. These tests shall be commensurate with the scope of the change and shall be used in cases where the scope does not warrant repeating the tests of 3.5.1, above. The tests shall be conducted in accordance with the Test Procedure Manual of 3.4.40 as approved by NAVAIR.

3.5.4 SERVICE TESTS. - Service tests will be performed by the government on equipment provided for that purpose under the contract to verify that the items delivered satisfy the requirements of the applicable specifications. The results of the service tests may be used by the government as evidence affecting the acceptance of like articles under the contract.

3.5.5 MAINTAINABILITY TESTS. - Maintainability tests shall be conducted in accordance with Test Procedure Manual as approved by NAVAIR.

3.5.6 WITNESSING OF TESTS. - Acceptance tests performed by the contractor shall be witnessed by the LGR unless otherwise directed by NAVAIR. The LGR may request from NAVAIR the assistance of other NAVAIR field activities as required. Flight tests performed at the contractor's plant shall be witnessed by the LGR. Flight tests performed at a NAVAIR test activity shall be witnessed by the agency designated by NAVAIR.

4. QUALITY ASSURANCE PROVISIONS

4.1 SAMPLING. - There are no applicable requirements.

4.2 EXAMINATION AND ACTION

4.2.1 EXAMINATION. - The LGR shall examine all design data for completeness, and for compliance with applicable specifications and contractual requirements. Design data not conforming to applicable requirements shall be returned to the contractor for revision prior to submittal to NAVAIR or release for manufacture. For data submitted to NAVAIR the LGR shall forward his comments by endorsement on the contractor's forwarding letter.

4.2.1.1 SUMMARY OF DESIGN DATA. - The LGR shall carefully inspect the Summary of Design Data for agreement with the records of his office and comment accordingly when forwarding the Summary and revisions thereof.

4.2.2 ACTION. - Action taken upon design data and tests shall be by acceptance, or review (information only) as specified in Table I. Action taken on drawings shall be by release or review (information only) as specified in Table I. The agency responsible for acceptance is to be determined and specified in Table I for each missile procurement.

4.2.2.1 COMPLETENESS OF DESIGN DATA AND DRAWINGS. - In the acceptance and release of design data and drawings NAVAIR or the LGR does not check or assume responsibility for accuracy or completeness of details or for any deviation from applicable specifications unless specifically approved by NAVAIR. All authorized deviations from the contract detail specification and other applicable specifications shall be specifically brought to the attention of NAVAIR in the letter forwarding the data.

4.2.2.2 REVISION OF DESIGN DATA. - Design data and drawings, requiring revision and resubmittal for acceptance or release by NAVAIR or the LGR, shall have all corrections so marked that they may be readily found. Design data, once accepted or released by NAVAIR or the LGR shall not be changed without written authorization by NAVAIR or the LGR as applicable and when so authorized, replacement copies shall be furnished to all addressees.

4.2.2.3 RELEASE OF DRAWINGS. - After acceptance or release of data submitted as required by this specification or addenda thereto, the LGR shall release all further drawings necessary for manufacture which do not conflict with or change what has already been accepted or released. The intent of this provision is that once the major features of design are released, the manufacturing drawings will be developed in accordance therewith. Release of drawings shall be signified by the dated signature, or initialing by the LGR in the drawing block reserved for Government approval. Such release of any drawing will constitute official release for fabrication or manufacture of the item, or items described thereon. Release of drawings does not constitute official release of unauthorized deviations from detail or design specification requirements and shall not be construed as acceptance of non-government specifications or standards. In releasing manufacturing drawings for fabrication of parts, the LGR, as a representative of NAVAIR, shall not assume responsibility for accuracy, completeness of detail, or proper fit or functioning of contractor-constructed parts or assemblies. The responsibility for satisfactory construction and functioning of the missile system or missile system parts, and for satisfactory stability and weight, rests entirely with the contractor.

4.2.2.4 DESIGN DATA SUBMITTED FOR INFORMATION. - Design data submitted to NAVAIR for information may not be acknowledged, however, NAVAIR may notify the contractor of any objectionable design features, etc., which would not be satisfactory for future guided missiles systems.

5. PREPARATION FOR DELIVERY

5.1 DESIGN DATA SUBMITTAL. - Design data for guided missile systems shall be submitted as specified in Table I. The contractor shall make every effort to expedite submittal of design data in order to allow sufficient time for review by NAVAIR prior to specific check points or release for flight, as applicable.

5.2 METHOD OF SUBMITTAL. - Contract design data, submitted to NAVAIR shall be via the LGR in the quantities specified herein. All letters forwarding design data and other correspondence relative to design data that have been submitted, shall be submitted via the LGR in triplicate. Design data of unrelated subject matter, for example: Structural Design Data and Electrical Installation Drawings, or Instrument Drawings and Power Plant Drawings, shall not be submitted under the same forwarding letter. Design data shall be shipped at the contractor's expense.

