

MIL-J-8667A(AS)
5 January 1970
Superseding
MIL-J-8667(Aer)
of 2 November 1953

MILITARY SPECIFICATION

JET ASSISTED TAKE-OFF SYSTEMS-DESIGN AND INSTALLATION OF; IN NAVAL AIRCRAFT

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

1. SCOPE

1.1 This specification establishes the requirements for the design, installation, test and data requirements for Jet Assisted Take-off Systems for Naval aircraft.

1.2 Classification. JATO unit systems covered by this specification shall be of the following types:

Type I - 1000 pound thrust unit installation

Type II - 4500 pound thrust unit installation

2. APPLICABLE DOCUMENTS

2.1 Government documents normally furnished. The following documents of the issue in effect on date of invitation for bids, or request for proposal, form a part of the specification to the extent specified herein.

SPECIFICATIONS

Military

MIL-W-5988

Wiring, Aircraft, Installation of

MIL-E-7080

Electrical Equipment, Installation and
Selection of, General Specification for

FSC 2845

Specifications (Cont)

Military

MIL-A-8591	Airborne Stores and Associated Suspension Equipment, General Design Criteria for
MIL-D-8706	Contract Design Data Requirements for Aircraft
MIL-D-8708	Demonstration of Piloted Airplanes
MIL-F-8785	Flying Qualities of Piloted Airplanes
MIL-A-8860 Thru MIL-A-8870	Airplane Strength and Rigidity
MIL-R-18136	Research and Engineering Report, Format and General Requirements
MIL-H-21660	Hooks, Thrust, JATO 1000 Pounds Nominal Thrust
MIL-H-21722	Hooks, Thrust and Stabilizing, JATO 4500 Pounds Nominal Thrust
MIL-P-24014	Preclusion of hazards from Electro-magnetic radiation to ordnance

Other Departmental Documents

SD-24	General Specification for the Design and Construction of Naval Aircraft
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Standards

MIL-STD-143	Specifications and Standards, Order of Precedence for the Selection of
MIL-STD-704	Electric Power, Aircraft, Characteristics and Utilization of
MIL-STD-889	Dissimilar Metals

(When requesting applicable documents, refer to both title and number. Copies of unclassified documents may be obtained from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120. Requests for copies of classified documents should be

addressed to the Naval Publications and Forms Center, via the cognizant Government representative.)

Drawings

NAF 603894	Hook, Thrust, JATO, Retractable, 4500 Pound Thrust
NAF 603922	Hook, Stabilizing, JATO Retractable, 4500 Pound Thrust
NAF 401778	Jig - JATO - 5 Second Unit - 4500 Pound Thrust
NAF 40095	Hook - Front - JATO 1000 Pound Thrust
NAF 503957	JATO Unit, 15° Canted Nozzle - 4500 Pound Thrust - Envelope Dimensions
NAF 605197	JATO Unit 1000 lb Thrust Envelope Dimensions
NAF 603972	Configuration - Retractable Hooks - JATO - 5 Second Unit - 45 Pound Thrust
NAF 311588	Terminal Post - JATO (Ignition)

Requests for drawings should be addressed to the Naval Air Technical Services Facility, 700 Robbins Ave. Philadelphia, Pa. 19111

PUBLICATIONS

Naval Ordnance Systems Command

OD30393	Design principles and practices for controlling hazards of electromagnetic radiation to ordnance.
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Requests for Naval Ordnance Systems Command publications should be addressed to the Central Documents Office, U.S. Naval Ordnance Plant, Louisville, Ky.

Operation and Service Instructions

OP 2320	15 KS 1000 JATO (Mk 6) Description, Operation, Maintenance and Handling
OP 2321	5 KS 4500 JATO (Mk 7) Description, Operation, Maintenance and Handling
OP 2841	5 NS 4500 JATO (Mk 25) Description, Operation, Storage and Maintenance

Requests for operation and service instructions should be submitted, on DD Form 1149, to the Naval Publications and Forms Center, via the Cognizant Government Representative.

Film

MN 9340

Jet Assisted Take-Off

This film is available, upon request, from the Photographic Center, Navy Department, Washington, D. C. 20360.

2.2 Precedence. When the requirements of the contract, this specification, or applicable subsidiary specifications or drawings are in conflict, the following precedence shall apply:

Contract - The contract shall have precedence over this specification.

Drawings - The applicable drawings shall have precedence over this specification.

This Specification - This specification shall have precedence over all subsidiary specifications. Any deviation from this specification, subsidiary specifications, or drawings shall be specifically approved, in writing, by the procuring activity.

3. REQUIREMENTS

3.1 Components. The JATO provisions shall include the installation of suspension hooks, reinforcement structure, jettisoning controls, electrical circuits, firing controls, and when specified by the procuring activity, stowage and loading provisions for JATO units.

3.2 Materials. Materials shall conform to applicable specifications and shall be as specified herein. Materials which are not covered by applicable specifications, or which are not specifically described herein, shall be of the best quality, of the lightest practicable weight and suitable for the purpose intended.

3.2.1 Metals. Metals shall be of the corrosion-resistant type or treated in a manner to resist corrosion in salt spray or atmospheric conditions that occur during service life.

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

3.3 Selection of specifications and standards. Specifications and standards for necessary commodities and services not specified herein shall be selected in accordance with MIL-STD-143.

3.4 Standard Parts. MS and AN standard parts shall be used where they suit the purpose. They shall be identified on the manufacturer's drawings by their MS or AN part numbers. In the event there are no MS or AN standard

parts available, commercial parts may be used provided they conform to all requirements of this specification.

3.5 Design. The design of the JATO Systems shall be such as to assure satisfactory installation, firing and jettisoning of the JATO units.

3.5.1 Aerodynamic considerations.

3.5.1.1 JATO weight and thrust. The weight of the JATO installation acting separately and in combination with the thrust of the JATO units shall not result in an inability of the aircraft to comply with the requirements of MIL-D-8708 and MIL-F-8785.

3.5.1.2 Center of gravity effective movement. The thrust moment about the mass center of gravity shall not result in movement of the center of gravity beyond the allowable limits. The effective center of gravity movement shall be determined by the following equation.

$$x = \frac{Mt}{W_A - V_t} \quad \text{where}$$

x = effective center of gravity movement

Mt = thrust moment about the mass center of gravity based on the thrust of the JATO unit when at a temperature of 140° F

W_A = aircraft gross weight

V_t = vertical component of the thrust of the JATO units when at a temperature of 140° F.

