*BY ORDER OF THE SECRETARY OF THE AIR FORCE*

*AIR FORCE INSTRUCTION 91-113*

*4 FEBRUARY 1994*

*Safety*

# *SAFETY RULES FOR NON-US NATO STRIKE AIRCRAFT*

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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Supersedes AFR 122-8, 24 January 1992, and
AFR 122-27, 24 January 1992.

Pages: 8
Distribution: F

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This instruction implements AFPD 91-1, *Nuclear Weapons and Systems Surety*. It applies to all operations with Non-US North Atlantic Treaty Organization (NATO) F-16A/B and PA-200 aircraft and nuclear weapons dedicated for use with the aircraft. **Section A** assigns responsibilities and **Section B** contains the nuclear weapon system safety rules for the weapon systems. The safety rules in **Section B** can only be changed or supplemented using procedures in AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules* (formerly AFR 122-2). This instruction does not apply to the Air Force Reserve and Air National Guard.

## *SUMMARY OF REVISIONS*

This is the first issuance of AFI 91-113. The instruction combines safety rules for the NATO F-16A/B and PA-200 aircraft previously in AFRs 122-8 and 122-27. It includes numerous administrative changes to improve readability.

## *Section A—Authority and Responsibilities*

**1. Joint Chiefs of Staff (JCS) Direction.** The JCS directs the Chief of Staff, US Air Force, to implement the rules.

**2. Temporary Limitations.** The Air Force may impose restrictions on application of safety rules.

**3. Functional Responsibilities:**

3.1. The Commander, Air Force Safety Agency must ensure:

- The safety rules work, providing maximum safety consistent with operational requirements.
- Units follow the safety rules.

3.2. Using major commands (MAJCOM) must:

- Ensure their units follow the safety rules.
- Ensure safety standards and procedures agree with the safety rules.
- Inspect for compliance.

3.3. Air Force Materiel Command ensures its manuals, checklists, and technical orders do not conflict with the safety rules.

***Section B—Safety Rules***

**4.** Safety rules always apply, even during war. A commander may deviate from a specific rule in an emergency, but must keep custody of US nuclear weapons until an emergency action message authorizes release. Department of Defense (DoD) Directive 3150.2, *Safety Studies and Reviews of Nuclear Weapon Systems*, February 8, 1984, defines an emergency as an unexpected occurrence or set of unexpected circumstances in which personnel or equipment unavailability, due to accident, natural event or combat may demand immediate action that may require extraordinary measures to protect, handle, service, transport, or employ a nuclear weapon.

**5.** Do not fly the weapon system until authorized.

**6.** These rules, weapon system features, operational controls, and technical procedures, ensure NATO Strike Aircraft meet the Nuclear Weapon System Safety Standards in AFI 91-101, *Air Force Nuclear Weapons Surety Program,* and DoD Directive 3150.2.

**7. Troubleshooting and Using Equipment, Procedures, and Checklists:**

7.1. Do not use nuclear weapons to troubleshoot aircraft faults. Use only equipment and procedures that are consistent with US Air Force-approved publications for nuclear weapons or nuclear weapon systems operations.

7.2. Approved publications must conform with weapon system safety rules and meet the DoD Nuclear Weapon System Safety Standards.

7.3. Do not modify aircraft monitoring and control (AMAC) and suspension or release systems, handling and test equipment, or any aircraft system that affects nuclear surety without US Air Force approval.

**8. Security Criteria.** Allied Command Europe Directive 80-6, volume 2, and US European Command Directive 60-10, *Nuclear Surety Management*, apply.

8.1. SACEUR or USCINCEUR sets security requirements for all nuclear weapon operations. They must be at least equal to US Air Force security directives.

8.2. Individuals performing nuclear weapon operations must:

- Have at least a SECRET clearance granted according to US Air Force or NATO-nation security directives. NATO clearance and investigative requirements must be at least equal to US Air Force requirements.
- Be specifically authorized to perform such operations.

8.3. Set up boundaries for areas where nuclear weapons are located.

8.4. Develop procedures to detect and prevent unauthorized entry to restricted areas.

**9. Tamper Control and Detection.** AFI 91-104, *Nuclear Surety Tamper Control and Detection Programs* (formerly AFR 122-4), defines the Two-Person Concept and sealing requirements.

**9.1. Tamper Control (Two-Person Concept):**

- A two person team, one US and one NATO, must verify the safe position of prearming and release controls and integrity of the seals.
- Verify controls and seals before placing a system on alert.
- Verify controls and seals before and after any person has entered the cockpit alone.

**9.2. Tamper Detection (Sealing).** Authorized user-nation personnel must apply lead seals to designated prearming and release controls. The seals must:

- Have a distinctive marking.
- Provide evidence of tampering or accidental activation.

9.3. The US technical monitor verifies the seals before loading and unloading weapons.

9.4. If seals have been broken or tampered with:

- Authorized personnel immediately inspect the weapon, AMAC, and release systems.
- The US Custodian conducts an investigation using AFI 91-204, *Investigating and Reporting US Air Force Mishaps* (formerly AFR 127-4).

