

**BY ORDER OF THE COMMANDER
GRAND FORKS AIR FORCE BASE**

**GRAND FORKS AIR FORCE BASE
INSTRUCTION 21-108**

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Maintenance

OPERATION OF HANGAR DOORS



COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Air Force Occupational Safety and Health Standard (AFOSHSTD) 91-501, *Air Force Consolidated Occupational Safety Standard*, AFOSHSTD 91-100, *Aircraft Flight Line-Ground Operations and Activities*, and Air Force Instruction (AFI) 21-101, *Aerospace Equipment Maintenance Management*, outlining responsibilities, procedures, and operating instructions for safe operation of hangar doors in Buildings 649 (3 bay hangars), 601/603,605 (69 RG), 600/602 (Nose Docks), 523 (LGTX hangar), and 520/521 (CE hangars). This instruction is the source document for qualifying personnel to operate hangar doors and is applicable to all units and personnel assigned to or attached to the 319th Air Base Wing.

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 with the Air Force Records Information Management System (AFRIMS). 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 Form 847s from the field through the appropriate functional's chain of command.

- | | | |
|----|-------------------------|---|
| 1. | Responsibilities: | 2 |
| 2. | Training: | 3 |

3.	Documentation:	4
4.	Reporting Requirements:	4
5.	Normal Procedures:	4
6.	Cold Weather Procedures:	5
Attachment 1—GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION		7
Attachment 2—HANGAR 649 DOOR OPERATING INSTRUCTIONS		8
Attachment 3—HANGAR 601/603 DOOR OPERATING INSTRUCTIONS		10
Attachment 4—HANGAR 605 DOOR OPERATING INSTRUCTIONS		12
Attachment 5—HANGAR 600, 602, AND 613 DOOR OPERATING INSTRUCTIONS		14
Attachment 6—CE HANGAR 520/521 DOOR OPERATING INSTRUCTIONS		16
Attachment 7—HANGAR 649 MANUAL DOOR OPERATING PROCEDURES		17
Attachment 8—HANGAR 601/603 MANUAL DOOR OPERATING PROCEDURES		19
Attachment 9—HANGAR 605 MANUAL DOOR OPERATING PROCEDURES		21
Attachment 10—HANGAR 600, 602, AND 613 MANUAL DOOR OPERATING PROCEDURES		23

1. Responsibilities:

1.1. Commanders, section chiefs and supervisors will ensure compliance with this instruction and the application of the basic tenets of Operational Risk Management (ORM) at all levels in the execution of all prescribed procedures. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate.

1.1.1. Only personnel trained, certified, and authorized by unit commanders, in accordance with this instruction, are authorized to operate hangar doors and train others. All personnel, regardless of AFSC, who work in hangar facilities but do not operate electrical or manual doors, are required to attend awareness training conducted by each squadron's designated representative. All hangar door and hangar door awareness training will be accomplished in accordance with the applicable lesson plans.

1.1.2. Civil Engineer Squadron (CES) will develop and maintain a local training plan for their specific hangars (520/521) and forward to 319 OSS/QAE.