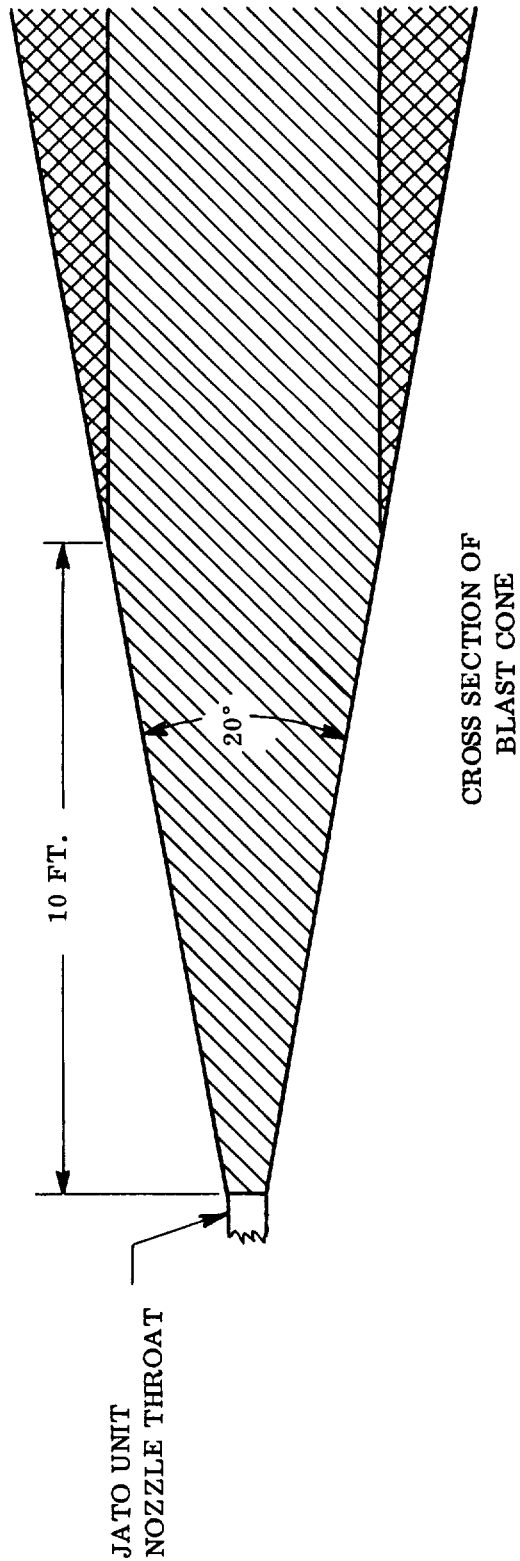
3.5.1.3 Asymmetric thrust. The JATO installation shall be designed to minimize the effects of asymmetric thrust due to JATO unit misfire (no ignition or delayed ignition) or blowoff (safety diaphragm operation).

3.5.1.4 Suspension system drag. The JATO installation shall be as aerodynamically clean as is feasible. Type II JATO installations shall be designed to take full advantage of the retractable feature of the JATO hooks.

3.5.2 Blast cone clearance. The JATO units shall be installed so as to provide cone clearance as shown in figure 1.

3.5.3 Structural design. Those portions of the JATO System and aircraft structure which are subjected to loads resulting from the installation and operation of the JATO units shall be designed to withstand the loads as specified herein. The above structure shall also be adequate for flight, take-off,

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NO IMPINGEMENT OF JATO UNIT BLAST ON AIRCRAFT IN THIS SPACE OR EXTENSION THEREOF.



IMPINGEMENT OF JATO UNIT BLAST ON AIRCRAFT IN THIS SPACE MUST BE APPROVED BY THE NAVAL AIR SYSTEMS COMMAND



JATO UNIT BLAST CONE CLEARANCE

Figure 1

landing, and handling, consistent with the strength requirements of the airplane, when carrying the maximum number of loaded JATO units, as specified in the airplane detail specification and Specifications MIL-A-8860 through MIL-A-8870 and SD-24, as applicable.

3.5.3.1 Definition of terms.

3.5.3.1.1 Normal rated thrust. Normal rated thrust of a JATO unit is the thrust of the unit when at a temperature of 60 degrees Fahrenheit.

3.5.3.1.2 Design limit thrust load. The design limit thrust load shall equal two times the normal rated thrust of the JATO unit, acting along the center line of the JATO unit nozzle throat.

3.5.3.1.3 JATO unit weight, W_j . The weight in pounds of a fully loaded JATO unit.

3.5.3.2 Magnitude and direction of design limit loads.

3.5.3.2.1 Landplane installations. The design limit thrust load shall be considered to be acting separately and in any combination with the following loads: a downward load equal to $3W_j$, an upward load equal to $1.5W_j$, and a lateral load to the right or to the left equal to $1.0W_j$. For JATO installations on aircraft designed for catapulting, in addition to the above loads, a load of $5.5W_j$ shall be considered to act aft on the unit, with or without thrust load.

3.5.3.3 Location of loads. The thrust load component which is parallel to a line through the centers of the JATO unit mounting lugs shall be applied to the thrust hook. The remaining components of the design limit loads shall be applied to the thrust and stabilizing hooks in the proportions determined by the geometry of the JATO installation.

3.5.3.4 Factors of safety. The minimum yield and ultimate factors of safety shall be 1.15 and 1.5, respectively, as specified in Specifications MIL-A-8860 through MIL-A-8870.

