

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

51ST FIGHTER WING INSTRUCTION 21-112

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Maintenance



***END OF RUNWAY/EXPLOSIVE LOADED
AIRCRAFT, HUNG ORDNANCE/GUN
SYSTEM MALFUNCTION PROCEDURES,
AND HUNG ORDNANCE/GUN SYSTEM
MALFUNCTION IMPOUNDMENT***

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This instruction implements AFD 21-1, *Air and Space Maintenance*. In accordance with AFI 21-101, *Aircraft and Equipment Maintenance Management*, paragraph 2.7.13, this instruction establishes procedures for parking/launch and recovery/end-of-runway (EOR) operations for explosives-loaded aircraft, hung ordnance/gun system malfunction, and hung ordnance/gun system malfunction impoundment of A-10/F-16 aircraft. Waiver authority to deviate from this instruction is 51 FW/CC. It applies to all personnel assigned, attached to, or associated with the 51 FW. 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 Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS) <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This document has been revised to reflect the new AFI 21-101, *Aircraft and Equipment Maintenance Management*, that was released 21 May 2015. The only changes made cite

corrections to a referenced paragraph in AFI 21-101 requiring the Wing Weapons Manager (WWM) to develop an installation publication or supplement to AFI 21-101 for parking, launch and recovery of explosives-loaded aircraft, end-of-runway procedures, and to outline situations warranting impoundment of aircraft with hung ordnance, delayed release or jammed gun systems.

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1. EOR and Cursory Program Management: 51st Aircraft Maintenance Squadron (AMXS) will be responsible for launch and recovery (arming/de-arming) of A-10/F-16 aircraft. The 25th and 36th Aircraft Maintenance Unit (AMU) supervisors will ensure personnel are familiar with requirements in this instruction prior to assigning them to EOR/cursory duties. The 25 AMU will be responsible for maintaining the 27 EOR facility. The 36 AMU will be responsible for maintaining the 09 EOR facility.

1.1. EOR Personnel Requirements. EOR personnel will be in-place no-later-than (NLT) 1 hour prior to first scheduled takeoff and land times. During this period a safety briefing and foreign object (FO) walk will be accomplished. The following personnel are required to conduct arm/de-arm operations.

1.1.1. Arming Operations. Each AMU will assign:

1.1.1.1. One AFSC 2A3X3X, 7-level NCO, marshalling qualified, to perform as EOR Supervisor. EOR Supervisors are appointed by and report directly to 51AMXS/MXA.

1.1.1.2. One AFSC 2A3X3X to perform aircraft inspection. IAW T.O. 1F-16CG-6WC-1-11, Combined Preflight/Postflight, End-of-Runway, Thruflight, Launch and Recovery, Quick Turnaround, Basic Postflight, and Walkaround Before First Flight of Day Inspection Work cards or T.O.1A-10C-6WC-1, Launch, Recovery, Thruflight, Quickturn Inspection Ser No 75-0258 and Subsequent as applicable.

1.1.1.3. Two AFSC 2W1X1, Aircraft Armament Systems, both of which are immediately prior-to-launch (IPL)/safing qualified. One member must be checklist

qualified IAW T.O. 1F-16C-33-1-2CL-100, Delayed Flight or Alert, Immediately Prior to Launch and Safing, or T.O. 1A-10C-33-1-2CL-100, Immediately Prior to Launch and Safing, as applicable.

1.1.2. De-arming Operations. Each AMU will assign:

1.1.2.1. One AFSC 2AXXXX, marshalling qualified, to perform as EOR supervisor.

1.1.2.2. Two AFSC 2W1X1, both of which are IPL/safing qualified. One member must be checklist qualified IAW T.O. 1F-16C-33-1-2CL-100 or T.O. 1A-10C-33-1-2CL-100, as applicable.

1.2. Cursory Personnel Requirements. Cursory personnel will be in-place NLT 30 minutes prior to first scheduled land time. The following personnel are required to conduct cursory operations:

1.2.1. One AFSC 2A3XXX, marshal qualified, to perform as cursory supervisor.

1.2.2. Two AFSC 2W1X1, both of which are IPL/safing qualified. One member must be checklist qualified IAW T.O. 1F-16C-33-1-2CL-100, or T.O. 1A-10C-33-1-2CL-100, as applicable.

1.3. Personnel Training Requirements. Commanders and supervisors will ensure personnel subject to arm/de-arm operations are thoroughly knowledgeable of the inherent dangers of EOR/cursory operations and the precautions necessary for safe and efficient accomplishment.