6. NOTES

6.1 RESPONSIBILITY FOR APPLICABLE SPECIFICATION AND PUBLICATIONS. - LGR's are furnished copies of the latest issue of all applicable specifications and publications as they become available. The responsibility for ascertaining and following the revisions of specifications applicable to a specific contract rests with the contractor. NAVAIR or LGR's office will inform contractors of the number and date of the latest issue of any specification upon request.

6.2 DUPLICATION OF DATA. - Duplication of data shall be avoided. Data may be referenced when included in previous reports submitted under this addendum and required in subsequent reports.

6.3 REVISION OF DATA. - Revision to reports submitted in accordance with Table I shall be made whenever new information invalidates such reports.

6.4 SECURITY CLASSIFICATION. - Classified design data and drawings shall contain the proper security classification on drawings and on each page of reports, specifications, photographs, etc. in accordance with existing security regulations.

6.5 USE OF THIS SPECIFICATION. - This general specification shall be used as the standard form for the preparation of addenda. Addenda shall be prepared as follows:

6.5.1 Agree with this specification in paragraph arrangement, numbering and headings, except that where a paragraph is listed in the addendum as "applicable", "not applicable" or "not required" subsequent subparagraphs may be omitted provided numbering sequence is not affected.

6.5.2 Unless paragraphs of addenda completely supersede corresponding paragraphs of this specification, paragraphs will be labelled as "applicable" or "required"(with or without specific deviations or supplementary requirements), "not applicable", or "not required". General requirements or instructions will be designated as "applicable" or "not applicable", and requirements for specific data or action will be designated as "required" or "not required".

6.5.3 Paragraphs and subparagraphs will be added as required.

6.6 DEFINITIONS

6.6.1 DIFFERENCES OVER PROTOTYPE. - The term "differences over prototype" when used in addenda to this specification shall be defined to mean that the design data required for a guided missile system for which there is a specified prototype shall consist of only such additional data as are necessary to reflect the differences over the data submitted for the previous design. In each case the applicable prototype will be specified in the addendum.

6.6.2 AIR LAUNCHED GUIDED MISSILE SYSTEM. - Air launched guided missile system may include the following:

(1) Missile

(a) Airframe group
(b) Guidance subsystem
(c) Armament subsystem
(d) Propulsion subsystem
(e) Control subsystem
(f) Telemetry subsystem(s)
(g) Secondary power subsystem
(h) Interunit wiring harness

(2) AMCS

(a) Infrared subsystem
(b) Radar subsystem
(c) Computer subsystem
(d) Control and display subsystem
(e) Power subsystem
(f) Missile auxiliaries subsystem
(g) Racks and mounting subsystem

(3) Special Support Equipment

(a) Missile test equipment
(b) Portable test equipment
(c) Special conditioning and servicing equipment
(d) Special handling equipment

(4) Launcher(s)

6.6.3 ABBREVIATIONS. - Identifying abbreviations used herein are defined as follows:

NAVAIR -Naval Air Systems Command Headquarters
Washington, D. C. 20360

LGR -Local Government Representative - Designated Government representative having responsibility for contract administration services at the contractor's plant

NAVMISCEN -Naval Missile Center
Point Mugu, California 93041

NADC -Naval Air Development Center
Johnsville, Warminster, Pennsylvania 18974

NAMC -Naval Air Material Center
Philadelphia, Pennsylvania 19112

NAEL(SI) -Naval Air Engineering Laboratory (Ship Installation)
Naval Air Engineering Center, Philadelphia, Pennsylvania 19112

NPC -Naval Photographic Center
Naval Air Station, Washington, D. C. 20390

ASO -Aviation Supply Office
Philadelphia, Pennsylvania 19111

DTMB -David Taylor Model Basin
Washington, D. C. 20007

NRL -Naval Research Laboratory
Washington, D. C. 20390

NWHL(NAD EARLE) -Naval Weapons Handling Laboratory
Naval Ammunition Depot, Earle, Coltsneck, New Jersey 07722

NOTS(CL) -Naval Ordnance Test Station
China Lake, California 43555

NATSF -Commanding Officer, Naval Air Technical Service Facility
700 Robbins Ave., Philadelphia, Pennsylvania 19111

NAVAIRSYSCOMREPLANT -Naval Air Systems Command Representative Atlantic
Naval Air Station, Norfolk, Virginia 23511

NAVAIRSYSCOMREPCEN -Naval Air Systems Command Representative, Central
Wright-Patterson Air Force Base, Ohio 45433

6.6.3 (Cont)

NAVAIRSYSCOMREPPAC -Naval Air Systems Command Representative Pacific
Naval Air Station, North Island, San Diego, Calif. 92135