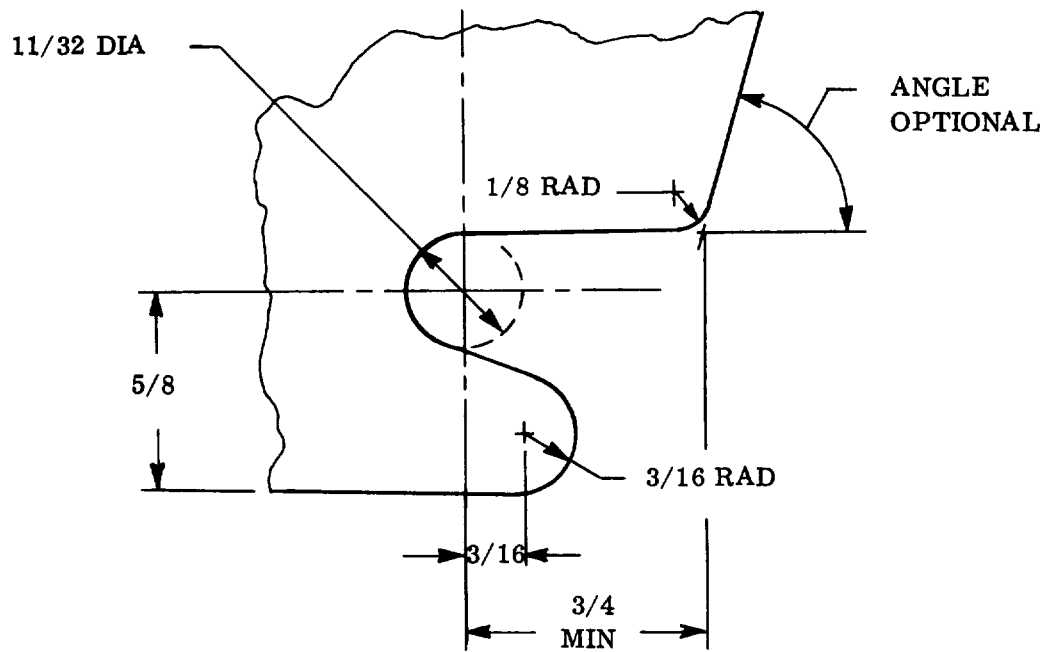
3.5.4 JATO hooks.

3.5.4.1 Type I thrust hooks. Type I thrust hooks shall conform to the requirements of MIL-H-21660.

3.5.4.2 Type II thrust hooks. Type II thrust hooks shall conform to the requirements of MIL-H-21722.

3.5.4.3 Type I stabilizing hooks. The stabilizing hooks for Type I JATO installations shall be made of 3/16 or 1/4-inch thick steel, 125,000 psi minimum ultimate tensile strength. The detail design of the stabilizing hooks shall be tailored to the specific JATO installation except that the hook throat dimensions shall conform to Figure 2.

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TOLERANCES $\pm 1/64$ UNLESS OTHERWISE SPECIFIED

STABILIZING HOOK THROAT DIMENSIONS FOR TYPE I JATO UNIT INSTALLATION

Figure 2

3.5.4.4 Type II stabilizing hooks. The stabilizing hooks shall be manufactured in accordance with the latest revision of drawing NAF 603922.

3.5.4.5 Type I installation dimensions. The thrust and stabilizing hooks for Type I JATO installations shall be installed in accordance with dimensions shown on Figure 3.

3.5.4.6 Type II installation dimensions. The thrust and stabilizing hooks for Type II JATO installations shall be installed in accordance with dimensions shown on Figure 4.

3.5.4.7 Locking force. A suitable means shall be used to provide a force which will produce a holding torque of $20 + 5, -0$ inch pounds on the jettisoning lever of the thrust hook for Type I JATO units when the lever is in the locked position as shown in Figure 5. The thrust hook for Type II JATO units is designed to lock when the hook is extended and a JATO unit is extended and a JATO unit is installed. No additional locking or holding force is required.

3.5.5 Jettisoning system. The JATO units shall be capable of being jettisoned manually or by a hydraulic, pneumatic, or electrical system which meets the requirements of the following paragraphs.

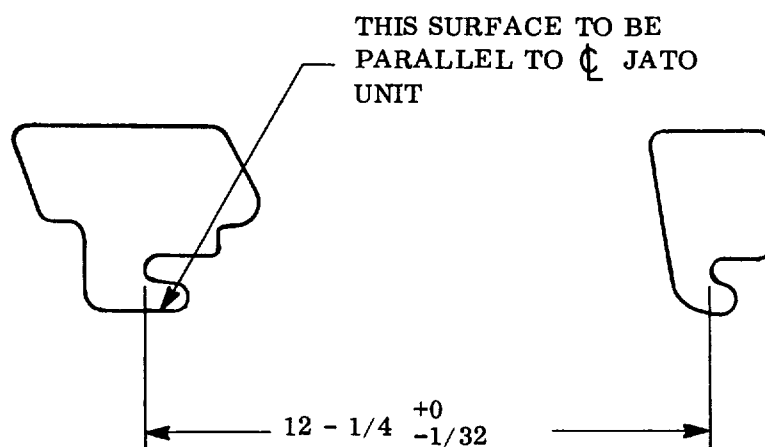
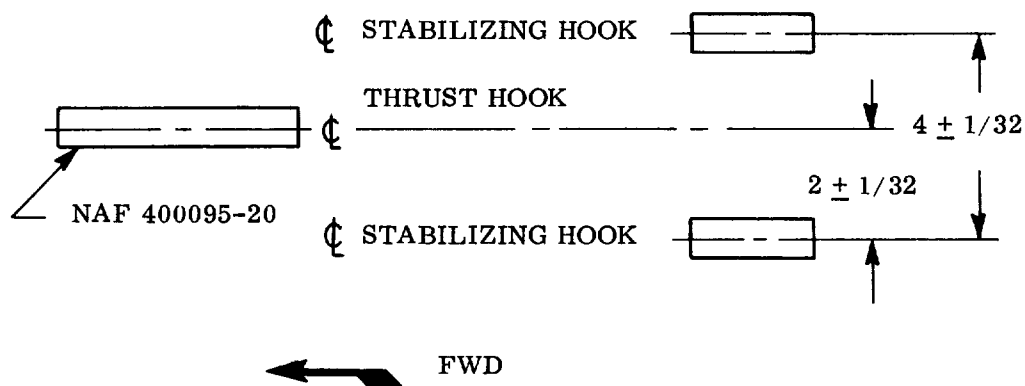
3.5.5.1 Sequence. The JATO units of installations carrying more than one unit may be jettisoned individually, in pairs, in groups, or in salvo. When units are mounted above one another or when the aircraft contour is such that the jettisoned unit or units will strike the aircraft or other JATO units, suitable deflectors, guards, or reinforcements shall be installed. The lower units shall be jettisoned first. If there is more than one unit mounted on a side, the jettisoning sequence shall be from the lower units to the highest unit.