1.2. Building custodians are responsible for the following:

1.2.1. Maintain the door operating instructions using current attachments to this instruction.

1.2.2. Post a current set of door operating instructions by each door's control switch.

1.2.3. Maintain legible identification stencils for direction of travel for all door control switches.

- 1.2.4. Stencil cold weather procedures/warnings/placards on hangar doors to ensure doors are not left open to expose hangar infrastructure to freezing conditions.
- 1.2.5. Paint a nose wheel stop line inside the hangar perpendicular to the nose wheel guideline to indicate the mandatory stop position where the aircraft is to be parked.
- 1.2.6. Maintain floor markings for a minimum 10-foot hangar door opening distance.
- 1.2.7. Monitor status of the doors and manage CE work orders for required maintenance. Assign an urgent priority to all work orders that affect safety or normal door operation. Immediately notify Wing Ground Safety Office for assignment of Risk Assessment Code (RAC).
- 1.2.8. Notify CP (747-6711), MOC (747-6750), CE (747-4028), Ground Safety (747-3842), and Fire Department (747-6304) of any door malfunction that causes lock-out/tag-out procedures to be initiated. Building custodians will place an AF Form 981 "OUT OF ORDER" tag as close to the control mechanism or switch as possible and notify all facility users. Only CE personnel and designated contractors will install and remove lock-out/tag-out devices. Doors that can be moved manually will be identified as such on the tag. CE will maintain a lock-out/tag-out logbook.
- 1.2.9. Building custodians will advise the Command Post and MOC of any hangar door maintenance during normal duty hours. Command Post or MOC will coordinate all hangar door maintenance after normal duty hours.
- 1.2.10. Building custodians are responsible for keeping door tracks clean and free of debris, ice, snow, and other objects that may hinder door movement.

2. Training:

- 2.1. Hangar Door Training is broken down into two categories: Hangar Door Awareness Training and Hangar Door Operation Qualification Training.
 - 2.1.1. Hangar Door Awareness Training – For personnel who work in hangar facilities, but who are not required to operate hangar doors. As a minimum, awareness training will be a one time requirement and will include hangar door hazards, emergency procedures and hangar cold weather procedures.
 - 2.1.2. Hangar Door Operation Qualification Training – For all personnel who operate hangar doors. As a minimum, operation training will be a one time requirement and include hangar door hazards, emergency procedures, hangar cold weather procedures and hangar door operations. This training satisfies the requirements of Hangar Door Awareness Training.
 - 2.1.3. Manual door operation is only authorized if the following precautions are observed:
 - 2.1.3.1. Only doors that are rendered safe by lock-out/tag-out procedures and specifically identified on the Warning Tag that manual operation is authorized shall be operated manually.
 - 2.1.3.2. Personnel authorized to perform lock-out/tag-out procedures must ensure that the door motor clutch is disengaged as part of their lockout procedures before authorizing manual control.

2.1.3.3. CE will be the only personnel authorized to open a malfunctioning hangar door by other than manual means (i.e., tow vehicle or truck). For emergency response, Maintenance Production Superintendent (ACC) or 319 OSS/QAE (T/A) must authorize and oversee the movement.

2.2. Hangar Door Awareness Training and Hangar Door Operation Qualification Training will be accomplished in accordance with the applicable lesson plans.

2.2.1. Hangar door training will be accomplished within 90 days of an individual's arrival to his or her work center.

3. Documentation:

3.1. Document initial hangar door training on AF Form 55, **Employee Safety and Health Record**.

3.2. Personnel not tracked in G081 or IMDS may document hangar door training on AF Form 797 and/or AF Form 55.

4. Reporting Requirements:

4.1. Civil Engineer Squadron will brief hangar door discrepancies, repair status and get-well date of inoperable door systems to the wing commander on a monthly basis.

4.2. Hangar facility managers will brief hangar door discrepancies, repair status and get-well date of inoperable door systems and any open AF Form 332's to the their commanders during the monthly staff meeting.

5. Normal Procedures:

5.1. This instruction contains all steps necessary for safe operation of designated hangar doors. Each hangar has a separate and individual instruction for the operation of its doors. These instructions are attached to this instruction and will be posted on the hangar doors for the operator's use. Hangar door training and operation will be performed in accordance with **Attachment 2** for Building 649, **Attachment 3** for Buildings 601/603, **Attachment 4** for Building 605, **Attachment 5** for Buildings 600, 602, and 613, and **Attachment 6** for CE hangars 520/521. Manual door operation will be performed in accordance with **Attachment 7** for Building 649, **Attachment 8** for Buildings 601/603, **Attachment 9** for Building 605, **Attachment 10** for Buildings 600, 602, and 613.