COMNAVAIRPAC -Commander, Naval Air Force, U.S. Pacific Fleet,
Naval Air Station, San Diego, California 92135

COMNAVAIRLANT -Commander, Naval Air Force, U.S. Atlantic Fleet,
Naval Air Station, Norfolk, Virginia 23511

NWEF -Naval Weapons Evaluation Facility, Kirtland Air Force Base,
Albuquerque, New Mexico 87117

NATC -Naval Air Test Center
Patuxent River, Maryland 20670

NOLC -Naval Ordnance Laboratory
Corona, California 91720

NWLD -Naval Weapons Laboratory
Dahlgren, Virginia 22448

NAFI -Naval Avionics Facility
Indianapolis, Indiana 42618

TMA -Technical Monitoring Agency

DASA -Defense Atomic Support Agency, Sandia,
Albuquerque, New Mexico 87115

DDC -Defense Documentation Center, Building 5,
Camerson Station, Alexandria, Virginia 22314

AMCS -Airborne Missile Control System

6.7 DEVIATIONS. - Deviations from this specification shall not be permitted unless specified in addenda to this speification, in the contract amendment, or by other written authorization of NAVAIR.

TABLE I

UNLESS OTHERWISE SPECIFIED IN THE ACTION COLUMN ALL DATA AND TESTS SHALL BE ACCEPTED OR RELEASED BY THE LOCAL GOVERNMENT REPRESENTATIVE

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.1	Program Master Plan	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	10 Nonrepro. 4 " 3 "	Recurring	Not later than 90 days after notification of contract award. Revision pages quarterly thereafter.
3.4.2	Program Planning Report	NAVAIR NAVMISCEN TMA NAEL,SI ASO	Accept. Info. Info. Info.	4 Nonrepro. 4 " 1 " 1 " 1 "	Recurring	Not later than 90 days after notification of contract award, then as program changes.
3.4.3.1	Problem Definition (Part I)	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	6 Nonrepro. 4 " 3 "	Recurring	Not later than 4 months after notification of contract award. Then as program progresses.
3.4.3.2	Analytical Solution (Part II)	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	6 Nonrepro. 4 " 3 "	Recurring	Not later than 45 days prior to Initial Design Review then as Program progresses.
3.4.3.3	Mechanization (Part III)	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	6 Nonrepro. 4 " 3 "	Recurring	Not later than 60 days prior to Prototype System Review. Then as program progresses.
3.4.3.4	Verification (Part IV)	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	6 Nonrepro. 4 " 3 "	Recurring	Not later than 60 days prior to Preflight and Serviceability Inspection. Then as program progresses.

NOTE:
See para. 4.2.2 regarding designation of an agency for acceptance of data.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.4	Missile System Operational and Costs Estimates Report	NAVAIR	Accept.	6 Nonrepro.	Recurring	Not later than 30 days prior to Initial Design Review, then as program progresses. Final revision not later than 30 days prior to first demonstration flight
		NAVMISCEN	Info.	4 "		
		TMA	Info.	3 "		
		ASO	Info.	1 "		
		NAEL,SI	Info.	1 "		
					Final	
3.4.5	Missile System Brochure	NAVAIR	Info.	50 Photo &	Recurring	Not later than 6 months after notification of contract award. Review every 180 days to determine if correct. If not revised copies to be furnished.
		NAVMISCEN	Info.	4 Offset		
		TMA	Info.	3 "		
		*AIR-604	Info.	2 "		
		NAEL,SI	Info.	1 "		
		ASO	Info.	1 "		
*Final Copy Only		*DDC	Info.	20 "		
3.4.6	Reliability Reports	NAVAIR	Accept.	14 Nonrepro.	Recurring	In accordance with MIL-STD-1304
		NAVMISCEN	Info.	4 "		
		TMA	Info.	3 "		
		ASO	Info.	1 "		
3.4.7	Environmental Criteria Report	NAVAIR	Accept.	3 Nonrepro.	Recurring	Not later than 60 days after each series of tests performed.
		NAVMISCEN	Info.	2 "		
		TMA	Info.	3 "		
		NAEL,SI	Info.	1 "		
3.4.8	Monthly Progress Letters	NAVAIR	Info.	10 Nonrepro.	Recurring	Not later than 7 days after the end of each reporting period.
		NAVMISCEN	Info.	4 "		
		TMA	Info.	3 "		
		NAEL,SI	Info.	1 "		
		LGR	Info.	1 "		
3.4.9	Pert Reporting Requirements	NAVAIR	Info.	2 Nonrepro.	Recurring	In accordance with agreement between contractor and Navy
		TMA	Info.	2 "		