3.5.5.2 Jettisoning controls. The number of controls shall be a minimum consistent with the jettisoning sequence required. The controls shall be arranged and located in such a manner as to provide for simplicity of installation and convenience of operation.

3.5.5.3 Jettisoning stroke.

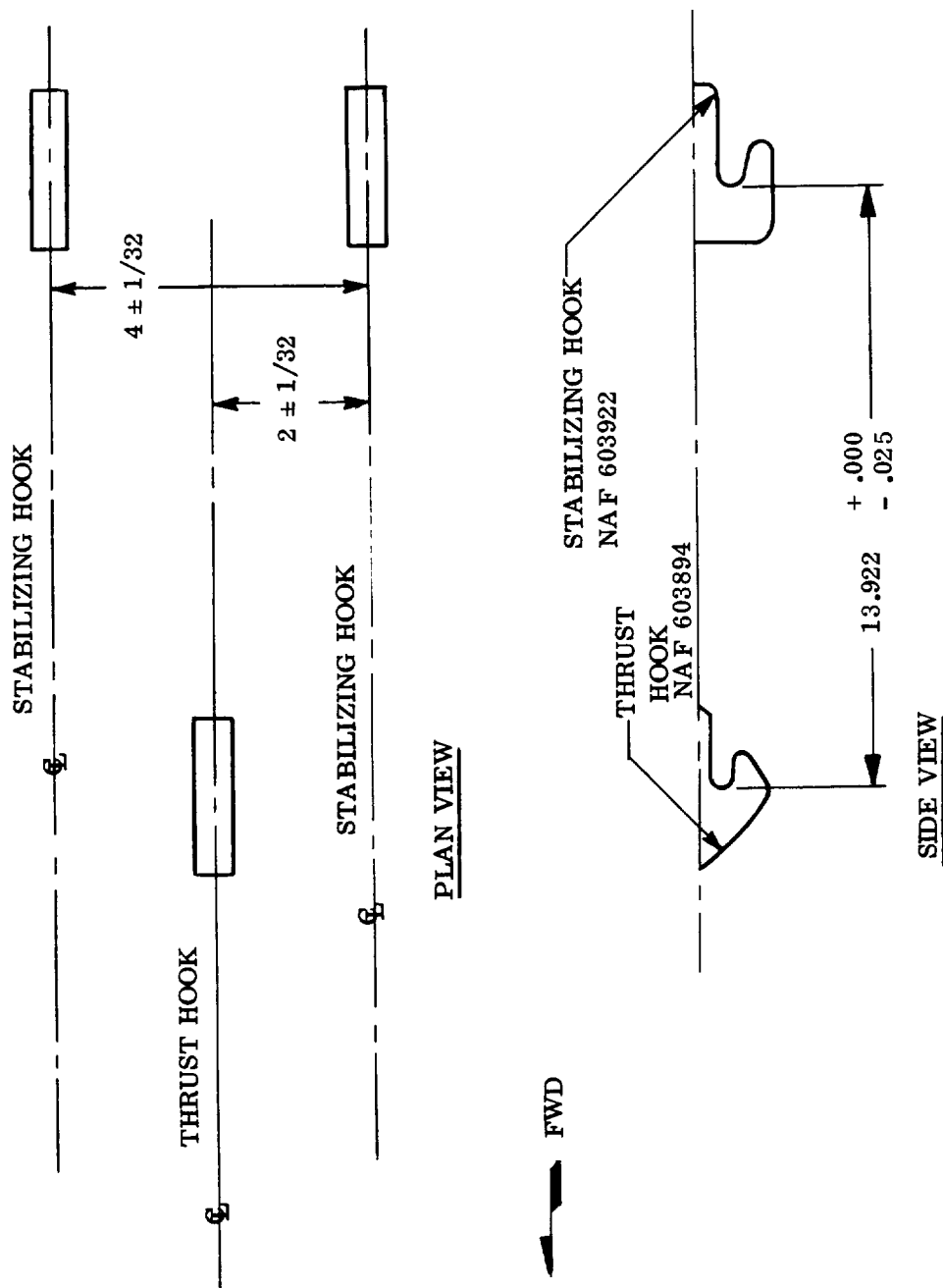
3.5.5.3.1 Type I JATO hooks. The jettisoning system shall be designed to permit full rotation of the release and jettisoning lever (approximately 50 degrees), to permit the lever to return to the locked position when a JATO unit is installed, and to permit the thrust hook to be unlatched from the outside of the airplane.

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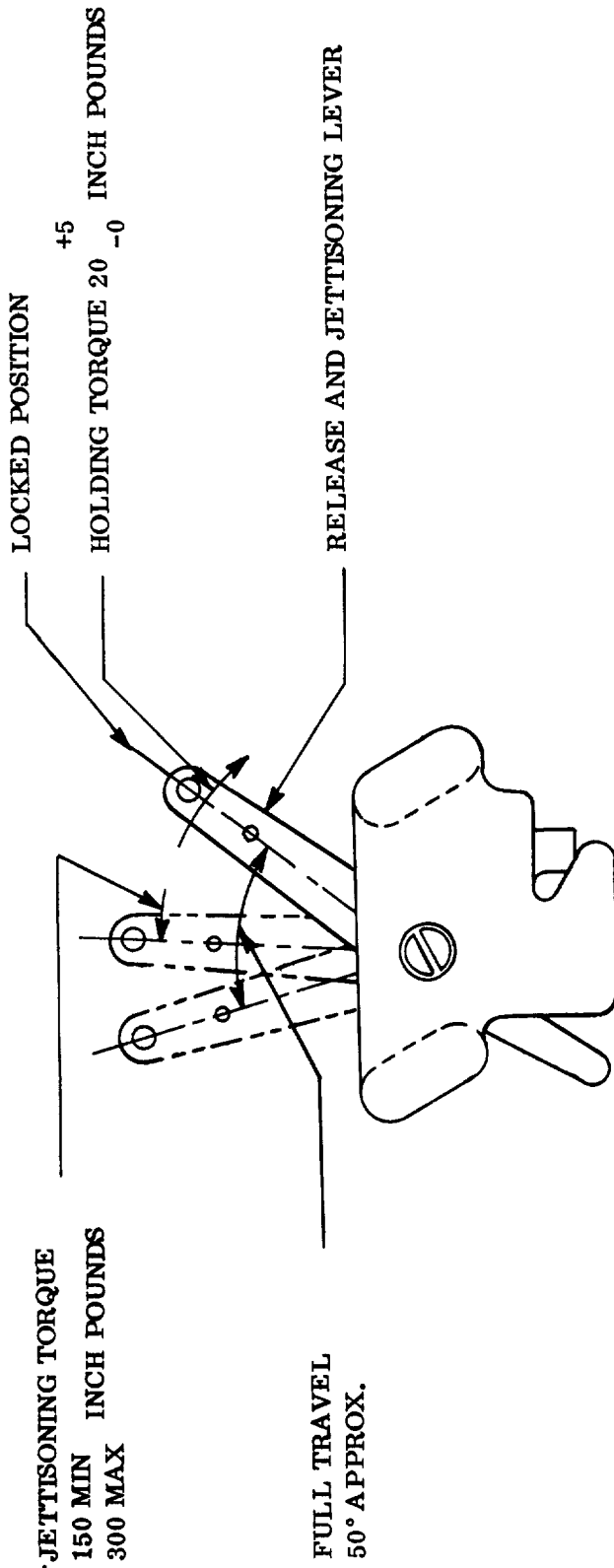
HOOK INSTALLATION DIMENSIONS FOR TYPE I JATO UNIT INSTALLATIONS