5.2. Each user will be responsible for opening/closing hangar doors to meet their own requirements. **WARNING: FAILURE TO PROPERLY COMPLY WITH THESE INSTRUCTIONS CAN CAUSE DAMAGE TO EQUIPMENT OR PERSONAL INJURY. WARNING: FOR SAFETY OF PERSONNEL, HANGAR DOOR OPENING WILL BE A MINIMUM OF 10 FEET.**

5.3. The main hangar doors will not be utilized for entry/exit of vehicles and equipment that can be safely moved through the service roll-up doors.

5.4. Manual door operation is only authorized if the following precautions are observed:

5.4.1. Only doors that are rendered safe by lock-out/tag-out procedures and specifically identified on the danger tag that manual operation is authorized shall be operated manually.

5.4.2. Personnel authorized to perform lock-out/tag-out procedures must ensure that the door motor clutch is disengaged as part of their lockout procedures before authorizing manual control.

5.4.3. If a malfunctioning door is to be moved by tow vehicle or truck, a Maintenance Production Superintendent (ACC) or 319 OSS/QAE (T/A) must authorize and oversee the movement.

5.5. When severe weather threatens (lightning within 5 miles or winds exceeding 35 knots), MOC personnel will notify production supervisors who will ensure their respective hangar doors are closed.

5.6. All hangar doors should be kept closed whenever possible. A minimum opening clearance of 10 feet is required if left open for any reason.

5.7. Hangar doors will require lock-out/tag-out of controls to prevent operation if safety equipment (such as alarms, interlock switches, etc.) are non-operational. A two-man concept may be used for a work-around if safety equipment is non-operational until discrepancies are corrected.

6. Cold Weather Procedures:

6.1. When the ambient air temperature is 32 degrees Fahrenheit (0 degrees Celsius) or below, the following precautions apply in addition to those covered in the normal procedures. **WARNING: DURING FREEZING WEATHER, HANGAR DOORS ARE NOT TO BE LEFT OPEN. EXPOSING HANGAR INFRASTRUCTURE TO FREEZING CONDITIONS WILL CAUSE EXTENSIVE HANGAR DAMAGE.**

6.1.1. Ensure increased emphasis and attention by flight line expeditors, production supervisors, maintenance operations, facility managers and occupants.

6.1.2. Hangar doors will be kept closed until the aircraft or equipment has reached the hangar and will only be opened when the aircraft or equipment is positioned for entry or exit, and closed immediately thereafter.

6.1.3. Brief all appropriate personnel on use of proper hangar door procedures to safeguard hangar conditions during cold weather.

6.1.4. Before opening or closing hangar doors, ensure the door tracks are clean and free of debris, ice, snow, and other objects that may hinder door movement.

6.1.5. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving doors.

6.2. Because of the possibility of extensive hangar infrastructure damage in freezing weather, lock-out/tag-out procedures may be modified under these circumstances to accommodate the most expeditious closing of the doors.

6.2.1. Maintenance Production Superintendent (ACC) or 319 OSS/QAE (T/A) must authorize and oversee the movement and verify that the door motor clutch is disengaged before proceeding.

6.2.2. Once the doors are closed, and hangar infrastructure damage mitigated, lock-out/tag-out procedures must be immediately completed.

6.2.3. Notify MOC or CP and initiate an emergency work order with CES to have the malfunctioning door repaired.

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Commander, 319th Air Base Wing

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

AFMAN 33-363, *Management of Records*, 01 March 2008

Prescribed and Adopted Forms

Prescribed Forms: There are no forms prescribed by this publication.

Adopted Forms: AF Form 847, *Recommendation for Change of Publication*.

Abbreviations and Acronyms

AF—Air Force

AFB—Air Force Base

AMC—Air Mobility Command

AMCI—Air Mobility Command Instruction

IMT—Information Management Tool (IMT has been converted to Form)

MOC—Maintenance Operations Center

OPR—Office of Primary Responsibility

RDS—Records Disposition Schedule

Terms

Accountable Forms—Forms that the Air Force stringently controls and which cannot be released to unauthorized personnel, since their misuse could jeopardize DOD security or result in fraudulent financial gain or claims against the government.