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.10(1)	Initial Design Review		Approval			Not later than 60 days prior to first missile launching with the complete missile system.
3.4.10(4)	Mockup Photo-	NAVAIR	Info.	3 Sets	Recur-	Not later than 15 days after Mockup Inspection and 15 days after Pre-flight and Service-ability Inspection.
		NAVMISCEN	Info.	1 Prints	ring	
		TMA	Info.	1 "		
		NAEL,SI	Info.	1 "		
		ASO	Info.	1 "		
		LGR	Info.	1 "		
3.4.11.1	Slides, Charts, Graphs, etc.	NAVAIR	Info.	2 Nonrepro.	Recur-ring	Not later than 30 days subsequent to request by NAVAIR.
3.4.11.2	Motion Picture Film	NPC	Accept.	1 Orig.	Recur-	As specified in 3.4.11.2
		NAVAIR	Info.	1 Copy	ring	
3.4.12	Simulator Program Reports	NAVAIR	Accept.	4 Nonrepro.	Non-	Not later than 60 days after comple-tion of a major program.
		NAVMISCEN	Info.	1 "	recur-	
		TMA	Info.	1 "	ring	
		AIR-604	Info.	2 "		
3.4.13	Aircraft Installa-tion Report	NAVAIR	Accept.	4 Nonrepro.	Recur-	Not later than 6 months after notifi-cation of contract award. Revisions semi-annually or more frequently as required.
		NAVMISCEN	Info.	3 "	ring	
		TMA	Info.	3 "		
		NAEL,SI	Info.	1 "		
		NWEF	Info.	2 "		

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.14	Ship Installation Report	NAVAIR	Accept.	4 Nonrepro.	Recurring	Not later than 30 days prior to Preflight and Serviceability Inspection. Revisions as the program progresses.
		NAVMISCEN	Info.	3 "		
		TMA	Info.	3 "		
		NAEL,SI	Info.	1 "		
					Final	Not later than 60 days after completion of Demonstration.
3.4.15	Handling Equipment Report	NAVAIR	Accept.	4 Nonrepro.	Recurring	Not later than 30 days prior to Preflight and Serviceability Inspection. Revisions as the program progresses.
		NAVMISCEN	Info.	3 "		
		TMA	Info.	3 "		
		NAEL,SI	Info.	1 "		
3.4.16	Shipping Containers Report	NAVAIR	Accept.	2 Nonrepro.	Recurring	Not later than 30 days prior to Initial Design Review.
		NAVMISCEN	Info.	3 "		
		NOTS(CL)	Info.	3 "		
		NAEL,SI	Info.	1 "		
		NWHL,NAD, Earle	Info.	2 "		
3.4.17	Integrated Systems Dynamics Report	NAVAIR	Accept.	4 Nonrepro.	Recurring	Initial report to be submitted not later than 90 days after notification of contract award. Subsequent revisions or replacements at intervals not greater than 4 months or a statement to the effect that no revisions have been made shall be submitted.
		NAVMISCEN	Info.	4 "		
		TMA	Info.	3 "		
		*AIR-604	Info.	2 "		
		*DDC	Info.	20 "		
					Final	Not later than 30 days prior to first free flight.

