

DATA ITEM DESCRIPTION

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1. TITLE Allied Ordnance Publication (AOP-12) Aircraft Stores Interface Manual (ASIM)		2. IDENTIFICATION NUMBER DI-MISC-81511	
3. DESCRIPTION / PURPOSE 3.1 This Data Item Description (DID) describes the format and content necessary to prepare an ASIM and covers the preparation of drawings to be included in the AOP-12 ASIM.			
4. APPROVAL DATE 960713	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) N/NAWCWDPTMUGU	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
7. APPLICATION / INTERRELATIONSHIP 7.1 This DID is required for submission of contractor design activity drawings representing aircraft, stores and/or associated pylons, racks, launchers, hard points and other devices incorporated for the suspension and release of stores. 7.2 This DID contains the format and content preparation instructions for the data product generated by the work task delineated in paragraph 1 of Standardization Agreement (STANAG) 3898 AA, including drawings to be included in the ASIM.. (Continued on page 2)			

8. APPROVAL LIMITATION	9a. APPLICABLE FORMS	9b. AMSC NUMBER N7185
10. PREPARATION INSTRUCTIONS 10.1 <u>Reference Documents</u> . The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract. 10.2 <u>Format</u> . The format shall be in accordance with STANAG AAP-3, Procedures for Development, Preparation, Production, and the Updating of NATO Standardization Agreements (STANAGs) and Allied Publications (APs), Chapters 4 and 5. 10.2.1 <u>Sections</u> . Arabic numbers shall be used to number sections throughout the publication. Each section shall be separated from the next section in a manner that is easily accessible (e.g. tab dividers). 10.3 <u>Content</u> . This AOP shall contain interface data for NATO aircraft, stores, and suspension equipment. Interface control drawings shall disclose engineering form, fit, function, and performance requirements for the acquisition of interchangeable purchased items of existing designs, or of items specially developed by vendors to the control drawing requirements. Control drawings shall permit the acquisition of vendor developed items from specialized segments of industry without disclosing details of design or divulging proprietary vendor data. Vendor Item drawings shall depict existing commercial items or vendor developed items advertised or catalogued as available on an unrestricted basis as an "off-the-shelf" item or an item, while not commercially available, is procurable from a specialized segment of industry. Such drawings shall illustrate the ground fit and compatibility tests performed in accordance with STANAG 3899 AA. The following volumes and their respective sections may be included in the AOP: (Continued on page 2)		

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

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Block 7, Application/Interrelationship (Continued)

7.3 STANAG 3898 AA and 3899 shall be used in conjunction with or as a companion reference. Copies of STANAG 3898 AA, STANAG 3899 AA, and AAP-3 may be obtained from Commander, Naval Air Warfare Center Weapons Division, 521 9th St. Point Mugu, CA 93042-5001, Code 311200E.

7.4 This DID supersedes DI-E-7087.

Block 10, Preparation Instructions (Continued)**a. Volume 1 - Aircraft Manual**

- Section 1 - Suspension Devices
- Section 2 - Aircraft
- Section 3 - Composite Aircraft Drawings
- Section 4 - Pylons

b. Volume 2 - Stores Characteristics

- Section 1 - Bombs, Conventional
- Section 2 - Bombs, Nuclear
- Section 3 - Bombs, Practice
- Section 4 - Dispensers, Clusters, Flares
- Section 5 - Rockets
- Section 6 - Missiles Air-to-Surface
- Section 7 - Missiles Air-to-Air
- Section 8 - Mines
- Section 9 - Torpedoes
- Section 10 - Guns
- Section 11 - Fuel Tanks
- Section 12 - Pods
- Section 13 - Targets
- Section 14 - Suspension Lugs

c. Volume 3 - Suspension Equipment

- Section 1 - Bomb Racks
- Section 2 - Bomb Racks, Multiple
- Section 3 - Bomb Racks, Practice
- Section 4 - Bomb Shackles
- Section 5 - Launchers, Ejection
- Section 6 - Launchers, Rail
- Section 7 - Development
- Section 8 - Proposals
- Section 9 - Historical

10.4 Drawing Specifications. Drawings shall be black line masters. Dimensions shall be included wherever practicable. The scale shall be indicated on each drawing.

10.4.1 Volume 1 - Aircraft Manual.

- a. Section 1 - There shall be three outline views (end, side, and plan) of suspension devices showing the following detail with dimensions as applicable:
 - (1) Sway brace arms and pads with sweep lines (dashed) showing the extent of travel.
 - (2) Suspension points (hooks, posts, rails, etc.)
 - (3) Arming devices/units
 - (4) Store sensing devices
 - (5) Ejector feet

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Block 10, Preparation Instructions (Continued)