Administrative Change—Change that does not affect the subject matter content, authority, purpose, application, and/or implementation of the publication (e.g., changing the POC name, office symbol(s), fixing misspellings, etc.).

Approval Authority—Senior leader responsible for contributing to and implementing policies and guidance/procedures pertaining to his/her functional area(s) (e.g., heads of functional two-letter offices).

Authentication—Required element to verify approval of the publication; the approval official applies his/her signature block to authenticate the publication. The signature block includes the official's name, rank, and title (not signature).

Attachment 2**HANGAR 649 DOOR OPERATING INSTRUCTIONS**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

1. PREPARING TO OPEN AIRCRAFT HANGAR DOORS: Accomplish the following prior to moving hangar doors:

1.1. Verify all door electrical power disconnects are on. Door power disconnects are located near each main hangar door control panel and tail door control panel on the west side of bays.

1.2. Inspect the door tracks (upper and lower) for obstructions, debris, and foreign objects.

1.3. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving doors.

1.4. Make certain all emergency exit (personnel) doors are fully closed.

1.5. Check that personnel and equipment are clear of the door's path, including the door recesses.

2. OPENING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 above are performed, proceed as follows:

WARNING:

TAIL DOOR MUST BE OPENED PRIOR TO OPERATING MAIN HANGAR DOORS.

CAUTION:

WHEN MAIN HANGAR DOORS ARE TO BE OPENED FOR OTHER THAN AIRCRAFT, OPEN TAIL DOOR A MINIMUM OF 3 FEET, THEN OPEN MAIN DOORS AS NEEDED MAINTAINING A MINIMUM OF 10 FEET.

2.1. Turn main hangar door well lighting on.

WARNING:

STOP OPERATION IF HORN DOES NOT SOUND! YOU MAY USE "TWO MAN" CONCEPT AND PROCEED WITH CAUTION.

ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR MOC IS NOTIFIED OF ANY MALFUNCTION

2.2. Depress tail door open button on tail door control panel. Allow door to open fully or press the stop button when door reaches a minimum opening of 3 feet for other than aircraft use.

2.3. Depress and hold main door open button on main door control panel (warning horn sounds for 5 seconds before door moves). Allow doors to open to the wing tip clearance mark on the hangar floor or stop as needed, maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

3. CLOSING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

3.1. Turn main hangar door well lighting on.

WARNING:

**STOP OPERATION IF HORN DOES NOT SOUND! YOU MAY USE “TWO MAN”
CONCEPT AND PROCEED WITH CAUTION.**

**ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR
MOC IS NOTIFIED OF ANY MALFUNCTION.**

3.2. Depress and hold both main door close buttons on main door control panel (warning horn sounds for 5 seconds before door moves). Allow doors to fully close or stop as needed, maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

3.3. Depress tail door close button on tail door control panel. Allow door to close fully or press the stop button when door reaches a minimum opening of 3 feet for other than aircraft use.

Attachment 3**HANGAR 601/603 DOOR OPERATING INSTRUCTIONS**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

1. PREPARING TO OPEN AIRCRAFT HANGAR DOORS: Accomplish the following prior to moving hangar doors:

- 1.1. Verify all door electrical power disconnects are on. Door power disconnects are located near each main hangar door control panel and tail door control panel on the east side of bays.
- 1.2. Inspect the door tracks (upper and lower) for obstructions, debris, and foreign objects.
- 1.3. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving doors.
- 1.4. Make certain all emergency exit (personnel) doors are fully closed.
- 1.5. Check that personnel and equipment are clear of the door's path, including the door recesses.

2. OPENING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 above are performed, proceed as follows:

WARNING:

MAIN DOORS MUST BE OPENED PRIOR TO OPERATING TAIL DOOR.

CAUTION:

WHEN MAIN HANGAR DOORS ARE TO BE OPENED FOR OTHER THAN AIRCRAFT, OPEN EACH MAIN DOOR A MINIMUM OF 10 FEET, THEN OPEN TAIL DOOR AS NEEDED MAINTAINING A MINIMUM OF 3 FEET TO PREVENT DAMAGE TO THE TAIL DOOR.