*FINAL REPORT ONLY

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.18.1.1	Aerodynamic Investigation Program	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	3 Nonrepro. 3 " 3 "	Recurring	Not later than 30 days after notification of contract award. Revisions prior to undertaking any changes in the test program.
3.4.18.1.1(1)	Proposed Investigation Programs Report for Government-Furnished Facilities	Testing Facility NAVAIR TMA	Info. Accept. Info.	3 Nonrepro. 3 " 3 "	Nonrecurring	As soon as practicable, but not later than 30 days prior to requested test starting date.
3.4.18.1.1(2)	Investigation Programs Report for tests at contractor's or other privately operated facilities	NAVAIR TMA	Info. Info.	3 Nonrepro. 3 "	Nonrecurring	Not later than 30 days prior to scheduled test starting date.
3.4.18.1.2	Aerodynamic Model Drawings	Testing Facility Construction Facility	Accept. Info.	2 Nonrepro. 2 "	Nonrecurring	Prior to starting model construction and as soon as practicable following test facility acceptance of design.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.18. 1.3(1)	Interim Letter Reports	NAVAIR NAVMISCEN TMA	Info. Info. Info.	3 Nonrepro. 3 " 3 "	Non-recurring	Not later than 20 days after completion of testing during each facility occupancy.
3.4.18. 1.3(2)	Test Data Reports	NAVAIR NAVMISCEN TMA	Info. Info. Info.	3 Nonrepro. 3 " 3 "	Non-recurring	Not later than 40 days following receipt of test data by contractor.
3.4.18.2	Stability and Control Report	NAVAIR NAVMISCEN TMA *AIR-604 *DDC	Accept. Info. Info. Info. Info.	4 Nonrepro. 3 " 3 " 2 " 20 "	Recurring	Initial report to be submitted not later than 90 days after notification of contract award. Subsequent revisions or replacements at intervals not greater than 4 months or a statement to the effect that no revisions have been made shall be submitted.
		*FINAL REPORT ONLY			Final	Not later than 30 days prior to first free flight.
3.4.18.3.1	Basic Data	NAVAIR	Accept.	3 Nonrepro.	Recurring	Not later than 90 days after notification of contract award. Revisions whenever configuration changes result in significant performance changes.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.18. 3.2(1)	Performance data Report	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	3 Nonrepro. 3 " 3 " 1 "	Recurring	Not later than 30 days after approval of basic data. Revisions whenever configuration changes result in significant performance changes.
3.4.18. 3.2(2)	SAC Charts	NAVAIR	Accept.	2 Repro. glossy prints	Recurring	Same as (1) above
3.4.18.3.3	Additional Submittals	Same as for 3.4.18.3.2(1)				Not later than 60 days following receipt of request from NAVAIR.
3.4.18.4	Launching Characteristics Report	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	6 Nonrepro. 3 " 3 " 1 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as program progresses.
3.4.18.5.1	Aerodynamic and Thermodynamic Heating Analysis Report	NAVAIR NAVMISCEN TMA AIR-604 DDC	Accept. Info. Info. Info. Info.	4 Nonrepro. 2 " 3 " 2 " 20 "	Nonrecurring	Not later than 6 months prior to estimated date of first inflight launching.
3.4.18.5.2	Structural Heating Summary Report	NAVAIR NAVMISCEN TMA AIR-604 DDC	Accept. Info. Info. Info. Info.	4 Nonrepro. 2 " 3 " 2 " 20 "	Nonrecurring	Not later than 30 days prior to first flight.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.18.5.3	Component Heating Summary Report	NAVAIR NAVMISCEN TMA AIR-604 DDC	Accept. Info. Info. Info. Info.	5 Nonrepro. 2 " 3 " 2 " 20 "	Non-recurring	Not later than 30 days prior to first flight.
3.4.19	Structural Design and Test Data	NAVAIR NAVMISCEN TMA	* Info. Info.	1 Nonrepro. 3 " 3 "		Submittal date as specified in MIL-A-8868 and MIL-A-8870 as modified by 3.4.19
*Reports shall be submitted for acceptance. Data shall be submitted for information.						
3.4.19.1	Structural Drawings	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	1 Nonrepro. 1 " 1 "	Non-recurring	Not later than 30 days prior to release for manufacture.
3.4.20.1	Information on Non-standard Parts	NAVAIR NAVMISCEN TMA NAFI	Info. Info. Info. Accept.	2 Nonrepro. 2 " 1 " 2 "	Non-recurring	Not later than 30 days prior to Prototype System Review.
3.4.20.2	Nomenclature, Nameplates and Serial Numbers	NAVAIR	Accept.	2 Nonrepro.	Non-recurring	Not later than 30 days prior to Prototype System Review.
3.4.20.3	Schematic Diagrams	NAVAIR NAVMISCEN TMA	Release Info. Info.	2 Nonrepro. 3 " 3 "	Non-recurring	Not later than 30 days prior to Initial Design Review.
3.4.20.4	Master Wiring Diagrams	NAVAIR NAVMISCEN TMA	Release Info. Info.	2 Nonrepro. 3 " 3 "	Non-recurring	Not later than 30 days prior to Initial Design Review.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.20.5	Electrical Load Analysis	NAVAIR NAVMISCEN TMA	Release Info. Info.	2 Nonrepro. 3 " 3 "	Non-recurring	Not later than 30 days prior to Initial Design Review.
3.4.21	Materials and Processes Development and Evaluation Report	NAVAIR NAVMISCEN TMA AIR-604 DDC	Info. Info. Info. Info. Info.	2 Nonrepro. 1 " 3 " 2 " 20 "	Recurring	Not later than 30 days prior to Initial Design Review, then Semi-annually.
3.4.22	Special Materials Parts List	NAVAIR NAVMISCEN TMA	Info. Info. Info.	2 Nonrepro. 1 " 3 "	Recurring	Prior to fabrication of any parts of the materials concerned then as changes occur.
3.4.23	Finish Specification and Three-View Drawing	NAVAIR LGR NAVMISCEN TMA	Info. Accept. Info. Info.	1 Nonrepro. 5 " 1 " 3 "	Non-recurring	Not later than 30 days prior to Preflight and Serviceability Inspection.
3.4.24	Heating and Cooling Report	NAVAIR NAVMISCEN TMA NAEL,SI AIR-604 DDC	Accept. Info. Info. Info. Info. Info.	2 Nonrepro. 2 " 3 " 1 " 2 " 20 "	Non-recurring	Not later than 30 days prior to Initial Design Review.
3.4.25	Hydraulic System Data	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	3 Nonrepro. 1 " 3 " 1 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as Program progresses.
3.4.26	Pneumatic System Data	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	3 Nonrepro. 1 " 3 " 1 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as Program progresses.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.27	Recovery System Report	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	3 Nonrepro. 3 " 3 " 1 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as Program progresses.
3.4.28	Human Factors Preliminary Report	NAVAIR NAVMISCEN TMA	Info. Info. Info.	3 Nonrepro. 4 " 3 "	Nonrecurring	Not later than 4 months after notification of contract award.
	Human Factors Final Report	NAVAIR NAVMISCEN TMA AIR-604 DDC	Accept. Info. Info. Info. Info.	3 Nonrepro. 4 " 3 " 2 " 20 "	Recurring	Not later than 30 days prior to Prototype System Review. Revisions as the program progresses.
3.4.29(1)	Information on Non-Standard Parts	NAVAIR NAVMISCEN TMA NAFI	Info. Info. Info. Accept.	2 Nonrepro. 2 " 1 " 2 "	Recurring	Not later than 30 days prior to Prototype System Review. Revisions as program progresses.
3.4.29(2)	Tube Complement Report	NAVAIR NAFI TMA	Info. Info. Info.	2 Nonrepro. 1 " 1 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as program progresses.
3.4.29(3)	Nomenclature, Nameplates and Serial Numbers	AIR-52021	Accept.	2 Nonrepro.	Nonrecurring	Not later than 30 days prior to Prototype System Review.
3.4.29(4)	Design Approval Model Data	NAVAIR NAVMISCEN TMA	Info. Info. Info.	2 Nonrepro. 1 " 1 "	Nonrecurring	To accompany model specified by NAVAIR
3.4.30	Control and Stabilization System Report	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	4 Nonrepro. 3 " 3 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as program progresses.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.31	Guidance System Report	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	4 Nonrepro. 3 " 3 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as program progresses.
3.4.32	Maintenance and Operational Test and Checkout Equipment Report	NAVAIR NAVMISCEN TMA NAEL,SI ASO	Accept. Info. Info. Info. Info.	4 Nonrepro. 3 " 3 " 1 " 1 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as program progresses.
3.4.33	Flight Test Equipment Report	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	4 Nonrepro. 2 " 3 "	Recurring	Not later than 30 days prior to Preflight and Serviceability Inspection.
3.4.34	Telemetering Electronic Design Data					Revisions as program progresses.
	Test Procedures	NAVAIR LGR TMA	Accept. of Info. as determined by LGR	3 Nonrepro. 1 " 1 "	Recurring	Not later than 15 days prior to start of tests. Changes prior to use of contractor
	Report on Contractor's Tests	NAVAIR LGR TMA	Info. Info. Info.	3 Nonrepro. 1 " 1 "	Nonrecurring	Not later than 30 days after completion of tests
	Nomenclature	AIR-52021 NAVAIR	Assign Info.	1 Nonrepro. 1 "	Recurring	As soon as possible and not later than 60 days prior to placing order for nameplates
	Specifications/ Revisions	NAVAIR LGR NAVMISCEN	Info. Info. Info.	6 Nonrepro. 2 " 1 "	Recurring	Within 30 days of NAVAIR approval
	Frequency Allocation Data	NAVAIR NAVMISCEN	Accept. Info.	3 Nonrepro. 1 "	Nonrecurring	Not later than 6 months prior to delivery of first equipment