1.3.1. AMU Section Chiefs will ensure the following requirements are completed prior to actual training of personnel on EOR/cursory operations:

1.3.1.1. AFSC 2A3XXX are required to have:

1.3.1.1.1. Specific A-10/F-16 aircraft maintenance orientation.

1.3.1.1.2. Specific A-10/F-16 egress familiarization.

1.3.1.1.3. Current marshalling qualification.

1.3.1.1.4. Specific A-10/F-16 aircraft maintenance orientation.

1.3.1.1.5. Specific A-10/F-16 IPL/safing qualification.

1.3.2. Training and Qualification. AMU Section Chiefs are responsible to ensure only qualified personnel are dispatched for EOR/cursory operations. Training/qualification will be documented in each individual's Training Business Area (TBA) Training Plan/AF Form 797, Job Qualification Standard Continuation/Command JQS, or weapons load crew management tool, as applicable.

1.3.2.1. Respective AMU will be responsible for training all EOR/cursory specific procedural steps of AFSC 2A3XXX/AFSC 2W1X1, personnel from aircraft arrival to aircraft departure. This training does not include IPL/safing qualification procedures which are conducted by Weapons Standardization (WS).

1.4. Equipment Requirements. In addition to requirements mandated in AFI 21-101, each respective AMU will ensure the following equipment is on-hand/available during EOR/cursory operations. NOTE: Mobile non-frangible ground support equipment (i.e. light carts and heaters) transported to airfield in support of EOR duties may be in-place no more

than 3 hours prior to aircraft arrival and 3 hours after aircraft departure. After use, all support equipment must be removed from aircraft parking area IAW UFC 3-260-01, Airfield and Heliport Planning and Design and 51FWI 13-204, Airfield Operations and Local Flying Procedures.

1.4.1. One 150-pound Halon 1211 fire extinguisher (per two parking spots).

1.4.2. F-16 aircraft ladder or appropriate maintenance stand (for emergency egress).

1.4.3. At least one vehicle per arm/de-arm area (for emergencies).

1.4.4. Radio with access to Maintenance Operations Center (MOC) and Air Traffic Control (ATC) tower (one per arm/de-arm end).

1.4.5. Two FL-1 light carts or equivalent (during hours of darkness).

1.5. Protective Equipment. The following protective equipment is only required for aircraft having white phosphorus rockets, with exception of paragraph 1.5.5, which is also required for aircraft having BDU-33 cold spots.

1.5.1. Flame proof gloves.

1.5.2. Face shield.

1.5.3. Gauze sponges.

1.5.4. Two regular sponges.

1.5.5. Five gallons of clean water (also required for BDU-33 cold spots).

1.6. EOR and Cursory Safety Briefing. The respective AMU will develop a standard safety briefing to be administered to all personnel prior to arm/de-arm/cursory operations. Ensure FO walk throughout arm/de-arm/cursory parking and taxi areas (accomplished prior to first scheduled takeoff/land times).

1.6.1. Safety briefing will include as a minimum:

1.6.1.1. Applicable warnings, cautions, and notes pertaining to specific A-10/F-16 aircraft.

1.6.1.2. Dropped object awareness.

1.6.1.3. Hot brake procedures as outlined IAW approved technical data guidance as well as 51FWI 13-204.

1.6.1.4. Double hearing protection.

1.6.1.5. Removal of jewelry.

1.6.1.6. Right main wheel (F-16) and nose wheel (A-10) will remain chocked any time personnel are under aircraft.

1.6.1.7. If aircraft shuts down, both main wheels will be chocked and landing gear safety pins installed.

1.6.1.8. During emergencies, no personnel will approach emergency aircraft until directed by Senior Fire Official.

1.6.1.9. Composite tool kit (CTK) inventory/accountability will be accomplished prior to and at the end of each shift.

1.6.1.10. **(F-16)** Personnel will approach and exit immediate area around the aircraft at a safe distance from the engine intake. Due to high airflow intake, extreme caution will be used at the forward inboard side of stations 4 and 6 when fuel tanks are installed.

1.6.1.11. Binding of a bomb rack mechanical safing pin could indicate a partially unlocked condition—do not force removal of any binding mechanical pin. Safe aircraft completely and direct pilot back to normal parking location.

1.6.1.12. 2A3XXX will ensure aircrew positions all applicable switches OFF, SAFE, or NORMAL and places both hands on the instrument shroud in view of the EOR/cursory supervisor. AFSC 2W1X1s personnel will ensure arming/de-arming operations do not begin until this is accomplished and will be terminated by the EOR/cursory supervisor if the aircrew repositions hands to where both hands are no longer visible.

