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**Maintenance**

**AIRCRAFT HOT REFUELING PROCEDURES**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFD 21-1, *Managing Aerospace Equipment Maintenance*. It establishes policies, procedures, responsibilities, and certification requirements for hot refueling F-15 aircraft. It applies to 18th Wing and associate units at Kadena AB. This publication does not apply to the Air National Guard or US Air Force Reserve.

**1. References:** TOs 1F-15C-2-12JG-11-1, *Servicing - Special Occurrence*, 00-25-172, *Ground Servicing of Aircraft and Static Bonding/Grounding*, 11A-1-33, *Handling & Maintenance of Explosives Loaded Aircraft*, 37A9-3-11-1CL-1, *Operational and Organizational Maintenance Hot Refueling and Hot Integrated Combat Turn-Around Procedures*, 00-25-172CL-4, *Aircraft Servicing with USAF R-5, R-9, and R-11 Servicing Vehicles*, 1F-15A-33-1-2, *Nonnuclear Munitions Loading Procedures*, PACAFI 21-101, *Objective Wing Aircraft Maintenance*, and AFOSH STD 91-38, *Hydrocarbon Fuels - General*, and AFI 21-218, *Aircraft Operation & Movement on the Ground*.

**2. Training:**

2.1. Training will be conducted in three phases: Phase I - Academic Familiarization, Phase II - Task Qualification, and Phase III - Task Certification.

2.2. Phases I and II will be conducted by 18th Logistics Support Squadron (18 LSS), Maintenance Training Flight (MAT) and 18th Supply Squadron (18 SUPS) Fuels Management Flight. Phase III will be completed by designated hot refueling certifiers from the fighter squadrons (FS), or 18 OG Quality Assurance (QA), Trainer/Evaluator/Certifier (T/E/C). As a minimum, initial certification will require the completion of two hot refuels. The first will be an over-the-shoulder, hands-on training, and the second will be performed with no assistance. There will be a maximum of one individual being initially certified on any pit.

2.3. Core Automated Maintenance System (CAMS) will be used to track individual qualifications. The following CAMS course codes will be used:

2.3.1. 388 - (F-15) Hot Pit Academic/Qualification Training. Personnel must have a minimum of 1 year F-15 flight line experience, and be qualified on aircraft refueling, marshaling, armament safing procedures, and fire extinguisher use prior to attending this class. The position D member does not require 1 year experience.

2.3.2. 427 - (F-15) Hot Pit Qualified. To maintain proficiency, qualified members must satisfactorily complete two hot refueling operations every 6 months. Members decertified for safety violations and/or failure to maintain proficiency must obtain recertification within 30 days or repeat Phases I, II, and III to recertify. Fuels personnel will require a completed AF Form 1098, **Special Task Certification and Recurring Training**, and fulfill the recurring training requirement.

2.3.3. 514 - (F-15) Hot Pit Certifiers. Each sortie generation flight (SGF) will designate a maximum of four highly qualified 7-levels or above as hot refueling certifiers. Squadron certifiers require an initial/annual evaluation by 18 OG/QA T/E/C. Squadrons will coordinate with 18 OG/QA for initial and certifications, and recertifications of squadron certifiers. Squadron certifiers must complete an initial evaluation by the 18 OG/QA T/E/C before their inclusion onto the special certification roster (SCR) course code 514. Squadron certifiers may perform initial, recurring, or annual certification of personnel performing the Pad Super, A, B, and D positions, in accordance with (IAW) PACAFI 21-101. Squadron certifiers will ensure certifications are updated in CAMS.

2.3.4. 378 - (F-15) Hot Pit Pad Super. Must possess a 7-skill level or higher in an aircraft maintenance AFSC and be hot refuel super (A-position) qualified.

2.3.5. 375 - (F-15) Hot Refuel Supervisor (A-position). Must possess an aircraft maintenance AFSC and have 1 year of F-15 experience. Must be task qualified and capable of supervising the hot refueling crew.

2.3.6. 376 - (F-15) Hot Refuel (B-position). Must be task qualified, possess an aircraft maintenance AFSC, and have 1 year of F-15 experience.

2.3.7. 377 - (F-15) Hot Refuel (D-position). Must be task qualified and possess an aircraft maintenance AFSC.

2.3.8. CAMS course code 427 will be used to update personnel fulfilling the semi-annual hot refueling requirements. Course codes 375, 376, 377, and 378 will be used to show individual qualification by position and annual evaluation requirements. Course code 514, squadron hot refueling certifiers, will be used to document squadron QA augmentees and annual evaluation requirements. 18 OG/QA T/E/C will maintain/update squadron certifiers under course code 514.