9.5. The user nation controls receipt, storage, issue, and disposal of dies and lead seals.

**10. Handling and Storage of Certified Software.** AFI 91-105, *Critical Components* (formerly AFR 122-17), applies.

**11. Personnel Reliability.** Monitor NATO personnel reliability according to the user nation's personnel reliability program. AFI 36-2104, *Nuclear Weapons Personnel Reliability Program* (formerly AFR 35-99 and AFR 40-925), applies to US personnel.

**12. Weapons Custody:**

12.1. US custodial agents keep nuclear weapons until the Munitions Support Squadron (MUNSS) receives and authenticates an execution message.

12.2. The US custodian is accountable for the weapons.

**13. Basic Weapon Configurations:**

13.1. Verify B61-3, -4, and -10 is safe using applicable technical orders.

**14. Basic Aircraft Configurations.** Place aircraft in the following configurations when nuclear weapons are loaded.

**14.1. PA-200:**

- Control Arm of the Special Weapons Controller (SWC-2) Panel in the OMS (OFF-MONITOR-SAFE) position, safety wired, and sealed.
- Bomb Release Safety Lock/Unlock switch in the LOCK position with switch guard down, safety wired, and sealed.
- Consent/Off switch in OFF position.

**14.2. F-16A/B:**

- Nuclear Consent switch in OFF position with switch guard down, safety wired, and sealed.
- Master Arm switch in OFF position.

**15. Storage, Maintenance, Testing, Ground Transportation, Loading, and Unloading:**

15.1. Store nuclear weapons in US Air Force-approved, locked, and secured facilities.

15.2. See paragraph **13.** for basic weapon configurations.

15.3. Load nuclear weapons only on aircraft certified for the mission to be performed.

15.4. Allow only US Air Force personnel to maintain nuclear weapons.

**16. Logistics Movement of Nuclear Weapons by Cargo Aircraft:**

16.1. Transport nuclear weapons in their basic configurations (paragraph **13.**).

16.2. The aircrew performs or controls all loading, tiedown, and unloading operations.

16.3. The aircrew performs or controls all maintenance activities on a nuclear cargo-loaded aircraft and en route maintenance on a nuclear logistics mission aircraft.

**17. Operations Involving Collocation of Nuclear Weapons and Conventional Munitions.** Collocation is a concept for storing conventional munitions in a Hardened Aircraft Shelter (HAS) during nuclear generation and alert operations.

17.1. Comply with paragraph **18.** if the Weapons Storage and Security System (WS $^{3}$) is being used.

17.2. Do not perform major nuclear weapon maintenance in a HAS containing conventional munitions or an aircraft. (Major maintenance is defined as any activity involving case separation).

17.3. MAJCOM approved plans must authorize collocating nuclear weapons and conventional munitions in a HAS and be approved by the host unit commander. Before bringing nuclear weapons into a HAS containing conventional munitions:

- Fuel and Prepare for loading a mission capable aircraft (see paragraph **20.**).
- Have a qualified load crew or munitions personnel verify that conventional munitions not loaded on the aircraft are safe.
- Ensure the net explosive weight does not exceed 10,000 pounds.

17.4. When a nuclear weapon-loaded aircraft is in a HAS containing conventional munitions conduct:

- Engine runs only when necessary to check aircraft status, perform maintenance, and prepare for authorized flying operations.

- Fueling operations only to maintain the aircraft for its mission requirements.
- All other operations using technical data and only if approved by the US Air Force MUNSS commander.

17.5. Do not conduct engine runs and fueling operations during practice alerts, exercises, evaluations, or inspections.

**18. Operations Involving the WS$^3$.** Comply with these rules when the Weapons Storage Vault (WSV) contains a nuclear weapon or controlled component.

18.1. Do not place conventional munitions within 15 feet of the WSV.

18.2. Perform normal day-to-day aircraft maintenance operations only when the WSV is fully down and locked. (Comply with paragraph **17.** when a nuclear weapon-loaded aircraft is in a HAS containing conventional munitions).

18.3. Before raising the nuclear weapon-loaded WSV:

- Comply with security procedures to protect the nuclear weapons and controlled components.
- Fuel the mission capable aircraft and prepare it for loading (see paragraph **20.**).
- Comply with paragraph **17.**.

18.4. Cease aircraft maintenance operations once the WSV has been opened and the no-lone zone established. Use technical data to perform only those operations approved by the US Air Force MUNSS commander.

18.5. When a nuclear weapon-loaded WSV is not fully down:

- Do not move aircraft into or out of the HAS.
- Move only mission-essential equipment into or out of the HAS.
- Do not perform engine runs, fueling, or liquid oxygen servicing operations.
- Do not perform conventional integrated combat turnaround procedures.
- Comply with **17.**paragraph 17.
- Use technical data to perform only those operations approved by the US Air Force MUNSS commander.

18.6. If a fuel, liquid oxygen, or similar hazardous substance release within the HAS is deemed an emergency, bring the nuclear weapon-loaded WSV to a fully down position until the emergency is terminated by proper authority.

