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Maintenance

**HANGAR LAUNCHER/RECOVERY  
PROCEDURES**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements procedures and requirements for the timely and safe hangar launch of all 89th Airlift Wing (89 AW) aircraft from any hangar with the exception of the 1st Helicopter Squadron and the Presidential Airlift Group. It applies to maintenance and aircrew personnel involved with preflight, hangar departure and hangar recovery. Additional aircrew guidance for hangar departures is outlined in the aircraft specific flight operation manuals.

**SUMMARY OF REVISIONS**

**This document is substantially revised and must be completely reviewed.**

Revisions in Air Force Occupational Safety and Hazard Standard (AFOSH) and aircraft maintenance requirements have been incorporated throughout this instruction. **The bar ( | ) next to the title indicates a title change since the last edition.**

**1. General.** This instruction is mandatory for all hangar departures/recoveries. 89 OG/CC and 89 MXG/CC determine whether to launch/recover an aircraft from a hangar or from the flight line.

**2. Hangar Launch Responsibilities.**

**2.1. Production Supervisor (SAM 4) will:**

- 2.1.1. Assign a launch supervisor to coordinate all manning requirements and responsibilities in this instruction.
- 2.1.2. Ensure all fuel, water and lavatory servicing requirements are complied with prior to the applicable crew show time.
- 2.1.3. Launch supervisor will interface directly with the aircraft commander to ensure all requirements and associated details are discussed and properly coordinated.

2.1.3.1. Ensure all out-of-hangar aircraft communication system check requirements are coordinated with the aircrew and be accomplished early in the launch sequence to allow the aircraft time to thaw and maintenance time to remove any associated slip hazards.

2.1.3.1.1. **NOTE:** Aircraft high frequency (HF) radios will not be transmitted in the hangar. HF radio transmissions inside the hangar may cause inadvertent discharge of the hangar fire suppression system.

2.1.3.2. Discuss all aircraft towing procedures with the pilot, including the tow route, signals and timing for ground power removal and engine start. Ground to cockpit communication must be established with ground interphone connection.

2.1.3.2.1. Aircraft engines may be started after 25-foot clearance from hangar. Aircraft may be pushed back with engines running to support non-routine or abnormal operational requirements. These pushback procedures will be supported by engineering analysis, published in the operations manual and AFOSH 91-100.

2.1.3.2.2. Only the aircrew will operate the auxiliary power unit (APU) (C-32A/C-40B only) in the hangar and only after the primary distinguished visitor (DV) has arrived at the aircraft. Ensure the tail door is open prior to start. APU exhaust will be no more than 3 feet forward of the safety walkway.

2.1.4. Enforce all AFOSH standards during tow operations. Wing and tail walkers will be utilized.

2.1.5. During winter/freezing conditions, pre-coordinate disabling of the hangar deluge system in the applicable hangar with the fire department in order to prevent the system from inadvertently going off due to a rapid change in temperature.

2.1.5.1. **NOTE:** The hangar fire suppression system reacts to any significant/rapid change in temperature, including warm to cold and should be disabled by the fire department whenever the outside temperature is below freezing.

2.1.6. Ensure all required support equipment and qualified personnel are properly configured and pre-positioned to provide immediate response.

2.1.6.1. Fire bottles, power units and start carts will be immediately available, but specifically positioned to avoid creating a hazard during the aircraft towing process.

2.1.6.2. Additional tow vehicles to move auxiliary ground equipment or open hangar doors will be pre-positioned to respond to potential hangar door motor failures.

2.1.6.3. Manned deicers/fluid retrievers will be standing by to deice aircraft as required.

2.1.6.4. Key maintenance personnel requirements:

2.1.6.4.1. Production supervisor (SAM 4).

2.1.6.4.2. Launch/recovery supervisor (wearing an orange concurrent servicing supervisor vest).

2.1.6.4.3. Tow vehicle operator.

2.1.6.4.4. Wing and tail walkers.

2.1.6.4.4.1. If aircraft is to taxi across the fire lane, wing walkers will also stop traffic in the fire lane.

2.1.6.4.5. Fire bottle monitor.

2.1.6.4.6. Hangar door operators.

2.1.6.4.6.1. **NOTE:** Hangar doors will not be left open for extended periods of time in order to prevent the accumulation of moisture or ice on the aircraft or hangar floor. Maintenance personnel will be responsible for the removal of moisture or other slip hazards from the hangar floor.

2.1.6.4.7. All applicable launch coverage personnel.

2.1.6.4.7.1. Federal Aviation Administration (FAA) licensed airframe and powerplant (A&P) mechanics (VIPER 3/VIPER 4).

2.1.6.4.7.2. Avionics technicians (VIPER 6).

2.1.6.4.7.3. Fuel cell (MAINTENANCE 8).

2.1.6.4.7.4. Sheet metal (MAINTENANCE 4).

## 2.2. Aircraft Commander will:

2.2.1. The aircraft commander will coordinate towing, ground power removal signals and engine start procedures with maintenance prior to DV arrival. Engine start and APU procedures must be in accordance with paragraphs [2.1.3.2.1](#) and [2.1.3.2.2](#) of this instruction.

2.2.2. Early coordination with maintenance is necessary if the aircraft commander determines a communication system transmission check is required. This will allow the aircraft adequate time to thaw and maintenance time to remove any slip hazards from the floor prior to passenger arrival.

## 3. Hangar Recovery Procedures.

### 3.1. SAM 4 will:

3.1.1. Pre-plan and coordinate all maintenance requirements and responsibilities in this instruction.

3.1.2. Contact the maintenance operation center to confirm the actual arrival time of the returning mission aircraft and to pre-coordinate the arrival taxi route, engine shutdown location hangar recovery procedures and assign a recovery supervisor.

3.1.3. Ensure all required support equipment is properly configured and pre-positioned to permit immediate responsiveness.

3.1.3.1. A hangar power cart will be available for immediate hookup once the aircraft has been repositioned inside the hangar.

3.1.4. Enforce all applicable AFOSH standards during the recovery and towing operations. Road guards, wing and tail walkers will be utilized.

3.1.5. Ensure the hangar doors and tail doors are opened to provide safe clearances and the hangar fire suppression system is deactivated by the fire department if conditions dictate (see paragraph [2.1.5](#)).

### 3.2. Aircraft Commander will:

3.2.1. An aircraft marshaller will direct the aircraft to a recovery spot on the ramp adjacent to the recovery hangar. Road guards and wing walkers will be provided as necessary.

3.2.2. Upon engine shutdown, maintenance will immediately start the tow process to reposition the aircraft into the hangar as safely and expeditiously as possible.

3.2.2.1. **NOTE:** The aircraft APU must be shut down prior to the aircraft entering the hangar (except C-32A/C-40B) which must be stopped in hangar with the APU no more that 3 feet forward of the safety walkway).

DAVID S. GRAY, Brigadier General, USAF  
Commander

**Attachment 1**

**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION**

***References***

AFOOSH 91-100, *Aircraft Flight Line – Ground Operations and Activities*

***Abbreviations and Acronyms***

**AFOOSH**—Air Force Occupational Safety and Hazard Standard

**APU**—Auxiliary power unit

**A&P**—Licensed Airframe and Powerplant Mechanic

**ASD** —Andrews support division

**DV**—distinguished visitor

**89 AW**—89th Airlift Wing

**FAA**—Federal Aviation Administration

**HF**—high frequency

**MXG/CC**—maintenance group commander

**OG/CC**—operations group commander

**SAM 4**—ASD production supervisor