WARNING:

STOP OPERATION IF HORN DOES NOT SOUND! YOU MAY USE "TWO MAN" CONCEPT AND PROCEED WITH CAUTION.

ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR MOC IS NOTIFIED OF ANY MALFUNCTION.

2.1. Depress and hold main door open button on main door control panel (warning horn sounds for 5 seconds before door moves). Allow doors to open to the wingtip clearance mark on the hangar floor or stop as needed, maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

2.2. Depress and hold the tail door open button on tail door control panel. Allow the door to open fully or release the open button when the door reaches a minimum opening of 3 feet for other than aircraft use.

3. CLOSING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

WARNING:

**STOP OPERATION IF HORN DOES NOT SOUND! YOU MAY USE “TWO MAN”
CONCEPT AND PROCEED WITH CAUTION.**

**ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR
MOC IS NOTIFIED OF ANY MALFUNCTION.**

3.1. Depress and hold the tail door close button on the tail door control panel. Allow the door to fully close or release the stop button when the door reaches a minimum opening of 3 feet for other than aircraft use.

3.2. Depress and hold both main door close buttons on main door control panel (warning horn sounds for 5 seconds before door moves). Allow doors to fully close or stop as needed, maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

Attachment 4**HANGAR 605 DOOR OPERATING INSTRUCTIONS**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

1. PREPARING TO OPEN AIRCRAFT HANGAR DOORS: Accomplish the following prior to moving hangar doors:

1.1. Verify all door electrical power disconnects are on. Door power disconnects are located near each main hangar door control panel and tail door control panel on the west side of bays.

1.2. Inspect the door tracks (upper and lower) for obstructions, debris, and foreign objects.

1.3. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving doors.

1.4. Make certain all emergency exit (personnel) doors are fully closed.

1.5. Check that personnel and equipment are clear of the door's path, including the door recesses.

2. OPENING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 above are performed, proceed as follows:

WARNING:

TAIL DOOR MUST BE FULLY OPENED PRIOR TO OPERATING MAIN HANGAR DOORS.

CAUTION:

WHEN MAIN HANGAR DOORS ARE TO BE OPENED FOR OTHER THAN AIRCRAFT, THE TAIL DOOR MUST BE FULLY OPENED. OPEN MAIN DOORS AS NEEDED MAINTAINING A MINIMUM OF 10 FEET.

WARNING:

STOP OPERATION IF HORN DOES NOT SOUND! YOU MAY USE "TWO MAN" CONCEPT AND PROCEED WITH CAUTION.

ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR MOC IS NOTIFIED OF ANY MALFUNCTION.

2.1. Depress tail door open button on tail door control panel (warning horn sounds). Allow door to fully open.

2.2. Depress and hold main door open button on main door control panel (warning horn sounds for 5 seconds before door moves). Allow doors to open to the wing tip clearance mark on the hangar floor or stop as needed, maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

3. CLOSING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

WARNING:

**STOP OPERATION IF HORN DOES NOT SOUND! YOU MAY USE “TWO MAN”
CONCEPT AND PROCEED WITH CAUTION.**

**ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR
MOC IS NOTIFIED OF ANY MALFUNCTION.**

3.1. Depress and hold both main door close buttons on main door control panel (warning horn sounds for 5 seconds before door moves). Allow doors to fully close or stop as needed, maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

3.2. Depress tail door close button on tail door control panel (horn sounds). Allow door to fully close.

Attachment 5**HANGAR 600, 602, AND 613 DOOR OPERATING INSTRUCTIONS**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

1. PREPARING TO OPEN AIRCRAFT HANGAR DOORS: Accomplish the following prior to moving hangar doors:

1.1. Verify all door electrical power disconnects are on. Door power disconnects are located near each main hangar door control panel.

1.2. Inspect the door tracks (upper and lower) for obstructions, debris, and foreign objects.

1.3. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving doors.