### 3. General:

3.1. Hot refueling operations will be performed by qualified personnel only. Individuals in training must be accompanied by a designated hot refueling certifier.

3.2. Aircraft should normally be hot pit refueled before being loaded with munitions. However, hot pit refueling of explosives-loaded (captive or live) aircraft is authorized, provided all munitions are safed IAW TOs 1F-15A-33-1-2 and 00-25-172 prior to entering the hot pit area.

3.3. Personnel who are responsible for conducting and supervising hot pit refueling must have a thorough knowledge of and observe all safety procedures following sequential steps for hot pit operations.

3.4. When hot pits are in use, jet fuel starter (JFS) operation will not be conducted on the hot pit refuel service apron (formally known as service apron 3). Aircraft must taxi off the hot pit refuel apron before attempting JFS and/or engine restart operations.

#### 4. Responsibilities:

4.1. 18 OG Deputy Commander for Maintenance will be the OPR for hot refueling operations.

4.2. Squadron commanders and squadron maintenance officer (SMO) are responsible for ensuring strict compliance with the established procedures and respective OIs and WGIs.

4.3. Personnel performing hot pit operations will be responsible for complying with procedures listed in the respective regulations, manuals, TOs, checklists, and this WGI.

4.4. During normal operations, the surging FS will be in charge of the hot pits, provide the hot pit supervisor, and coordinate requirements with the other FS, Petroleum, Oils, and Lubricants (POL), and Maintenance Operations Center (MOC). The following will be determined at the weekly scheduling scrub meeting:

4.4.1. How many pits will be open each flying day.

4.4.2. The number of personnel each SGF will provide. **NOTE:** Personnel requirements will be as outlined in 18 WG Form 69, **Hot Pit Personnel**.

4.5. SGF will supply the following personnel:

4.5.1. Hot Pit Area Supervisor – Task-qualified maintenance Air Force Specialty Code (AFSC), 7-level or above who will be responsible for the overall supervision of the hot refueling operations.

4.5.2. Team Members A, B, and D – Task-qualified maintenance AFSC (3-skill level or above with a minimum of 1 year F-15 experience). Position D member does not require 1 year experience.

4.5.3. If only one hot refueling pit is in operation, the refueling supervisor (A-position) may assume the pad super duties providing the individual is qualified in the pad super position.

4.5.4. SGF will supply a listing of personnel that performed hot refueling to the 18 OG/QA T/E/C no later than 1 week upon completion of hot refueling.

4.5.5. Cursory Crew – Task-qualified maintenance AFSC (minimum of three people).

4.6. Fuels Management Flight will provide the following personnel: Team Member C – Task-qualified, fuels equipment operator (3-skill level or above).

4.7. Hot Pit Supervisor will:

4.7.1. Maintain overall responsibility for the safe and efficient operation of the hot pits and ensure strict compliance with all applicable technical orders.

4.7.2. Brief personnel on aircraft configuration, wind direction, positioning of aircraft, foreign object damage (FOD) potential, and emergency procedures.

- 4.7.3. Ensure all necessary personnel and equipment, including a fire truck, are in position prior to the first aircraft arrival.
  - 4.7.4. Conduct a formal team review of the servicing procedures as outlined in the applicable job guide ensuring all team members to include cursory and restart crews, are briefed on their assignments, responsibilities concerning aircraft configuration, and ground conditions.
  - 4.7.5. Lead the hot pit area FOD walk prior to the opening of the hot pit area. FOD walk will be reaccomplished in its entirety after every rain shower of the day.
- 4.8. Cursory crew will direct all aircraft to the designated location, at least 50 feet from the hot pit area and perform the following:
- 4.8.1. Inspect for hot brakes and tire serviceability. If hot brakes are detected, inform the aircrew to taxi to the designated hot brake area and notify MOC of the aircraft condition.
  - 4.8.2. Shut down the left engine.
  - 4.8.3. Install all armament ground safety pins and make sure the aircraft is safed for maintenance.
  - 4.8.4. Inspect for fuel and hydraulic leaks, and overall condition of the aircraft.
- 4.9. Restart crew will perform a cursory intake inspection of the non-running engine prior to engine restart IAW 18 WGI 21-102, *Foreign Object Damage*. The intake inspection will be conducted using a 6-volt lantern, 3-cell mag light, or a 2-cell flashlight with a halogen bulb. Extreme caution should be exercised to ensure engine is not running before entering the inlet danger area.