1.6.1.13. AFSC 2W1X1s will ensure personnel, vehicles, or aircraft do not unnecessarily pass in front of or behind the aircraft when forward firing ordnance is being armed/de-armed. All training and captive forward-firing munitions will be treated as live.

1.7. Designated Arming/De-arming Locations. Designated arming/de-arming locations are as follows: all sited Alpha/Bravo diamond protective aircraft shelters/hardstands, Draggins Lair third generation shelters (exception: see paragraph 1.7.1.2 for de-arming A-10 aircraft that have attempted/fired 30mm gun), flow-thrus 15-24, and 09/27 EOR. With MXG/CC approval, the Doorstop is an approved location for TSP unit arming/dearming. The HCP, by virtue of its use, is designated a de-arm area during IFE/ground emergencies. The two approved cursory areas are the taxiways entering East and West ends of the flow-thrus. Cursory supervisor will chock aircraft prior to second bend of the taxiway ensuring munitions/gun point towards rear barrier wall. See attachments 2-5 for all reference locations. NOTE: During arming operations, ensure live/captive AIM-9 dome covers and influence fuze/target detector covers are removed and remain at aircraft parking locations. All remaining munitions safing pins/devices will be removed IAW paragraph 1.7.1, or 1.7.2, as applicable.

1.7.1. Contingencies, alert operations, and large force/local exercises.

1.7.1.1. Arming (A-10/F-16). All weapons related safing pins/devices may be removed at all designated arm locations as specified in paragraph 1.7.

1.7.1.2. De-arming (A-10). At no time will a returning A-10 aircraft which had attempted/fired 30mm gun enter the parking area (Draggins Lair) without undergoing de-arming procedures. Returning aircraft may have weapons related safing pins/devices installed at the following locations:

1.7.1.2.1. Inside flow-thrus 15-24.

1.7.1.2.2. At approved cursory areas per paragraph 1.7. prior to hot-pit operations.

1.7.1.2.3. At approved cursory areas per paragraph 1.7. prior to entering the Draggin's Lair immediately prior to aircraft shutdown and before push-back.

1.7.1.2.4. At 09/27 EOR. NOTE: During de-arming, if the EOR/cursory crew determines an unsafe gun condition (i.e. A-10 mechanical gun safing pin cannot be installed properly/correctly), aircraft will be directed to HCP where procedures in paragraph 3 will be followed.

1.7.1.3. De-arming (F-16). Returning aircraft may have weapons related safing/pins devices installed at the following locations:

1.7.1.3.1. Inside flow-thrus 15-24.

1.7.1.3.2. At approved cursory areas per paragraph 1.7. prior to hot-pit operations.

1.7.1.3.3. In front of sited Alpha/Bravo diamond Protective Aircraft Shelters (PASS) and hardstands immediately prior to aircraft shutdown and before push-back.

1.7.1.3.4. At 09/27 EOR. NOTE: During de-arming, if the EOR/cursory crew determines an unsafe gun condition (i.e. F-16 gun electrical safing pin cannot be installed properly/correctly), aircraft will be directed to HCP where procedures in paragraph 3 will be followed.

1.7.2. Daily (peacetime) flying operations.

1.7.2.1. All weapons related arm/de-arm procedures will be accomplished at either 09/27 EOR.

1.7.2.2. During construction/repair or In-flight Emergency(IFE)/ground emergency that render 09/27 EOR unusable, daily arm/de-arm procedures will be accomplished at flow-thru's and/or approved cursory areas (east/west end of flow-thru's).

1.8. Safing Pin/Device Storage. Care will be taken when storing munitions safing pins/devices to avoid overpressure which may lead to pin bag opening. Ensure all pylon/aircraft access doors are properly secured. Secure safing pins/devices as follows:

1.8.1. A-10 Secure safing pins/devices inside panel W-79.

1.8.2. F-16 Secure safing pins/devices in designated bag located within the pylon station from which pins/devices were removed. Exception: Missile diaper pin, chaff/flare pin, gun electrical pin, and ALE-50 pin can be stowed in station 5 compartment, or in the pylon station of easiest convenience.

1.8.3. EOR personnel will immediately report any missing safing pin/device to EOR supervisor who will in-turn immediately notify AMU production superintendent.