Figure 3



HOOK INSTALLATION DIMENSIONS FOR TYPE II JATO UNIT INSTALLATIONS

Figure 4



LOCKING AND JETTISONING LOADS FOR TYPE I JATO UNIT THRUST HOOK (DWG 400095-20)

Figure 5

3.5.5.3.2 Type II JATO hooks. The jettisoning system shall be designed to permit full movement of the release and jettisoning rod (approximately 1-15/16 inches), to permit the return of the rod when the thrust hook is extended and locked, and to permit the hook to be unlatched and retracted from the outside of the airplane.

3.5.5.4 Jettisoning force.

3.5.5.4.1 Type I JATO hooks. The jettisoning system shall be designed to provide a jettisoning force which will produce a torque of 150 inch-pounds minimum and 300 inch-pounds maximum on the jettisoning lever as shown in Figure 5.

3.5.5.4.2 Type II JATO hooks. The jettisoning system shall be designed to provide a jettisoning force along the axis of the release and jettisoning rod of at least 700 pounds but not to exceed 1800 pounds. The system shall be so designed that the force will not act on the rod when the rod is in the fully retracted or fully extended and locked position.

3.5.6 Electrical requirements. The electrical system for JATO unit installations shall be designed to conform with Figures 6 and 7 and as follows:

(a) Installation shall be in accordance with MIL-W-5088, MIL-E-7080, and Naval Ordnance Systems Command publication O.D. 30393.

(b) Safety switches: When JATO units are installed on doors, safety switches shall be incorporated to prevent firing when the doors are unlocked.

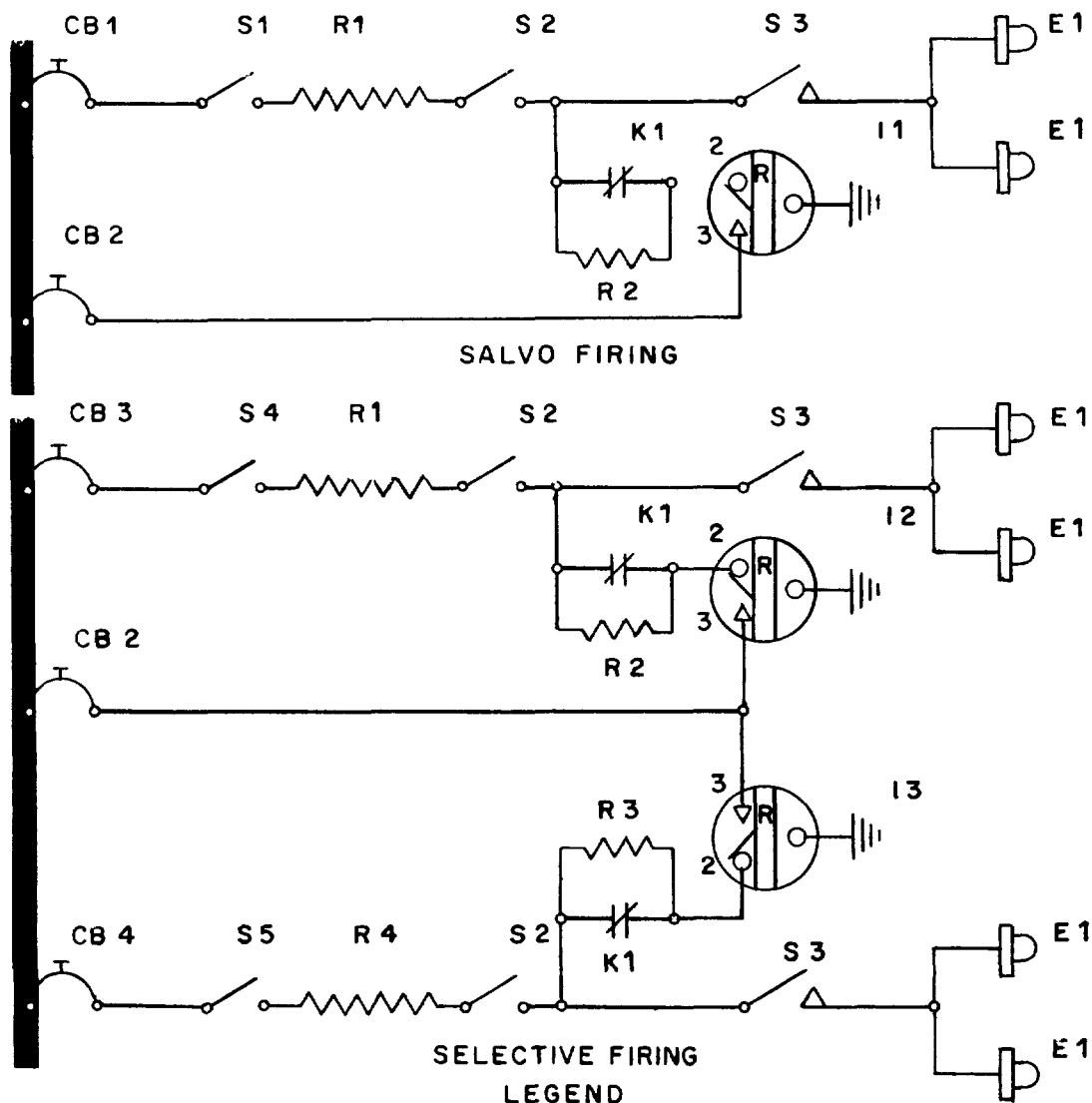
(c) Network components: The rating of network components, such as circuit breakers, switches and cables, shall be based on their short time characteristics as necessary to supply the igniter load as shown on the applicable curves. Resistors shall be incorporated when necessary to limit the igniter current within the ratings of the network components.