1.4. Make certain all emergency exit (personnel) doors are fully closed and clamshell (fuselage cutout) doors are latched securely either in the open (aircraft in hangar) or closed position.

1.5. Check that personnel and equipment are clear of the door's path, including the door recesses.

2. OPENING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 above are performed, proceed as follows:

CAUTION:

WHEN MAIN HANGAR DOORS ARE TO BE OPENED FOR OTHER THAN AIRCRAFT OPEN MAIN DOORS AS NEEDED MAINTAINING A MINIMUM OF 10 FEET.

WARNING:

STOP OPERATION IF HORN DOES NOT SOUND! YOU MAY USE "TWO MAN" CONCEPT AND PROCEED WITH CAUTION.

ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR MOC IS NOTIFIED OF ANY MALFUNCTION.

2.1. Depress and hold top main door open button on main door control panel (warning horn sounds for 5 seconds before door moves). Allow doors to open to the wing tip clearance mark on the hangar floor or stop as needed, maintaining a minimum of 10 feet clearance (minimum 10

feet marked on hangar floor) when doors are to be opened for other than aircraft use.

3. CLOSING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

WARNING:

**STOP OPERATION IF HORN DOES NOT SOUND! YOU MAY USE “TWO MAN”
CONCEPT AND PROCEED WITH CAUTION.**

**ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR
MOC IS NOTIFIED OF ANY MALFUNCTION.**

WARNING:

**TO PRECLUDE HITTING THE AIRCRAFT FUSELAGE, CLAMSHELL DOORS
MUST BE OPENED AND LATCHED WHEN AIRCRAFT ARE PRESENT.**

3.1. Depress and hold bottom main door close button on main door control panel (warning horn sounds for 5 seconds before door moves). Stop doors at least 10 feet away from aircraft fuselage and open the fuselage clamshell doors if an aircraft is in the hangar. Allow doors to fully close while monitoring clearances between hangar doors and aircraft or stop as needed, maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

Attachment 6**CE HANGAR 520/521 DOOR OPERATING INSTRUCTIONS**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction and established CE Squadron policies. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

WARNING:

IN CASE OF MECHANICAL MALFUNCTION, DOORS WILL NOT BE OPERATED UNTIL REPAIRED. NO MANUAL OPERATION OF DOORS WILL TAKE PLACE.

1. PREPARING TO OPEN HANGAR DOOR: Accomplish the following prior to moving hangar doors:

- 1.1. Inspect the door tracks for obstructions, debris, and foreign objects.
- 1.2. Check that personnel and equipment are clear of the door's path. Ensure a minimum of 50 feet outside clearance.
- 1.3. Ensure the personnel door is closed prior to lifting the hangar door.

2. OPENING HANGAR DOOR: After preparation steps in paragraph 1 above are performed, proceed as follows:

- 2.1. Depress and hold the (open assist) button and the door will automatically open, causing the bell to go off. **If a problem occurs, release button and door will stop.**

WARNING:

STOP OPERATION IF BELL DOES NOT SOUND! ENSURE BUILDING CUSTODIAN, PRODUCTION SUPERINTENDENT, AND/OR MOC IS NOTIFIED OF ANY MALFUNCTION.

3. CLOSING HANGAR DOORS: Repeat preparation steps as stated in paragraph 1 above and proceed as follows:

- 3.1. Depress and hold door close button (bell sounds for 5 seconds) allowing doors to close.

Attachment 7**HANGAR 649 MANUAL DOOR OPERATING PROCEDURES**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

1. PREPARING TO MOVE HANGAR DOORS: Accomplish the following prior to moving hangar doors:

- 1.1. Verify all door electrical power disconnects are off. Door power disconnects are located near each main hangar door control panel and tail door control panel on the west side of bays.
- 1.2. Open the drive motor access panel on the main doors. Place the brake lever on the backside of the drive motor to the vertical position to disengage the clutch.

WARNING:

TAIL DOOR MUST BE OPENED PRIOR TO OPERATING MAIN HANGAR DOORS.