**5. Forms Prescribed.** 18 WG Form 69, **Hot Pit Personnel**

JAMES B. SMITH, Brigadier General, USAF  
Commander, 18th Wing

**Attachment 1****HOT PIT SUPERVISOR SAFETY BRIEFING GUIDE**

- A1.1.** As a team, thoroughly review TO 1F-15C-2-12JG-11-1 regarding hot refueling procedures, emphasizing all **WARNINGS, CAUTIONS, & NOTES**.
- A1.2.** All loose items such as pencils and line badges will be stowed and all sources of ignition (matches, lighters, etc.) will be removed when conducting hot pit operations.
- A1.3.** Flak vests, nylon web belts, etc., cause static electricity. Ensure war gear is not worn during refueling operations when servicing with low flash point fuel such as JP-4.
- A1.4.** If an aircraft crash/fire occurs at the same airfield, servicing operations already underway **will be stopped and fuel servicing equipment will be disconnected**. No new servicing operations will be started until the crash/fire vehicle returns to the site to support servicing operations.
- A1.5.** In the event of an in-flight emergency (IFE) or crash warning, servicing operations already underway may be completed. No new servicing operations will begin until the crash/fire vehicle returns to the hot pit area.
- A1.6.** JFS/engine start operations are prohibited in the hot pit area during any phase of the hot pit operation. Only when pits are officially closed will JFS/engine start operations be allowed in this area (i.e., days when there are no surges and for contingency operations or exercises).
- A1.7.** Hot pit refueling operations will be terminated when a lightning warning has been issued indicating an electrical storm is within 5 miles of the servicing area, or if there is any doubt as to the safety of personnel, equipment, or operations.
- A1.8.** Ensure a FOD walk of the entire hot pit area is conducted prior to opening the pits. This will be reaccomplished after every rain shower of the day or as deemed necessary by the hot pit supervisor.
- A1.9.** Ensure all aircraft entering the hot refueling area have had all munitions (captive or live) downloaded or safed in accordance with applicable technical orders.
- A1.10.** Brief all personnel on emergency procedures as outlined in TO 1F-15C-2-12JG-11-1 and ensure each team member is aware of their responsibilities during an emergency situation.
- A1.11. FUEL LEAKS :** Designated fire guard(s) will stand by with the fire extinguisher nozzle(s) in hand until the fire department arrives.
- A1.12. FIRE :** Fire guard(s) will attempt to extinguish the fire until the fire department arrives or unless the munitions are engulfed in flames.

Attachment 2

**HOT PIT REFUELING SUPERVISOR SAMPLE CHECKLIST**

ALL PURPOSE CHECKLIST		PAGE 1 OF 1 PAGES		
TITLE/SUBJECT/ACTIVITY/FUNCTIONAL AREA		OPR	DATE	
HOT PIT REFUELING SUPERVISOR SAMPLE CHECKLIST		18 OG/ CMAW	20000301	
NO.	ITEM <i>(Assign a paragraph number to each item. Draw a horizontal line between each major paragraph.)</i>	Y	N	N/A
1.	Pad supervisor, team member, and cursory crew - PRESENT			
2.	Radio - AVAILABLE			
3.	Individual responsibilities - BRIEFED			
4.	Safety & emergency briefing - CONDUCTED			
5.	TO 1F-15C-2-12JG-11-1 - AVAILABLE			
6.	Ear protection - AVAILABLE & WORN			
7.	Steps ladders (one per aircraft at hot pit & cursory areas)			
8.	Headsets (three each, two primary & one spare)			
9.	"Y" cords (two each, one primary & one spare)			
10.	Grounding wires (two, 75 feet in length)			
11.	Safety goggles (as required)			
12.	Approved fuel catch containers (minimum one per spot)			
13.	Rubber buckets (minimum one per spot)			
14.	Pylon/tank safety pins (one per pylon, one per tank)			
15.	Sufficient AIM-9 fuse covers and dome covers			
16.	Chocks (as required, all with 8-foot lanyards)			
17.	Fire extinguishers (two per pit, Halon 1211 type)			
18.	R-11 Refueler			
19.	Fire truck(s)			
20.	No electrical storms within 5 miles			
21.	Wind condition			
22.	FOD walk - CONDUCTED			
23.	Operational marshaling wands (for night operations)			
24.	Reflective vests for each refueling supervisor (A-position)			