(d) Firing current: The circuit shall be designed so that the firing current of the igniter will be above the minimum indicated on the curves.

(e) Selectivity: Igniters may create short circuits after firing is completed. Therefore, where selective firing is used, each group shall be electrically isolated and connected to separate circuit breakers.

(f) Firing of the igniters shall not cause the system voltage to exceed the transient limits specified in MIL-STD-704.

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CB 1 "JATO" CIRCUIT BREAKER
 CB 2 "WARNING LIGHTS" CIRCUIT BREAKER
 CB 3 "UPPER JATO" CIRCUIT BREAKER
 CB 4 "LOWER JATO" CIRCUIT BREAKER
 E 1 TERMINAL NAF311588-1
 I 1 "JATO ARMED" LIGHT
 I 2 "UPPER JATO ARMED" LIGHT
 I 3 "LOWER JATO ARMED" LIGHT
 K 1 WARNING LIGHT DIMMING RELAY
 R 1 CURRENT LIMITING RESISTOR
 R 2 DIMMING RESISTOR

R 3 DIMMING RESISTOR
 R 4 CURRENT LIMITING RESISTOR
 S 1 "JATO ARMING" SWITCH
 S 2 JATO SAFETY SWITCH(S) (SEE PARA 3.3.6(b))
 S 3 PILOT'S "JATO" FIRING SWITCH
 S 4 "UPPER JATO ARMED" SWITCH
 S 5 "LOWER JATO ARMING" SWITCH
 FOR ITEMS IN LEGEND SEE ELECTRICAL REQUIREMENTS IN PARA. 3.3.6

ELECTRICAL SYSTEM

FIGURE 6

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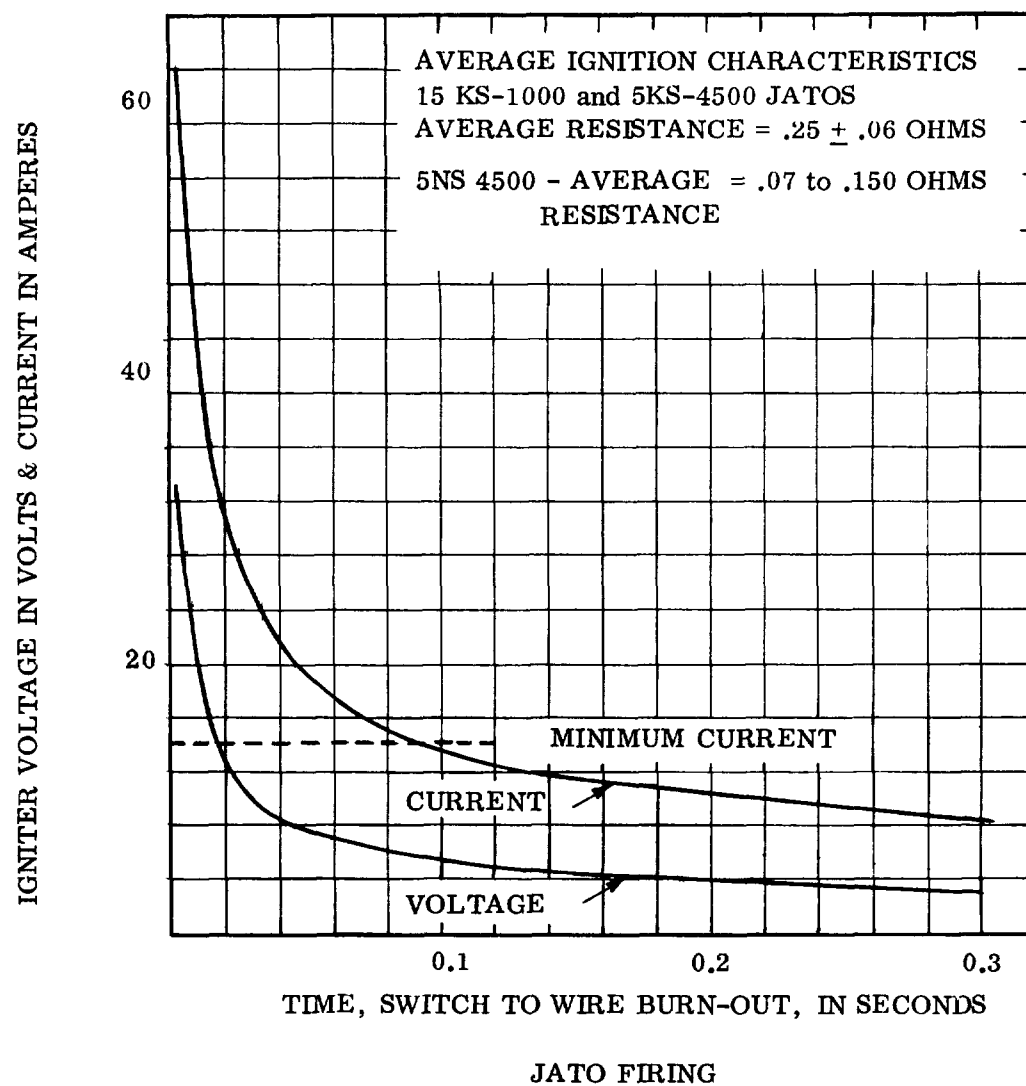


Figure 7

(g) **Circuit isolation:** To prevent inadvertent discharge of JATO units, JATO circuits shall not be wired through a connector having other circuits. At terminal blocks, there shall be at least one vacant terminal between JATO terminals and terminals for other circuits.