1.9. EOR Arming. The following procedures are stipulated for daily peacetime operations. During exercise, contingencies, and alert operations the 2A3X3X aircraft inspector will assume EOR supervisor duties, as applicable, if there is only one 2A3X3X available for launch-out of aircraft.

1.9.1. 2A3XXX 7-level, EOR Supervisor:

- 1.9.1.1. Maintains verbal and visual contact with pilot. EOR should always have verbal and visual contact with the pilot to ensure the step below is accomplished.
- 1.9.1.2. Verifies armament switches are OFF, SAFE, or NORM and pilots hands are clear throughout arming of munitions.
- 1.9.1.3. **(A-10 AGM-65 Arming)** Ensure pilot positions flap switch to UP position.
- 1.9.1.4. Monitors EOR inspection activities and is responsible for safety and adherence to aircraft tech data.
- 1.9.1.5. Wears reflective vest at all times.
- 1.9.1.6. Marshal aircraft for parking and tire rollover inspection.
- 1.9.1.7. Monitors EOR inspections activities, ensuring adherence to aircraft tech data.
- 1.9.1.8. Verifies with 2W1X1 weapons (checklist qualified member) all munitions are armed.
- 1.9.1.9. Signals for disconnection of communication cord and “chocks out”.
- 1.9.2. 2A3XXX Aircraft Inspector:
 - 1.9.2.1. Wears reflective vest at all times (not required when 2A3XXX is launching aircraft from normal parking location).
 - 1.9.2.2. Marshal aircraft for parking and tire rollover.
 - 1.9.2.3. **(A-10)** Chock/inspect nose tire.
 - 1.9.2.4. **(F-16)** Chock/inspect right main tire.
 - 1.9.2.5. Connects communication cord to aircraft (not applicable if using wireless headset).
 - 1.9.2.6. Performs rollover inspection of applicable tire and re-chocks tire.
 - 1.9.2.7. Disconnects communication cord (not applicable if using wireless headset).
 - 1.9.2.8. Removes chocks.
- 1.9.3. 2W1X1 Weapons Inspectors:
 - 1.9.3.1. Verifies with marshaller that the pilot’s hands are clear prior to arming munitions.
 - 1.9.3.2. IPL/safing checklist qualified member will be in charge of arming procedures, IAW T.O. 1F-16C-33-1-2CL-100, or T.O. 1A-10C-33-1-2CL-100, and will ensure all safing pins/devices are removed and stored in IAW paragraph 1.8.
 - 1.9.3.3. Verifies sortie requirements for gun and ensures proper hot/cold procedures IAW T.O. 1F-16C-33-1-2CL-100, or T.O. 1A-10C-33-1-2CL-100.
 - 1.9.3.4. Signals EOR supervisor when arming procedures are complete.
- 1.10. EOR De-arming.
 - 1.10.1. 2AXXXX EOR/Cursory Supervisor:

- 1.10.1.1. Wears reflective vest at all times.
 - 1.10.1.2. Marshal aircraft for parking and tire rollover.
 - 1.10.1.3. Connects communication cord to aircraft (not applicable if using wireless headset).
 - 1.10.1.4. Maintains verbal and visual contact with pilot. EOR should always have verbal and visual contact with the pilot to ensure the step below is accomplished.
 - 1.10.1.5. Verifies armament switches are OFF, SAFE, or NORM and pilots hands are clear throughout safing of munitions.
 - 1.10.1.6. Monitors EOR inspection activities.
 - 1.10.1.7. Verifies with AFSC 2W1X1 weapons checklist qualified member that all munitions are safe.
 - 1.10.1.8. Signals for disconnection of communication cord and “checks out”.
- 1.10.2. AFSC 2W1X1 Weapons Inspectors:
- 1.10.2.1. **(A-10)** Chock nose tire; inspect nose and both main tires before/after rollover and inspect for hot brakes.
 - 1.10.2.2. **(F-16)** Chock right main tire; inspect both main tires before/after rollover and inspect for hot brakes.
 - 1.10.2.3. Verifies with marshaller that pilot hands are clear prior to safing munitions.
 - 1.10.2.4. Checklist qualified member will be in charge of safing procedures, using T.O. 1F-16C-33-1-2CL-100, or T.O. 1A-10C-33-1-2CL-100, and will ensure all safing pins/devices are installed.
 - 1.10.2.5. Signals EOR supervisor when safing procedures are complete.
- 1.10.3. EOR/Cursory Discovered Unsafe Condition.
- 1.10.3.1. When IFE is not declared and an unsafe condition (i.e., ruptured case, armed fuze, activated initiator, unsafe gun) is discovered during safing procedures and involves high explosive munitions, EOR personnel will declare a ground emergency through MOC. MOC will coordinate with the aircraft commander to taxi the aircraft to the HCP as soon as possible.
 - 1.10.3.2. If unsafe condition involves unsecured Target Practice/White Phosphorous (TP/WP) rocket or any rocket motor showing signs of bulging, burns, soot, or evidence of partial firing, aircraft will remain at EOR location. EOR personnel will declare ground emergency through MOC and evacuate area to required withdrawal distance, as applicable, in appropriate IPL/safing checklist until munition(s) is rendered safe.
 - 1.10.3.2.1. EOR personnel will ensure other aircraft do not taxi in front of aircraft having unsafe forward firing munitions.

