

**BY ORDER OF THE COMMANDER
442D FIGHTER WING**

**442D FIGHTER WING INSTRUCTION
21-132**



29 OCTOBER 2024

Maintenance

***AIRCRAFT FUEL SYSTEMS
MAINTENANCE AND REPAIR***

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Department of the Air Force Policy Directive (DAFPD) 21-1, *Maintenance of Military Materiel*. It establishes safety and operating procedures for the 442d Fighter Wing Fuel System maintenance program as determined by Department of the Air Force Instruction (DAFI) 21-101, *Aircraft and Equipment Maintenance Management*, AFI 21-101 Air Force Reserve Command Supplement (AFRCSUP), *Aircraft and Equipment Maintenance Management*, DAFMAN 91-203, *Air Force Consolidated Occupational Safety Instruction*, AFI 48-137 *Respiratory Protection Program*, and Technical Order (T.O.) 1-1-3, *Inspection and Repair of Aircraft Integral Tanks and Fuel Cells*, T.O. 11A-1-33, *Handling and Maintenance of Explosives-Loaded Aircraft*. The Accessory Maintenance Flight is responsible for accomplishing fuel systems maintenance, repairs, and providing for the storage of external aircraft fuel tanks. These procedures apply to all personnel assigned to the 442d Command Post, 442d Maintenance Group and 442d Operations Group. Supervisors, superintendents, and flight chiefs are responsible for ensuring compliance with this instruction. 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 IMT 847 from the field through the appropriate functional chain of command. Request for waivers must be submitted through chain of command to the OPR listed above for consideration and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This revision changes/adds/subtracts...

1. Facilities:

1.1. The primary designated A-10 aircraft fuel systems maintenance facility is Building 1118, room 126. The first alternate fuel systems maintenance facility is located in Building 1118, room 127. The second alternate fuel systems maintenance facility is located in the 509th B-2 aircraft fuel repair dock. Both primary and alternate maintenance facilities are designed and engineered as Air Force fuel systems definitive repair docks.

1.2. The primary designated external fuel tank repair facility is Building 1118, room 124.

1.3. The primary and alternate fuel systems maintenance facilities are approved and certified by the 509th Base Fire Department, 442^d Wing Safety, 509th Wing Safety and the 509th Bioenvironmental Engineering Office.

2. Responsibilities:

2.1. The Fuel Systems Supervisor or designated representative will be responsible for the following:

2.1.1. Author and maintain the Master Entry Plan

2.1.2. Issue and maintain the Master Entry Permits.

2.1.3. Confined Space Entry Training Plan (CSETP).

2.1.4. Emergency Rescue Training Plan (ERTP).

2.1.5. Aircraft Entry Setup Checklist.

2.1.6. Repair Area Setup Checklist.

2.1.7. Respiratory Protection Plan.

2.1.8. Training and certifying personnel to perform fuel system maintenance.

2.1.9. Fire Department (660-687-4507) and Maintenance Operation Center (MOC) (660-687-1250) notification prior to beginning open fuels tank/confined space entry maintenance and after completion of maintenance.

2.1.10. Designate aircraft configuration prior to fuel cell maintenance.

2.1.11. Approve all concurrent maintenance activities during fuel systems maintenance.

2.1.12. Perform Risk Management (RM) evaluations and Job Safety Analysis (JSA) as required or as changes in operational procedures occur.

2.1.13. Fall Protection Plan

2.1.14. Ensure fire suppression system with AFFF is serviceable and online. If unable to, will ensure fire suppression requirements are met via alternative means.

2.2. MOC will coordinate with the fuel systems supervisor on any aircraft being towed into or out of the fuel systems maintenance hangar.

2.3. The 442d Aircraft Maintenance Squadron (AMXS) production supervisors or their appointed representative will, prior to delivery of the aircraft to the fuel systems primary or alternate repair areas, ensure that the aircraft is properly configured to facilitate the required maintenance.

2.3.1. All munitions, except inert training munitions, will be downloaded from aircraft. In addition, all impulse cartridges and all 30MM ammo will be downloaded.

2.3.2. Defuel aircraft fuel tanks as required.

2.3.3. Render aircraft to hangar-safe for maintenance condition.

2.3.4. Coordinate flap position with fuel cell maintenance. Place the aircraft flaps in applicable position.

2.3.5. Ensure external fuel tank environmental covers are stored properly and tracked while tanks are installed on aircraft.

2.4. The 442 Maintenance Squadron (MXS) will, prior to delivery of external aircraft fuel tanks to storage area or external tank repair area, ensure that the tank is properly configured for storage or maintenance. Only Fuel Systems personnel are authorized to transport tanks in any fashion other than with the universal loader, to load onto or remove from the universal loader, to load onto or remove from dunnage/storage stands.