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.35	Antenna/ Radome Data Report	NAVAIR NAVMISCEN NADC	Accept. Info. Info.	2 Nonrepro. 2 " 3 "	Recurring	Not later than 30 days prior to Prototype System Review. Revisions as program progresses.
3.4.36	Frequency Allocation Data	NAVAIR NAVMISCEN	Accept. Info.	6 Nonrepro. 1 "	Recurring	Prior to fabrication of equipment. Revisions as changes occur.
3.4.37	Armament Data	NAVAIR NAVMISCEN NADC	Accept. Info. Info.	4 Nonrepro. 3 " 3 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as program progresses.
3.4.37.1	Fuze Analysis	NAVAIR NAVMISCEN NADC NOLC	Accept. Info. Info. Info.	4 Nonrepro. 3 " 3 " 3 "	Non-recurring	Not later than 90 days after notification of contract award.
3.4.37.2	Fuze Data	NAVAIR NAVMISCEN TMA NOLC	Info. Info. Info. Info.	4 Nonrepro. 3 " 3 " 3 "	Recurring	Quarterly reports starting 120 days after notification of contract award and continuing for the duration of the contract.
3.4.37.3	GFE Armament Data	NAVAIR NAVMISCEN TMA	Info. Info. Info.	4 Nonrepro. 3 " 3 "	Recurring	Monthly reports starting 120 days after notification of contract award and continuing for the duration of the contract. May be included in the Monthly Progress Letters of 3.4.8.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.37.4	Nuclear Weapon System Data	NAVAIR NAVMISCEN TMA	Info. Info. Info.	4 Nonrepro. 3 " 3 "	Recurring	Monthly reports starting 130 days after notification of contract award and continuing for the duration of the contract. May be included in the Monthly Progress Letters of 3.4.8.
3.4.37.5	Fuzing Warhead and Launching Aircraft Compatibility Report	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	4 Nonrepro. 3 " 3 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as nuclear weapon system is firmed up.
3.4.37.6	Stockpile to Target Sequence Data	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	4 Nonrepro. 3 " 3 "	Recurring	Not later than 90 days prior to Prototype System Review. Revisions as nuclear weapon system is firmed up.
3.4.37.7	Correlation Drawings	NAVAIR NAVMISCEN TMA	Info. Info. Info.	2 Nonrepro. 2 " 2 "	Recurring	Not later than 6 months after contract award. Revisions as program progresses.
3.4.38.1(1)	Studies or Proposal Phases	NAVAIR	Comment	1 Nonrepro.	Nonrecurring	Studies-At completion of contract Proposal-With submission of proposal.
3.4.38.2(1)	Estimated Weight Report	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	1 Nonrepro. 1 " 1 "	Nonrecurring	Not later than 30 days after notification of contract award.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.38.2(2)	Calculated Weight Report	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	1 Nonrepro. 1 " 1 "	Non-recurring	Not later than 30 days after completion of design phase represented by the report.
3.4.38.2(3)	Weight and Balance Status Reports	NAVAIR NAVMISCEN TMA	Info. Info. Info.	1 Nonrepro. 1 " 1 "	Recurring	Not later than 15 days after completion of design phase represented by the report.
3.4.38.2(4)	Actual Weight Reports and Appendices	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	1 Nonrepro. 1 " 1 "	Non-recurring	Not later than 30 days after the article is weighed.
3.4.38.2(5)	Operational Weight Data	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	1 Nonrepro. 1 " 1 "	Non-recurring	At the time of delivery of the missile
3.4.39	Propulsion System Data	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	4 Nonrepro. 3 " 3 " 1 "	Recurring	Not later than 30 days prior to Initial Design Review. Revisions as program progresses.
3.4.40	Test Procedure Manual	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	4 Nonrepro. 3 " 3 " 1 "	Recurring	Not later than 90 days prior to intended use. Revisions not later than 30 days prior to their expected use.
3.4.41	Development Test Reports	NAVAIR TMA	Accept. Info.	4 Nonrepro. 3 "	Non-recurring	Not later than 30 days after completion of tests and reduction of data.