2. Hung/Unsafe Ordnance Program Management. AMU Weapons Section Chiefs will ensure only knowledgeable AFSC 2W1X1 personnel are dispatched, one of which will be a highly qualified 7-level acting as overall weapons supervisor. The responding senior fire official

will function as the incident commander. If declared emergency involves a transient aircraft and is not of the same type/block assigned to Osan AB, WS personnel will be notified to respond.

2.1. Hung/Unsafe Ordnance Notification. Upon notification of IFE/ground emergency for aircraft returning with hung or unsafe ordnance MOC will initiate emergency action checklist to notify applicable respondent agencies. Security forces (SF) will be notified of the IFE through the crash net and respond to close/block Perimeter Road 300 feet on each side of HCP gun berm until termination of emergency. NOTE: Explosive ordnance disposal (EOD) personnel will remain on standby until such time weapons personnel requests EOD presence through the incident commander.

2.2. AMU Personnel Requirements. When an IFE/ground emergency is declared the respective AMU will dispatch the following knowledgeable personnel in an expedient manner.

2.2.1. One 2W1X1 7-level supervisor, IPL/safing qualified and checklist qualified.

2.2.2. Two 2W1X1 technicians, IPL/safing qualified.

2.2.3. One 2A3XXX, qualified to marshal.

2.3. Equipment Requirements.

2.3.1. Weapons and/or hot gun CTK.

2.3.2. Aircraft ground cord.

2.3.3. A minimum of one 150-pound Halon fire extinguisher or equivalent.

2.3.4. One or more 20mm ammunition cans as required.

2.4. Protective Equipment. (White Phosphorus Munitions).

2.4.1. Flame proof gloves.

2.4.2. Face shield.

2.4.3. Gauze sponges.

2.4.4. Two regular sponges.

2.4.5. Five gallons of clean water (also required for BDU-33 cold spots).

2.5. Initial Hung/Unsafe Ordnance Procedures. The procedures in AFMAN 91-201, Explosives Safety Standards, all applicable technical orders, and this instruction will be followed. All aircraft with hung/unsafe forward firing munitions will taxi to HCP and point at gun berm. Aircraft with hung/unsafe aft firing munitions, SUU-25 will taxi to HCP and point towards the gun berm.

2.5.1. Once aircraft taxis to HCP, aircraft will be chocked and checked for hot brakes by 2A3/2W1 personnel prior to any other personnel entering the area. AMU personnel will get clearance from incident commander to enter area, establish communication with the aircrew, and begin safing all other munitions prior to taking action on hung/unsafe munition(s).

2.5.1.1. AFSC 2W1X1 personnel will proceed to safe hung/unsafe munition IAW applicable technical data and advise incident commander when munition has been rendered safe.

2.5.1.2. If AFSC 2W1X1 personnel cannot render munition safe, aircrew will be directed to shut down engine(s) and incident commander will request dispatch of EOD.

2.6. Specific Hung/Unsafe Ordnance Procedures.

2.6.1. 2.75 Inch Rocket.

2.6.1.1. After installing launcher electrical safing pin, inspect rocket motors for signs of bulging, burns, soot, evidence of partial firing, and see if any rocket has moved in the LAU-131. If all remaining rockets have not moved, and it can be determined that no rocket motor(s) have fired, the aircraft may taxi to the normal parking area.

2.6.1.2. If any rocket motor(s) show signs of bulging, burns, soot, evidence of partial firing, or if rocket has moved in the LAU-131, AFSC 2W1X1 lead will notify incident commander and request dispatch of EOD.

2.6.2. General Purpose/Cluster Bomb.

2.6.2.1. After bomb rack mechanical and electrical safing pins are installed, inspect bomb for safe indications IAW applicable technical order. If all indications are safe, aircraft may return to normal parking area.