- b. **Section 2 - There shall be three outline views (front, side, and plan) of the aircraft and helicopters showing the following details as applicable:**
- (1) The flaps, slats, control surfaces, speed brakes, landing gear doors, weapons bay doors, service doors and access doors in the maximum extended position with sweep lines showing their arcs of travel.
 - (2) A sweep line showing the arc of wing sweep at nominal flight positions.
 - (3) A sweep line showing the rotor tip arc of travel.
 - (4) The landing gear at maximum take-off weight.
 - (5) A sweep line showing the arc of travel of helicopter fixed skids from the hanging position to the maximum deformed position at maximum weight.
 - (6) The ground line at maximum take-off weight.
 - (7) The "worst case" for each store station with any combination of one or more tires flat and oleos compressed/skids deformed in the static, take-off, and landing attitudes. For aircraft and helicopters designed to operate from ships, include a 5 degree roll angle about the main landing gear.
 - (8) A dashed 3 inch clearance line for the "worst case" conditions detailed in paragraph 10.4.1b(7).
 - (9) A dashed 6 inch clearance line for the "worst case" conditions detailed in paragraph 10.4.1b(7) for aircraft and helicopters designed to operate from rough terrain or ships.
 - (10) Points where store suspension equipment and launchers attach to pylons or other aircraft structures shall be identified by a cross within a circle.
 - (11) Dimensions shall be shown for:
 - (a) The distance from store attach points to static ground lines.
 - (b) The distance from store attach points to the arc of travel of flaps, slats, control surfaces, speed brakes, weapons bay doors, landing gear doors and landing gear.
 - (c) The angle of movement of flaps, slats, control surfaces, speed brakes, weapons bay doors and landing gear doors.
- c. **Section 3 - There shall be two outline views (front and side) representing composite aircraft store clearance envelopes, showing the following details as applicable:**
- (1) Points where store suspension equipment attach to aircraft structures shall be identified by a cross within a circle.
 - (2) Multiple Ejector Rack (MER) and Triple Ejector Rack (TER) suspension points shall be identified by 3/16 inch cross.
 - (3) Envelope clearance lines shall represent "worst case" static ground and deck lines, as well as for runway operations (landing/takeoff).
 - (4) Envelope clearance lines shall be identified by wing station locations for each represented aircraft.
 - (5) Wing mold lines at the wing station, where applicable.
 - (6) Envelope lines of the extended wing flap locations for all represented aircraft.
 - (7) Fuselage center-line envelope clearance lines, as applicable.
 - (8) Center line wheel travel, main wheel travel, and deflection, where applicable.
 - (9) Wheel well and accessory door representations, where applicable.
 - (10) Clearance or interference lines shall be shown in reference to rack hook points.
 - (11) References to dimensions and other applicable data shall be briefly stated in notes.
 - (12) Applicable notes:
 - (a) Wing station (W.S.) equal butt lines (B.L.).
 - (b) A 1 inch clearance is required on flaps and ailerons.
 - (c) A 6 inch clearance is required from the worst ground and deck line.
 - (d) Ground lines are for one flat tire, compressed strut.
 - (e) Add 3 inch for smooth runway or 6 inch clearance for rough runway operations.

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Block 10, Preparation Instructions (Continued)

- d. Section 4 - There shall be three outline views (front, side, and bottom) of the pylon or store attachment area showing the following details as applicable:
- (1) Suspension points.
 - (2) Cartridge location, safety points, or other required devices.
 - (3) Electrical connectors (description and type).
 - (4) Bail rods and lanyard retainers.
 - (5) Access doors with sweep lines showing arcs of travel.
 - (6) Access through bottom of pylon for store connecting devices (electrical and mechanical).

10.4.2 Volume 2- Stores Characteristics

- a. There shall be four outline views (front, rear, side, and plan) of the store showing the following details as applicable:
- (1) Suspension points, control surfaces, fins, exit ports, electrical connections, safety and arming devices, fuzes, and hard-back or hard-spot locations (for sway braces and handling).
 - (2) Sweep lines showing the arc of travel of control surfaces, tail fins (applicable for retarding weapons), and access and service doors.
 - (3) Hard-back, lugs or hangers (as applicable).
 - (4) Optional components (i.e, noses, warheads, fins). Where variant exists, a detailed breakdown of the differences shall be provided.
 - (5) General data should include: weapon type, launcher type, fuze type, arming system, safety devices, cognizant activities (list address and phone number where additional data may be acquired), reference documents (with identification numbers) such as handbooks, structural and aerodynamics reports, and reference drawing numbers.

10.4.3 Volume 3- Suspension Equipment

- a. There shall be four outline views (front, bottom, side, and plan) of the suspension equipment showing the following details and dimensions as applicable:
- (1) Suspension and attachment points.
 - (2) Electrical connections (description and type).
 - (3) Ejectors with sweep lines showing the extent of travel.
 - (4) Cartridge location and access requirements.
 - (5) Safing devices, arming devices, store sensing devices, and access requirements.
 - (6) Sway braces with sweep lines showing the extent of travel.
 - (7) Wiring diagram and electrical requirements.
 - (8) Physical data should include weight, suspension type, center of gravity, and moments of inertia.
 - (9) Performance data should include ejector characteristics and parameters, performance and timeforce curves, retention force, jettison force/velocity, acceleration, pitch characteristics, and orificing.
 - (10) Cognizant activities, address and phone number (where additional data may be acquired).
 - (11) Reference documents (with identification numbers) such as handbooks, structural and aerodynamics reports, and reference drawing numbers.