18.7. Do not conduct fuel-cell maintenance operations in a HAS containing a nuclear weapon-loaded WSV.

18.8. Aircraft and associated ground support equipment can remain in the HAS while performing maintenance on the WSV.

18.9. Remove conventional munitions from the HAS before performing any major maintenance on nuclear weapons outside the Transportable Maintenance System.

**19. Onbase Dispersal of Nuclear Weapons.** Units without the WS $^3$:

19.1. Disperse nuclear weapons from weapons storage areas when directed by appropriate authority and according to MAJCOM-approved plans.

19.2. Disperse weapons only to:

- An empty HAS.
- A HAS containing support equipment or war readiness support kits not posing a hazard to the weapons.
- A HAS containing no more than one aircraft (with or without weapons) parked nose out. (Only minor maintenance, of the type authorized on nuclear weapon-loaded aircraft, is permitted in the HAS).
- An empty bay of a semihardened fuel truck shelter (FTS). For a double-bay FTS, a fuel truck may be housed in the adjacent bay. Do not store nuclear weapons and fuel trucks in the same bay.

19.3. Do not use nuclear weapons for onbase dispersal training, practice alerts, exercises, inspections, or evaluations.

**20. Ground Operations Involving Nuclear Weapon-Loaded Aircraft:**

20.1. Apply power to a loaded nuclear weapon only for authorized permissive action link (PAL) operations or to monitor the weapon. Keep weapon monitoring to a minimum.

20.2. Apply power to a nuclear weapon-loaded aircraft only to:

- Perform maintenance.
- Perform authorized preflight operations.
- Start the engine or engines.
- Warm up equipment.
- Monitor the radio.
- Perform authorized PAL operations.

20.3. Keep aircraft towing to a minimum.

**20.3.1. PA-200.** Two qualified and authorized individuals must be in the cockpit during towing.

**20.3.2. F-16A/B.** A qualified and authorized individual must be in the cockpit.

20.3.3. Have a Two-Person Concept team verify the basic aircraft configuration when towing is complete.

20.4. Use a physical barrier to prevent an unauthorized takeoff during engine runup.

**20.4.1. PA-200.** Allow only authorized aircrews to perform engine runup.

**20.4.2. F-16A/B.** Allow only an authorized pilot to perform engine runup.

20.4.3. Have a Two-Person Concept team verify the basic aircraft configuration following engine runup.

20.5. Run the engine or engines only if necessary to:

- Check aircraft status.

- Perform maintenance.
- Prepare for authorized flying operations.
- Conduct practice alerts, exercises, evaluations, or inspections (except as restricted when conventional munitions are collocated in a HAS).

20.6. Do not move a nuclear weapon-loaded aircraft under its own power unless:

- An execution message from SACEUR or USCINCEUR has been received and authenticated.
- Necessary to preserve the safety of the weapon system.

20.7. Fuel the aircraft only to maintain its mission requirements.

**21. Flying Operations Involving Carriage of Nuclear Weapons in a Nonstrike Configuration.** Conduct only when directed by a SACEUR or USCINCEUR execution message that is received and authenticated.

21.1. Put nuclear weapons in their basic configurations ( paragraph **13.**).

21.2. Do not make mechanical and electrical pullout connections between the weapons and the aircraft.

**21.3. PA-200.** Break safety wires and operate locking and release system controls using approved checklists when weapon jettison is authorized.

**21.4. F-16A/B.** Break safety wires on the Nuclear Consent Switch and operate locking and release system controls when weapon jettison is authorized.

21.5. Avoid populated areas on all flight routes to the maximum extent possible.

**22. Flying Operations Involving Carriage of Nuclear Weapons in a Strike Configuration:**

22.1. Conduct only when directed by appropriate authority.

**22.2. PA-200:**

22.2.1. Break safety wires and operate controls using approved checklists when prearming and release of nuclear weapons are authorized.

22.2.2. Break safety wires and operate locking and release system controls according to approved checklists when weapon jettison is authorized.

**22.3. F-16A/B:**

22.3.1. Break safety wires on the Nuclear Consent Switch and operate controls using approved checklists when prearming and release of nuclear weapons are authorized.

22.3.2. Break safety wires on the Nuclear Consent Switch and operate locking and release system controls using approved checklists when weapon jettison is authorized.

22.4. Avoid populated areas on all flight routes to the maximum extent possible.

**23. Operations Involving the Lateral Dispersal of Nuclear Weapons for Survival.** Lateral dispersal is a wartime contingency movement of nuclear weapons by ground or air transportation from the main operating base to a dispersed operating location (DOL) and subsequent alert operations.

23.1. Use appropriate technical orders to prepare for subsequent alert operations when aircraft and nuclear weapons arrive at the DOL.Paragraph **17.** and paragraph **20.** also apply.

23.2. Position nuclear weapon-loaded aircraft in a HAS or alternative shelter according to MAJCOM-approved plans.

23.3. Do not use nuclear weapons for lateral dispersal training, exercises, inspections, or evaluations.

**24. PAL Procedures.** Use PAL codes and PAL devices only as directed by appropriate authority.

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