2.6.2.2. If bomb cannot be safed or determined safe, AFSC 2W1X1 lead will notify on-scene commander and request dispatch of EOD.

2.6.3. AGM-65 Missile.

2.6.3.1. If the thermal battery is determined to have been fired, aircraft will remain at HCP and emergency procedures as prescribed in loading technical data will be followed. AFSC 2W1X1 lead will notify incident commander and request dispatch of EOD.

2.6.4. AIM-9/120 Missile.

2.6.4.1. If pilot attempted to launch missile and there is no evidence of burns, soot, or partial firing, missile will be safed and aircraft may return to normal parking area.

2.6.4.2. If pilot attempted to launch missile and there is evidence of burns, soot, or partial firing, EOD will be dispatched immediately. Aircrew will be directed to shutdown engine(s) and missile will be downloaded at HCP, as directed by EOD.

3. A-10/F-16 Gun Malfunction Program Management. Commanders and supervisors will ensure all personnel subject to safing/clearing gun malfunctions are familiar with guidance within this instruction. Personnel will be kept to the minimum number necessary to complete the job safely per T.O. 1A-10C-2-94JG-6, Job Guide – Armament 30mm Gun Sys, or T.O. 1F-16CG-2-94JG-50-1, M61A1 Gun System, as applicable. The responding senior fire official will function as the incident commander.

3.1. Personnel Requirements:

3.1.1. AMU:

3.1.1.1. One technical sergeant, or above, acting as maintenance supervision, any aircraft AFSC.

3.1.1.2. One AFSC 2W171, acting as gun stoppage supervisor.

3.1.1.3. One AFSC 2W1X1 load crew member.

3.1.1.4. One AFSC 2A3XXX, qualified to marshal.

3.1.2. Armament Flight Personnel Requirement:

3.1.2.1. One highly qualified AFSC 2W171 gun technician, minimum.

3.2. Equipment Requirements.

3.2.1. Weapons and/or hot gun CTK.

3.2.2. Aircraft ground cord.

3.2.3. A minimum of one 150-pound Halon fire extinguisher or equivalent.

3.2.4. **(F-16)** one or more 20mm ammunition cans as required.

3.3. Personnel Qualifications.

3.3.1. Weapons Section Chief will ensure highly qualified and knowledgeable AFSC 2W1X1 maintenance technicians are dispatched to 20mm gun malfunction.

3.4. Notification of Required Personnel. Upon immediate notification of F-16/A-10 gun malfunction, MOC will initiate emergency action checklist to notify applicable respondent agencies and notify Airfield Management Operations to ring out the Secondary Crash Net (SCN). SF will be notified of the IFE through (SCN).

3.5. Initial Gun Safing Procedures. The procedures in AFMAN 91-201, all applicable technical orders, and this instruction will be followed. After aircraft taxis to HCP and points at gun berm, aircraft will be chocked and checked for hot brakes by 2A3/2W1 personnel prior to any other personnel entering the area.

3.6. Specific Unsafe Gun Procedures (Installed in Aircraft). At HCP, as a result of both safe/clear procedures being unsuccessful (A-10) or proper/correct installation of holdback tool cannot be verified (F-16), the gun stoppage supervisor will turn over to Armament Flight and they will be responsible for ensuring safing/clearing operations are followed as outlined in T.O.1A-10C-2-94JG-6, or T.O.1F-16CG-2-94JG-50-1, as applicable. Flightline/armament weapons personnel will work as gun maintenance team (GMT) to determine condition of gun and make decisions throughout all maintenance actions until point is reached that gun is rendered safe. If gun system jam causes a safety issue, AMU weapons will coordinate with Wing Weapons Manager (WWM) for request of OO-ALC/WM Munitions Rapid Response Team (MRRT) at DSN 777-AMMO or 775-AMMO for assistance. PACAF/LGW will be notified at DSN 449-8588 or 448-8589 of the MRRT request.

3.6.1. Prior to continuing operations to safe/clear jammed system, GMT will attempt to determine cause of malfunction. Efforts will first be made to safe/clear jammed system while installed in aircraft. It may be necessary for GMT to remove rounds which could

be in the gun and/or system components. NOTE: In the event broken 20mm/30mm rounds/loose propellant is discovered, GMT will notify incident commander and request EOD. The EOD team will take over control of all operations on the A/C. EOD will apply a non-volatile lubricating fluid to render loose propellant inert and collect as much of the propellant as possible. 51 MUNS will be responsible for storage/security of all loose 20mm/30mm propellant.

