

**BY ORDER OF THE COMMANDER  
OF THE 51ST FIGHTER WING**

**51ST FIGHTER WING INSTRUCTION  
21-121**



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***Maintenance***

**EGRESS SYSTEMS  
MAINTENANCE/SAFETY**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFPD 21-1, *Air and Space Maintenance*. It works in conjunction with AFI 21-101, *Aircraft and Equipment Maintenance Management* and AFMAN 91-201, *Explosive Safety Standards*. It defines responsibilities and establishes procedures to ensure safe storage, handling, inspection, and maintenance of F-16C/D, and A/OA-10 egress systems and emergency procedures for incidents involving explosives. It applies to all 51 FW organizations and personnel that maintain egress systems. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through Major Command (MAJCOM) publications/forms managers. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>

***SUMMARY OF CHANGES***

This document is substantially revised and must be completely reviewed. The revision realigns guidance and all paragraph numbers; removes references to AFI 21-112; deletes paragraph 1,

*Responsibilities* and paragraph 7, *Egress Certification*; adds Attachment 1, *Glossary of References and Supporting Information*.

### **1. Facility:**

- 1.1. The Egress Section, (Bldg 1605) will remain secured at all times.
- 1.2. All maintenance actions on or involving explosive items will require a minimum of two personnel. Maximum number of personnel allowed in the immediate work area will not exceed two supervisors, six workers and two casuals.
- 1.3. Smoking and spark producing devices will not be allowed in the explosive storage area, designated maintenance area, or the egress vehicle at any time.
- 1.4. Explosive Room Control Procedures:
  - 1.4.1. The explosive storage locker doors will remain locked at all times.
  - 1.4.2. Only personnel listed on the entry authorization letter (EAL) will be authorized unescorted entrance to the explosive storage and/or work area.
  - 1.4.3. Upon receipt of egress explosive items, the explosive locker inventory board will be updated to include aircraft tail number, nomenclature and quantity of explosive item.

### **2. Location of Operations:**

- 2.1. Seat and canopy removal/installation will only be performed in third-generation shelters, first-generation shelters, and in hangars to include phase, corrosion, weapons load training, and the hush house. Ejection seat and canopy removal/installation will only be performed in the flow through area as a last resort when hangar space is unavailable and weather conditions permit. The 51st Maintenance Squadron production supervisor will verify the unavailability of hangar space prior to performing seat and canopy removal/installation in the flow through area. In all cases the egress section shift supervisor will determine if it is safe to perform seat and canopy removal/installation IAW applicable TO.
- 2.2. While egress explosive maintenance is being performed in the aircraft cockpit, no other personnel will work around the cockpit area until egress maintenance is completed. Egress systems maintenance will not be interrupted once step-by-step procedures have begun. Personnel will only be dispatched to another task in cases of emergency. There will be no fuel or oxygen servicing and electrical power will not be applied while egress maintenance is being performed on aircraft unless specifically authorized in the egress maintenance technical orders.
- 2.3. At no time will Advance Concept Ejection Seat II (ACES II) seats be removed, installed, or raised outside when the possibility of inclement weather (rain or winds exceeding 20 knots) exists.

### **3. Vehicle Requirements:**

- 3.1. Explosives will be transported using an enclosed "bread truck" or multi-stop van equipped with two dry chemical fire extinguishers, rated "2A 10BC" at a minimum, a pintle hook, cargo tie-down straps and have proper DOT placards for the class/division of explosives being transported.

3.2. Per the exception option in AFMAN 91-201, paragraph 8.22.1 and as approved by this operating instruction, minimum egress personnel may ride in the cargo compartment of egress metro vehicles while transporting limited quantities of class/division 1.3 and 1.4 explosives.

3.3. The explosives movement route will encompass all aircraft maintenance areas as required to perform egress systems maintenance. The primary route to and from the munitions storage area is from building 1605 to Loring Rd to Idaho Rd to Nevada Rd to Perimeter Rd directly to the munitions storage area. The alternate route is building 1605 to Mig Alley Ave to Broadway Ave to Millet Rd to Perimeter Rd directly into the munitions storage area.

#### **4. Explosive Incidents:**

4.1. In the event of an unsafe condition involving an egress system, maintenance will be stopped and the egress section chief or egress supervisor will be notified. Maintenance will not resume until the unsafe condition is corrected.

4.2. If an explosive item is suspected of being defective and presents a safety hazard beyond guidance of applicable 11P series T.O., Explosive Ordinance Disposal (EOD) assistance will be requested.

4.3. In the event of an explosive mishap, egress will notify the Maintenance Operations Center (MOC), maintenance supervision, and the Accessories Flight Chief. Personnel will not disturb anything at the scene unless it is a hazard to personnel or equipment.