2.4.1. Ensure external tanks are defueled.

2.4.2. Ensure external tanks are properly covered.

2.4.3. Ensure external tanks are properly identified as to serviceable status.

3. Transient Aircraft: When transient aircraft fuel systems support is required in the Fuel Systems maintenance hangar, personnel from the unit supported will be briefed on and ensure compliance with this instruction and applicable fuel system safety and operating procedures.

4. Controlled Access:

4.1. All personnel requiring entry into the fuel systems maintenance bay during open fuel systems maintenance will coordinate entry with the fuel systems supervisor by phone, radio or via the MOC.

4.2. Required entry into the fuel systems maintenance areas will be made through the Building 1118, room 105 (ready room). Entry can also be made through room 152 in the annex on the North end of Building 1118.

5. Restrictions:

5.1. No maintenance shall be performed on aircraft while inerting, depuddling, and purging operations are being accomplished.

5.2. Severe Weather.

5.2.1. When thunderstorms/lightning are within 10 nautical mile radius of Whiteman Air Force Base, fuel cell operations shall be suspended. The MOC will notify the Fuel System supervisor when lightning/thunderstorms are within 25 miles. The Fuel System supervisor shall initiate action to ensure all fuel cell maintenance operations are suspended by the time the severe weather is within 10 nautical miles.

5.2.2. When winds are 30 knots or higher, the MOC will notify the Fuel System supervisor who shall take action to suspend all flight line fuel cell maintenance.

5.2.3. When operations are suspended, access panels, filler caps and any other aircraft openings removed for maintenance shall be temporarily closed. When temporarily closing a panel, it may not be necessary to use a full complement of fasteners.

5.3. Only intrinsically safe radios suitable for use in Class 1, Division 1, and Group D hazardous areas will be introduced and operated during open fuel systems maintenance. Cell phones, cordless phones and other unauthorized electronic devices will not be permitted in the repair areas during open fuel systems maintenance.

5.4. The aircraft battery will be disconnected at all times during open tank maintenance. Battery may be connected momentarily to allow for application of electrical power to accomplish troubleshooting steps outlined in T.O. 1A-10C-2-28TS-1, *Troubleshooting, Fuel System, USAF Series 1A-10C ACFT*.

6. Towing Procedures for Aircraft Undergoing Fuel Cell Maintenance: Aircraft that requires premature removal from repair area shall have the following steps performed:

6.1. All access doors/panels and fuel lines properly secured.

6.2. Warning tags installed on the electrical power receptacle, aircraft battery, fuel management panel, and single point fueling receptacle.

6.3. The aircraft battery will be disconnected at all times during open tank maintenance. Battery may be connected momentarily to allow for application of electrical power to conduct safe for maintenance procedures prior to towing.

6.4. Appropriate Red X entries annotated in the aircraft forms.

7. Equipment:

7.1. The fuel systems shop chief will maintain manufacturer's applicable pamphlets and literature in the fuel cell publications library.

7.2. The following equipment will be inspected and maintained in accordance with manufacturer's maintenance and inspection criteria, AFIs and applicable technical order publications:

7.2.1. Exhaust Blower floor trench

7.2.2. Hoists, 2 and 2 1/2 ton Shaw box

7.2.3. Bullard air pumps

7.2.4. Armstrong air handling system

7.2.5. Exhaust blowers purge system

MICHAEL D. LEONAS, Colonel, USAF
Commander

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

DAFI 21-101, *Aircraft and Equipment Maintenance Management*, 19 December 2023
AFI 21-101 AFRCSUP, *Aircraft and Equipment Maintenance Management*, 13 August 2020
DAFMAN 91-203, *Air Force Consolidated Occupational Safety Instruction*, 24 March 2022
AFI 48-137, *Respiratory Protection Program*, 12 September 2018
DAFPD 21-1, *Maintenance of Military Materiel*, 20 February 2024
T.O. 1-1-3, *Inspection and Repair of Aircraft Integral Tanks and Fuel Cells*, 28 March 2022
T.O. 11A-1-33, *Handling and Maintenance of Explosives-Loaded Aircraft*, 26 October 2022
T.O. 1A-10C-2-28TS-1, *Troubleshooting, Fuel System, USAF Series 1A-10C ACFT*, 10 January 2024

Adopted Forms

AF IMT 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AFI—Air Force Instruction
AFRIMS—Air Force Records Information Management System
AMXS—Aircraft Maintenance Squadron
CSETP—Confined Space Entry Training Plan
DAFI—Department of the Air Force Instruction
DAFMAN—Department of Air Force Manual
DAFPD—Department of the Air Force Policy Directive
ERTP—Emergency Rescue Training Plan
JSA—Job Safety Analysis
MOC—Maintenance Operation Center
MXS—Maintenance Squadron
OPR—Office of Primary Responsibility
RDS—Records Disposition Schedule
RM—Risk Management
TO—Technical Order