3.6.1.1. If jammed/broken rounds cannot be removed, the GMT, IAW applicable technical data, may proceed to disassemble necessary gun system components in an effort to safe/clear the gun.

3.6.1.1.1. Safe 30mm gun (mechanical gun safing pin properly/correctly installed), safe 20mm gun (holdback tool properly/correctly installed) and 20/30mm system components may be transported to Armament Flight maintenance bay (Building 1701) for continued attempts to remove rounds. At no time will an unsafe 20mm/30mm gun be transported to Armament Flight for removal of jammed rounds. In this event, the unsafe 20mm/30mm gun will be worked at the HCP.

3.6.1.1.2. Armament Flight will ensure caution is taken to not exceed 50 lbs of net explosive weight (NEW) for 20mm/30mm HEI rounds (any combination) that come into maintenance bay as a result of a jammed incident (see table below). Max NEW is critical when bringing in a drum containing HEI.

Table 1. Net Explosive Weight Table

One Each:	NEW	Total Rounds Allowed
20mm round (HEI)	.1094 ea	457
20mm round (TP)	.0754 ea	Unlimited (Per AFMAN 91-201)
30mm round (HEI)	.4408 ea	113
30mm round (TP)	.3310 ea	Unlimited (Per AFMAN 91-201)

3.6.1.1.3. If the Armament Flight is unsuccessful in the removal of jammed rounds within 20mm/30mm gun or 20mm/30mm system components, MOC will be notified to request EOD be immediately dispatched to assess the situation. If EOD is unsuccessful in assisting with rounds removal WWM will be notified to contact MRRT.

3.6.1.1.4. Upon MRRT arrival, Armament Flight will assist with rounds removal. If MRRT is unsuccessful in removal of jammed rounds, request direction for proper disposal/destruction of gun and/or system components from MRRT.

3.6.1.1.5. If MRRT determines their presence is not necessary, request direction via telecom for proper disposal/destruction of gun and/or system components from MRRT.

3.6.2. GMT will consider extent of the gun jam and make determination whether or not gun will be removed from the aircraft.

3.6.2.1. If determined gun removal will jeopardize safety of GMT, no attempt will be made to remove the gun. WWM will be notified to contact MRRT.

3.6.2.1.1. A-10/F-16 aircraft will remain secure at HCP (with Perimeter Road remaining closed/blocked for A-10) until MRRT responds and gun is safed/cleared. PACAF/LGW will be notified of MRRT request.

3.6.2.2. If determined gun removal will not jeopardize safety of GMT, gun removal may proceed. After gun removal, GMT, IAW applicable technical data, may proceed to disassemble gun components as necessary to safe/clear gun.

3.7. Specific Unsafe Gun Procedures (Removed from Aircraft). After removal of 20mm/30mm gun from aircraft and gun cannot be safed, the following procedures will be followed:

3.7.1. **(A-10)** for an unsafe GAU-8 gun (due to its hazardous state as a percussion fired system) GMT will determine if gun can be transported to secure location where it can be locked up (i.e. HAS/GEN). Proper/correct installation of mechanical gun safing pin, as validated by gun stoppage supervisor, will be a significant factor in this determination.

3.7.1.1. If mechanical gun safing pin cannot be validated as installed properly/correctly or gun is determined to be unsafe for transport, GAU-8 gun will remain secured at HCP on a maintenance stand until MRRT responds and gun is safed/cleared. Perimeter Road will remain closed/blocked. PACAF/LGW will be notified of the MRRT request.

3.7.2. **(F-16)** For unsafe M61A1 gun (due to being an electrically primed firing system) GMT will determine if gun can be transported to Armament Flight maintenance bay. Proper/correct installation of holdback tool, as validated by gun stoppage supervisor, will be a significant factor in this determination.

3.7.2.1. If holdback tool cannot be validated as installed properly/correctly or gun is determined to be unsafe for transport, M61A1 gun will remain secured at HCP on a maintenance stand until MRRT responds and gun is safed/cleared. PACAF/LGW will be notified of the MRRT request.

3.8. Specific Off-Station Gun Malfunction Procedures.

3.8.1. **(On-Peninsula)** If F-16 gun electrical safing pin and holdback tool or A-10 mechanical gun safing pin can be properly installed and live ammunition can be cleared from A-10 gun, the aircraft may be flown back to home station (with approval from 51 MXG/OG). Upon return to home station, gun will be worked by GMT and all applicable procedures of this instruction will be followed.