4.4. In the event of a fire or detonation involving explosives, personnel will:

4.4.1. Extinguish the fire, if possible (class/division 1.4 or less).

4.4.2. Notify the Fire Department (911) and MOC (784-4105).

4.4.3. Evacuate all non-essential personnel a minimum of 600 feet.

4.4.4. Record the time and location of fire involving explosives.

4.4.5. Notify Flight office (784-1305) and Maintenance Supervision (MAX super) (784-8885).

4.4.6. Notify EOD (784-8863).

4.4.7. Notify Wing Weapons Safety (784-4804).

4.5. The ranking person will ensure the area is secure to prevent further injuries or damage. Personnel involved with the explosive mishap will remain at the scene until relieved by a competent authority, unless they require medical attention.

#### **5. Egress Familiarization Training:**

5.1. All newly assigned personnel who require access to aircraft cockpits with egress systems installed will complete an egress familiarization course for each type of aircraft they are assigned prior to accessing cockpits. 51 MOS/MXOT will ensure an aircraft is scheduled for this training and coordinate with the egress section for the availability of an instructor.

5.2. Each Aircraft Maintenance Unit (AMU) will ensure an aircraft, B-1 or B-4 maintenance stand, and aircraft forms are available prior to this training.

5.3. Egress familiarization training requests by the Fire Department for annual mass training of their personnel will be coordinated through 51 MOS/MXOOP at the weekly shared resources meeting. 51 MOS/MXOOP will ensure an aircraft is scheduled for this training and coordinate with egress section for the availability of an instructor.

## **6. Maintenance requirements:**

6.1. **(F-16C/D)** Seat and canopy removals/installations require centerline stores to be downloaded to prevent damage caused by interference between the portable crane and aircraft/stores.

6.2. **(F-16C/D)** A minimum of 2 qualified egress personnel are required to perform seat and/or canopy removal/installation.

6.3. Ejection seats, canopies, and explosives components not undergoing actual maintenance will be stored in the section explosive storage location. Ejection seats not undergoing actual maintenance may remain in the maintenance area if all explosive components have been removed and stored in the explosive storage location.

6.4. Any situations or problems encountered during maintenance that are not covered in technical orders or directives will be immediately brought to the attention of section supervision and engineering assistance will be requested from the applicable Air Logistics Center (ALC) IAW applicable local procedures.

6.5. **(F-16C/D)** Except for emergencies, aircraft will not be towed with the canopy actuator disconnected even if the canopy remains installed with maintenance struts/braces or if the ejection seat is raised or raised/tilted to the maintenance position.

6.6. During aircraft acceptance inspections on aircraft returning from Depot, where egress maintenance has been performed, or aircraft transferring to the wing the following tasks must be completed: aircraft and seat records review; CAD/PAD inventory/verification; inspection/repack of personnel and drogue chutes and survival kit. All actions will be accomplished and corrections documented/updated prior to seat and canopy installation; updates will be forwarded to the owning AMU plans, scheduling and documentation section for review.

6.7. The egress crew leader will accomplish a pre-task safety briefing prior to any explosive maintenance task.

## **7. Foreign Object (FO) in the Cockpit Procedures**

7.1. **(F-16C/D)** Upon discovery of FO or suspected FO in the cockpit a preliminary search will be conducted, by flight line personnel, for at least 1 hour. If the FO is not found egress personnel will raise and/or raise/tilt the ejection seat. If the FO is not found after another 1 hour search, then the egress section will remove the ejection seat and canopy IAW Quality Assurance Foreign Object Checklist.

7.1.1. The ejection seat support (rails) will be tilted after seat and canopy removal to facilitate FO search. Rails do not require removal as no additional access is gained.

7.2. **(A/OA-10)** Upon discovery of FO or suspected FO in the cockpit a preliminary search will be conducted, by flight line personnel, for at least 1 hour. If the FO is not found the egress section will raise the ejection seat for another 1 hour search.

7.2.1. Due to the open cockpit configuration of A/OA-10 aircraft, removal of the ejection seat is not required as no additional access is gained.

7.3. If the FO is not recovered, the initial FO discrepancy and all impoundment write-ups will be cleared prior to seat and/or canopy installation.

PATRICK T. McKENZIE, Colonel, USAF  
Commander

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFPD 21-1, *Air and Space Maintenance*, 25 February 2003

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 26 July 2010

AFMAN 33-363, *Management of Records*, 1 March 2008

AFMAN 91-201, *Explosive Safety Standards*, 12 January 2011

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*, 22 September 2009

AF Form 2047, *Explosives Facility License*, 4 July 1998

***Abbreviations and Acronyms***

**ACES II**—Advance Concept Ejection Seat II

**AFRIMS**—Air Force Records Information Management System

**ALC**—Air Logistics Center

**AMU**—Aircraft Maintenance Unit

**EAL**—Entry Authorization Letter

**EOD**—Explosive Ordinance Disposal

**FO**—Foreign Object

**MAJCOM**—Major Command

**MOC**—Maintenance Operations Center

**OPR**—Office of Primary Responsibility

**RDS**—Records Disposition Schedule