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.42.1	Pre-flight Planning Report	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	4 3 3	Nonrepro. " "	Recur-ring	At least 60 days prior to first missile flight in each group of flight tests.
3.4.42.2	Pre-flight Detailed Flight Plan for each FLIGHT	NAVMISCEN NAVAIR	Accept. Info.	2 1	Nonrepro. "	Recur-ring	As specified by NAVMISCEN.
3.4.42.3	Post-Flight Firing Letter Report	NAVAIR NAVMISCEN TMA	Info. Info. Info.	4 3 3	Nonrepro. " "	Recur-ring	Not later than 10 days after missile flight.
3.4.42.4	Post-Flight Evaluation Report	NAVAIR NAVMISCEN TMA	Info. Info. Info.	4 3 3	Nonrepro. " "	Recur-ring	Not later than 60 days after completion of test and reduction of data.
3.4.43.1	Handbook of Maintenance Instructions	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	10 4 3 2	Nonrepro. " " "	Prelim.	Not later than 60 days after Preflight and Serviceability Inspection.
		NAVAIR NAVMISCEN TMA NAEL,SI LGR	Accept. Info. Info. Info. Info.	20 5 3 1 1	Nonrepro. " " " "	Final	Copies shall be in white print form and shall be delivered not later than 15 days prior to start of demonstration.
3.4.43.2	Illustrated Parts Breakdown	Same as for 3.4.43.1					
3.4.43.3	Handbook of Assembly and Checkout Instructions	Same as for 3.4.43.1					