(h) **Wiring and circuits:** Wiring and circuits shall be designed to minimize radio frequency, electrostatic stray voltage and shorting hazards.

(i) **Arming switch:** Where suitable, the JATO arming switch and circuit breaker may be combined in a switch breaker.

3.5.6.1 **Firing switch.** The firing switch shall be mounted on the pilot's control wheel in all aircraft equipped with a control column and wheel and on or adjacent to the pilot's throttle lever in all aircraft equipped with control stick.

3.5.6.2 **Arming switch, selector switches, warning lights.** The arming switch, selector switches, and warning lights shall be mounted so that they are visible and readily accessible to the pilot. The proposed arrangement and location of all components shall be submitted to the Naval Air Systems Command for approval.

3.5.6.3 **Positive terminal post.** The JATO positive terminal posts, (NAF 311588) shall be located so as to be readily accessible for mounting the JATO units in place. The terminal posts shall be installed with the mounting flange against the inner surface of the aircraft skin and the ball-shaped post protruding through the skin into the airstream.

3.5.7 **Stowage and loading provisions.** JATO unit stowage and loading provisions shall be provided in aircraft when so specified by the Naval Air Systems Command. The provisions shall provide for easy removal of the JATO units and shall provide sufficient strength to rigidly support and positively lock the units under any flight conditions and maneuvers permissible for the aircraft.

3.6 **Required data and drawings.** Drawings and engineering data showing location, arrangement, identity, structural calculations and performance take-off calculations, test and weight of component items of equipment used in the JATO unit installation, shall be submitted for release to the Naval Air Systems Command.

3.7 **Performance Data.** The performance take-off data shall be submitted for various gross weights, both with and without JATO, under all critical loadings including:

- (a) A 50 foot obstacle condition
- (b) 110° F air temperature with high humidity

(c) Altitude take-off conditions

(d) Use of special runway mats for take-off and landing.

The performance data should include the optimum technique for firing JATO's during take-off. Data should show the special loading support equipment, if any, that is required for installing or removing the rocket motors under all operating conditions.

3.8 Engineering reports. Complete engineering reports shall be prepared on flight test plans, flight test results, stress analysis, performance take-off calculations and all other items listed in paragraphs 4.1 thru 4.6.

3.9 Drawings. A complete set of detail, assembly, and general arrangement drawings of the JATO units (and installations) shall be prepared and submitted, for release, to the Naval Air Systems Command.

4. QUALITY CONFORMANCE PROVISIONS

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

4.2 Examination of installation provisions. Each installation shall be examined to determine compliance with the applicable drawings and specifications.

4.3 Structural test. The JATO unit installation in new aircraft shall be tested to design ultimate loads for all critical loading conditions (using static test aircraft). The JATO unit installation incorporated in operational aircraft shall be proof tested to design limit loads for all critical loading conditions. The structural test data shall be furnished in accordance with Specifications MIL-A-8860 through MIL-A-8870 as applicable.

4.4 Locking and jettisoning test. The satisfactory operation of the JATO locking and jettisoning system with both inert loaded and inert expended JATO units shall be demonstrated in ground static tests. Flight tests shall demonstrate locking of loaded units and technique of jettisoning expended units.

4.5 Electrical test. The JATO firing circuit shall be tested as follows: (Note - without JATO units installed.)

4.5.1 Electrical check. JATO firing circuit tester (see Figure 8) (Part No. NAF 49390-1) is designed to check the voltage of the aircraft JATO

firing circuit to determine that proper voltage is available at the positive ball terminals when the JATO master and firing switches are ON and to check the same system to insure there is no voltage when all JATO firing switches are in the OFF position. The tester consists of a voltmeter with a high and low scale, a selector switch, a test button, and the positive and negative leads. The tester is provided with a small 1.5-volt dry cell as a means of checking the condition of the voltmeter before checking the aircraft circuit. The internal wiring is designed to prevent inadvertent energizing of the meter-testing circuit while either of the main testing circuits is closed.

4.5.2 JATO firing circuit tester test.

(a) Place the toggle switch on top of the JATO firing circuit tester (Figure 8) in the neutral or test position.

(b) Press the test button on the side of the tester.

Note - If the meter indicates voltage (according to the condition of the internal dry cell), the tester is satisfactory and safe to use to check the aircraft JATO firing circuit. If the meter does not indicate voltage, replace the dry cell and recheck the circuit tester. If meter still fails to indicate voltage, the circuit tester is faulty and must not be used to check the aircraft JATO firing circuit.