3.8.1.1. If F-16 gun electrical safing pin and holdback tool or A-10 mechanical gun safing pin cannot be properly installed or live ammunition cannot be cleared from A-10 gun, respective AMU and Armament Flight personnel will be sent to work gun malfunction. Specific procedures in this instruction will be followed to maximum extent possible. NCO in charge of operations will communicate with AMU leadership, as necessary, for guidance/direction.

3.8.2. **(Deployed)** If 20mm/30mm gun malfunction occurs while deployed, specific procedures in this instruction, as applicable, will be followed to the maximum extent possible. This includes request for EOD support (from nearest USAF EOD unit) and MRRT, as applicable.

4. Impoundment of Aircraft with Hung Ordnance or Gun System Malfunction.

4.1. Hung Ordnance:

4.1.1. Refer to AFI 21-101, *Aircraft and Equipment Maintenance Management* for guidance.

4.2. Gun System Malfunction:

4.2.1. Impound aircraft when there is an uncommanded gun firing/rotation occurrence.

4.2.2. Impound aircraft when item(s) are missing from a damaged gun/gun bay and item(s) cannot be located.

4.2.2.1. Safe gun and system components will be removed, as applicable, and transported to Armament Flight maintenance bay for a thorough search of missing item(s).

4.2.2.2. Establish separate impoundment for gun system if thorough search of aircraft fails to locate missing item(s). AFTO Form 350, *Repairable Item Processing Tag*, bordered in red, will be attached to gun immediately after removal from aircraft.

4.2.2.3. Gun/system components will be disassembled in the Armament Flight maintenance bay to the point necessary to ensure a thorough search for lost item.

4.2.2.4. Gun/system components may be released from impoundment after thorough search and inspection by a 7-Level Armament Flight technician and a Quality Verification Inspection (QVI) performed by a QA inspector.

ANDREW P. HANSEN, 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*, 21 May 2015

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

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

T.O. 1F-16CG-6WC-1-11, *Combined Preflight/Postflight, End-of-Runway, Thruflight, Launch and Recovery, Quick Turnaround, Basic Postflight, and Walkaround Before First Flight of Day Inspection Work cards*, 1 October 2014

T.O. 1A-10C-6WC-1, *Launch, Recovery, Thruflight, Quickturn Inspection Ser No 75-0258 and Subsequent*, 10 August 2014

T.O. 1F-16C-33-1-2CL-100, *Delayed Flight or Alert, Immediately Prior to Launch and Safing*, 1 August 2014

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T.O. 1F-16CG-2-94JG-50-1, *M61A1 Gun System*, 1 November 2014

51FWI 13-204, *Airfield Operations and Local Flying Procedures*, 2 February 2015

UFC 3-260-01, *Airfield and Heliport Planning and Design*, 17 November 2008

AFSC 2W1X1, *Aircraft Armament Systems*, 21 January 2015

Adopted Forms

AF Form 797, *Job Qualification Standard Continuation/Command JQS*

AF Form 847, *Recommendation for Change of Publication*

AFTO Form 350, *Repairable Item Processing Tag*

Abbreviations and Acronyms

AFRIMS—Air Force Records Information Management System

AMU—Aircraft Maintenance Unit

AMXS—Aircraft Maintenance Squadron

ATC—Air Traffic Control

CMA—Controlled Movement Area

CTK—Composite Tool Kit

EOD—Explosive Ordnance Disposal

EOR—End-Of-Runway

FO—Foreign Object
GMT—Gun Maintenance Team
HCP—Hot Cargo Pad
IFE—In-Flight Emergency
IPL—Immediately Prior-to-Launch
MOC—Maintenance Operations Center
MRRT—Munitions Rapid Response Team
NEW—Net Explosive Weight
NLT—No Later Than
OPR—Office of Primary Responsibility
PAS—Protective Aircraft Shelters
RDS—Records Disposition Schedule
SF—Security forces
SCN—Secondary Crash Net
TP—Target Practice
TBA—Training Business Area
WP—White Phosphorous
WWM—Wing Weapons Manager
WS—Weapons Standardization

Attachment 2
FLIGHTLINE MAP

Figure A2.1. Flightline Map



Attachment 3
HOT CARGO PAD (HCP)

Figure A3.1. Hot Cargo Pad (HCP)



Attachment 4
09 EOR

Figure A4.1. 09 EOR



Attachment 5

27 EOR

Figure A5.1. 27 EOR