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.43.4	Handbook of Loading and Unloading Instructions	Same as for 3.4.43.1				
3.4.43.5	Flight Manual	Same as for 3.4.43.1				
3.4.43.6	Publications for Nuclear Warhead Adaption Kit	NAVAIR	Accept.	5 Nonrepro.	Prelim.	Not later than 60 days after Preflight and Serviceability Inspection.
		NWEF	Info.	2 "		
		DASA	Info.	7 "		
		NAVMISCEN	Info.	2 "		
		TMA	Info.	1 "		
		LGR	Info.	1 "		
		NAVAIR	Accept.	10 Nonrepro.	Final	Copies shall be in white print form and shall be delivered not later than 15 days prior to start Demonstration.
		NWEF	Info.	5 "		
		DASA	Info.	5 "		
		NAVMISCEN	Info.	5 "		
		TMA	Info.	1 "		
		LGR	Info.	1 "		
3.4.43.7	Safety Manual	NAVAIR	Accept.	10 Nonrepro.	Prelim.	Not later than 60 days after Preflight and Serviceability Inspection.
		NAVMISCEN	Info.	4 "		
		TMA	Info.	3 "		
		NAEL,SI	Info.	2 "		
		LGR	Info.	2 "		
		NWL	Info.	2 "		
		NAVAIR	Accept.	20 Nonrepro.	Final	Copies shall be in white print form and shall be delivered not later than 15 days prior to start of demonstration.
		NAVMISCEN	Info.	5 "		
		TMA	Info.	3 "		
		NAEL,SI	Info.	1 "		
		LGR	Info.	1 "		
		NWLD	Info.	2 "		
3.4.44.1	Contractor Prepared Specifications	NAVAIR	Accept.	4 Nonrepro.	Final	Not later than 30 days prior to Initial Design Review.
		NAVMISCEN	Info.	3 "		
		TMA	Info.	3 "		
		NAEL,SI	Info.	1 "		
		ASO	Info.	2 "		

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.44.2(A)	Revision pages to Contractor-prepared Specifications	NAVAIR	Info.	4 Nonrepro.	Recurring	Beginning 120 days subsequent to Initial Design Review and at 120-day intervals thereafter.
		NAVMISCEN	Info.	3 "		
		TMA	Info.	3 "		
		NAEL,SI	Info.	1 "		
		ASO	Info.	2 "		
3.4.44.2(B)	Revision pages to contract specification	NAVAIR	Info.	4 Nonrepro.	Recurring	Beginning 120 days after contract award and at 120-day intervals thereafter.
		LGR	Info.	5 "		
		NAVAIRSYS-COMREPCEN	Info.	3 "		
		NAVAIRSYS-COMREPLANT or PAC as applicable	Info.	3 "		
		NAVMISCEN	Info.	4 "		
		TMA	Info.	1 "		
		NAEL,SI	Info.	1 "		
		ASO	Info.	2 "		
		COMNAVAIR-LANT	Info.	1 "		
		COMNAVAIR-PAC	Info.	1 "		
3.4.45	Logbook	NAVAIR	Accept.	1 Nonrepro.	Prelim.	At least 45 days prior to shipment of first missile.
		NAVMISCEN	Info.	4 "		
		TMA	Info.	1 "		
		NAEL,SI	Info.	1 "		
			Info.	1 "	Final	Ship with each missile.
3.4.46	Demonstration Plan	NAVAIR	Accept.	10 Nonrepro.	Non-recurring	At least 90 days prior to first demonstration flight.
		NAVMISCEN	Info.	4 "		
		TMA	Info.	1 "		
3.4.47	Demonstration Report	NAVAIR	Accept.	6 Nonrepro.	Non-recurring	Not later than 60 days after completion of tests and reduction of data.
		NAVMISCEN	Info.	4 "		
		TMA	Info.	3 "		

TABLE I (Cont)

Paragraph	Title	To Attn:	Action	Number and Kind of Copies	Type of Report	Submittal Date
3.4.48	Alteration Report Demonstration Missiles	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	3 Nonrepro. 3 " 1 " 1 "	Recurring	Not later than 10 days prior to missile flight which incorporates the alteration.
3.4.49	Microfilm and Tabulating Cards	NATSF	Accept.	1 Set Repro.	Recurring	As specified on NAVAIR Form 4200/25
3.4.51	Interchangeability Data	NAVAIR NAVMISCEN TMA NAEL,SI	Accept. Info. Info. Info.	4 Nonrepro. 4 " 3 " 2 "	Recurring	Not later than 30 days prior to Prototype System Review. Revisions as program progresses.
3.4.52	Radar Reflectivity Report	NAVAIR NAVMISCEN TMA	Accept. Info. Info.	3 Nonrepro. 2 " 2 "	Nonrecurring	As specified by NAVAIR, but no later than 30 days prior to first flight.
3.4.53	Summary of Design Data	NAVAIR LGR NAVMISCEN TMA NAEL,SI	Info. Accept. Info. Info. Info.	4 Nonrepro. 1 " 1 " 3 " 1 "	Recurring	Every 90 days until completion of contract.