4.5.3 Aircraft JATO firing circuit test (without JATO units installed).

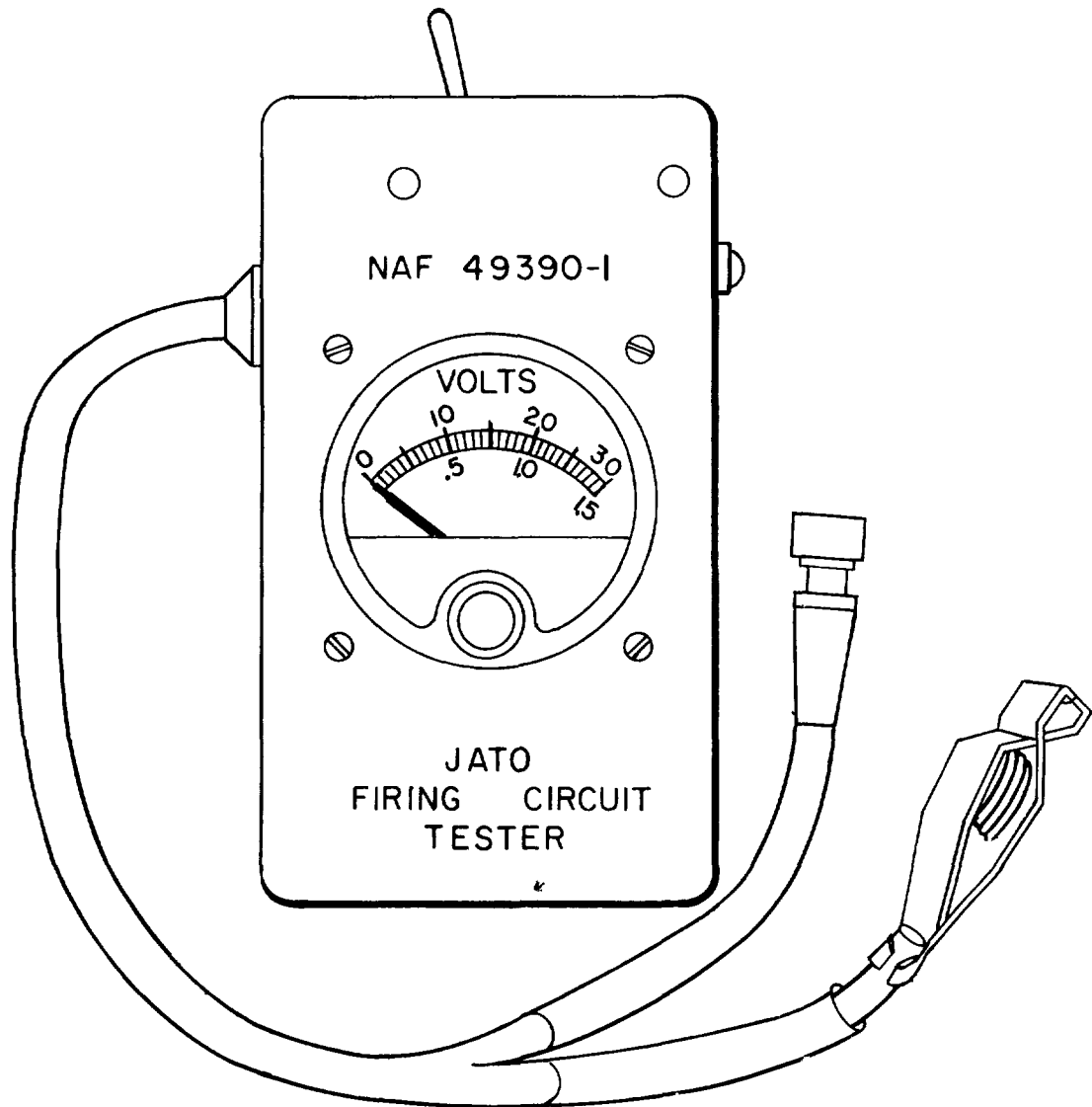
4.5.3.1 The JATO switch arrangement and notation varies for different type aircraft. Reference to the specific aircraft type Flight Handbook should be made prior to performing this test. In all cases, two men are required to perform the test, because the momentary toggle JATO firing switches must be held in the ON position until completion of the voltage check.

(a) Place all JATO arming switches in the ON position.

(b) Place all JATO firing switches in the ON position.

(c) Using the JATO firing circuit tester (30 volt scale), connect the red (+) terminal of the tester to the positive (+) ball terminal on the aircraft and ground the negative (-) (black) terminal of the tester to the JATO hooks, or other suitable aircraft ground location. The tester shall read 24 to 28 volts at each positive ball terminal.

CAUTION: If the reading on the JATO firing circuit tester is not between 24 - 28 volts at any ball terminal, determine the cause and correct before proceeding with electrical check and before installing the JATO units.



JATO FIRING CIRCUIT TESTER

Figure 8

(d) Place all JATO firing switches in the OFF position.

(e) Using the JATO firing circuit tester with the tester switch in the 1.5-volt-scale position, check each positive ball terminal. The tester shall indicate "No Voltage."

(f) Repeat step c. The tester shall indicate "No Voltage."

WARNING: Do not connect a JATO igniter lead to a positive ball terminal that registers voltage when all JATO firing switches are in the OFF position.

NOTE: Cell action set up by salt spray on unclean terminals will occasionally generate enough voltage to indicate on the meter. If voltage is indicated, clean all terminals and cable joints in the circuit and check for a short circuit in the JATO firing circuit to a live circuit. Do not proceed until the tester indicates "No Voltage."

4.6 Ground test. When specified by the procuring activity, JATO unit blast clearances and JATO exhaust temperature and pressure effects on the aircraft shall be demonstrated by firing JATO units while the aircraft is on the ground.

4.7 Flight test. The JATO unit installation shall be test flown by the contractor to demonstrate:

(a) That the stability and control of the aircraft have not been compromised by the JATO installation to the extent that would make the installation unacceptable to the procuring activity;

(b) The optimum techniques for firing JATO's for optimum take-off performance;

(c) The effect of JATO unit misfire (non-ignition or delayed ignition);

(d) That the rocket motor jet blast causes no structural fatigue or overtemperature, or any other unacceptable adverse conditions resulting from the jet blast, to any part of the aircraft.

During the above tests, flight procedures shall be established by the contractor which will insure satisfactory control of the aircraft during JATO unit misfire.

5. PREPARATION FOR DELIVERY

5.1 This section not applicable to this specification.

6. NOTES

6.1 Intended use. This specification is intended for use in the design, installation and testing of JATO systems for naval aircraft. The following specific paragraphs of this specification apply as noted:

(a) Design and installation. Paragraphs 1 through 3.

(b) Inspection. Paragraphs 4.1 and 4.2.

(c) Testing. Paragraphs 4.3, 4.4, 4.5, 4.6 and 4.7.

(d) Data requirements. Drawings and data shall be submitted in accordance with MIL-D-8706A, and the requirements of paragraphs 3.3.6.2, 3.4 and 4.3 herein.

A letter report of highlights during the tests shall be submitted monthly to the procuring activity.

A detailed summary report, in accordance with MIL-R-18136C, shall be submitted for the structural test (para 4.3).

Preparing Activity

Navy - AS

Project No. 2845-NO18

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No 119-R004
<p style="text-align: center; margin: 0;"><u>INSTRUCTIONS</u></p> <p style="margin: 0;">This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity (as indicated on reverse hereof).</p>		
<p>SPECIFICATION JET ASSISTED TAKE-OFF SYSTEMS-DESIGN AND INSTALLATION OF, MIL-J-8667A(AS) IN NAVAL AIRCRAFT</p>		
ORGANIZATION (Of submitter)	CITY AND STATE	
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A <input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE? <input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE

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Naval Air Engineering Center
Philadelphia, Pennsylvania 19112

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