- 1.3. Climb the ladder (located on west end of hangar) to the top catwalk. Disengage the motor clutch drive and pull the tail door chain hand-over-hand until the door is fully opened or a minimum of 3 feet for other than aircraft use.
- 1.4. Inspect the door tracks (upper and lower) for obstructions, debris, and foreign objects.
- 1.5. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving doors.
- 1.6. Make certain all emergency exit (personnel) doors are fully closed.
- 1.7. Check that personnel and equipment are clear of the door's path, including the door recesses.

2. OPENING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

CAUTION: WHEN MAIN HANGAR DOORS ARE TO BE OPENED FOR OTHER THAN AIRCRAFT, OPEN TAIL DOOR A MINIMUM OF 3 FEET THEN OPEN MAIN DOORS AS NEEDED MAINTAINING A MINIMUM OF 10 FEET.

CAUTION: WITH MAIN DOOR CLUTCHES DISENGAGED, THE DOOR BRAKES WILL BE INOPERATIVE. USE EXTREME CAUTION WHEN APPROACHING AIRCRAFT OR HANGAR DOOR STOPS. DO NOT EXCEED 1/2 WALKING SPEED.

- 2.1. If moving the hangar door with a UKE, push or pull the door (1/2 walking speed maximum) to the desired position while maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.
- 2.2. Open the drive motor access panel on the main doors. Reengage the brake lever on the backside of drive motor.
- 3. CLOSING AIRCRAFT HANGAR DOORS:** After preparation steps in paragraph 1 are performed, proceed as follows:

CAUTION: WHEN MAIN HANGAR DOORS HAVE BEEN OPENED FOR OTHER THAN AIRCRAFT, CLOSE MAIN DOORS AS NEEDED, MAINTAINING A MINIMUM OF 10 FEET, THEN CLOSE THE TAIL DOOR A MINIMUM OF 3 FEET.

CAUTION: WITH MAIN DOOR CLUTCHES DISENGAGED THE DOOR BRAKES WILL BE INOPERATIVE. USE EXTREME CAUTION WHEN APPROACHING AIRCRAFT OR HANGAR DOOR STOPS. DO NOT EXCEED 1/2 WALKING SPEED.

- 3.1. If moving the hangar door with a UKE, push or pull the door (1/2 walking speed maximum) to the desired position while maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.
- 3.2. Open the drive motor access panel on the main doors. Reengage the brake lever on the backside of drive motor.
- 3.3. Climb the ladder (located on west end of hangar) to the top catwalk. Disengage the motor clutch drive and pull the tail door chain hand-over-hand until the door is fully closed or a minimum of 3 feet for other than aircraft use.

Attachment 8**HANGAR 601/603 MANUAL DOOR OPERATING PROCEDURES**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

1. PREPARING TO MOVE HANGAR DOORS: Accomplish the following prior to moving hangar doors:

- 1.1. Verify all door electrical power disconnects are off. Door power disconnects are located near each main hangar door control panel.
- 1.2. Open the drive motor access panel on the main doors. Place the brake lever on the backside of drive motor to the vertical position to disengage the clutch.

WARNING: MAIN DOORS MUST BE OPENED PRIOR TO OPERATING TAIL DOOR.

- 1.3. Inspect the door tracks (upper and lower) for obstructions debris and foreign objects.
- 1.4. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving doors.
- 1.5. Make certain all emergency exit (personnel) doors are fully closed.
- 1.6. Check that personnel and equipment are clear of the door's path, including the door recesses.

2. OPENING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

CAUTION: WHEN MAIN HANGAR DOORS ARE TO BE OPENED FOR OTHER THAN AIRCRAFT, OPEN EACH MAIN DOOR A MINIMUM OF 10 FEET, THEN OPEN TAIL DOOR AS NEEDED MAINTAINING A MINIMUM OF 3 FEET TO PREVENT DAMAGE TO TAIL DOOR.

CAUTION: WITH MAIN DOOR CLUTCHES DISENGAGED, THE DOOR BRAKES WILL BE INOPERATIVE. USE EXTREME CAUTION WHEN APPROACHING AIRCRAFT OR HANGAR DOOR STOPS. DO NOT EXCEED 1/2 WALKING SPEED.

- 2.1. If moving the hangar door with a UKE, push or pull the door (1/2 walking speed maximum)

to the desired position while maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

2.2. Open the drive motor access panel on the main doors. Reengage the brake lever on the backside of drive motor.

2.3. Call CE to fully open the tail door or leave a minimum 3 foot opening for other than aircraft use.

3. CLOSING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

CAUTION: WHEN MAIN HANGAR DOORS HAVE BEEN OPENED FOR OTHER THAN AIRCRAFT, CLOSE TAIL DOOR AS NEEDED MAINTAINING A MINIMUM OF 3 FEET, THEN CLOSE EACH MAIN DOOR A MINIMUM OF 10 FEET TO PREVENT DAMAGE TO TAIL DOOR.

3.1. Call CE to fully close the tail door or leave a minimum 3 foot opening.

CAUTION: WITH MAIN DOOR CLUTCHES DISENGAGED, THE DOOR BRAKES WILL BE INOPERATIVE. USE EXTREME CAUTION WHEN APPROACHING AIRCRAFT OR HANGAR DOOR STOPS. DO NOT EXCEED 1/2 WALKING SPEED.

3.2. If moving the hangar door with a UKE, push or pull the door (1/2 walking speed maximum) to the desired position while maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

3.3. Open the drive motor access panel on the main doors. Reengage the brake lever on the backside of drive motor.

Attachment 9**HANGAR 605 MANUAL DOOR OPERATING PROCEDURES**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

1. PREPARING TO MOVE HANGAR DOORS: Accomplish the following prior to moving hangar doors:

- 1.1. Verify all door electrical power disconnects are off. Door power disconnects are located near each main hangar door control panel and tail door control panel on the west side of bays.
- 1.2. Open the drive motor access panel on the main doors. Place the brake lever on the backside of drive motor to the vertical position to disengage the clutch.

WARNING:

TAIL DOOR MUST BE OPENED PRIOR TO OPERATING MAIN HANGAR DOORS.

- 1.3. Call CE to manually position the tail door to the full open position.
- 1.4. Inspect the door tracks (upper and lower) for obstructions, debris, and foreign objects.
- 1.5. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving doors.
- 1.6. Make certain all emergency exit (personnel) doors are fully closed.
- 1.7. Check personnel and equipment are clear of the door's path, including the door recesses.

2. OPENING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

CAUTION: WHEN MAIN HANGAR DOORS ARE TO BE OPENED FOR OTHER THAN AIRCRAFT, FULLY OPEN TAIL DOOR, THEN OPEN MAIN DOORS AS NEEDED MAINTAINING A MINIMUM OF 10 FEET.

CAUTION: WITH MAIN DOOR CLUTCHES DISENGAGED, THE DOOR BRAKES WILL BE INOPERATIVE. USE EXTREME CAUTION WHEN APPROACHING AIRCRAFT OR HANGAR DOOR STOPS. DO NOT EXCEED 1/2 WALKING SPEED.

- 2.1. If moving the hangar door with a UKE, push or pull the door (1/2 walking speed maximum) to the desired position while maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.
- 2.2. Open the drive motor access panel on the main doors. Reengage the brake lever on the backside of drive motor.
- 3. CLOSING AIRCRAFT HANGAR DOORS:** After preparation steps in paragraph 1 are performed, proceed as follows:

CAUTION: WHEN MAIN HANGAR DOORS HAVE BEEN OPENED FOR OTHER THAN AIRCRAFT, CLOSE MAIN DOORS AS NEEDED MAINTAINING A MINIMUM OF 10 FEET, THEN FULLY CLOSE TAIL DOOR.

CAUTION: WITH MAIN DOOR CLUTCHES DISENGAGED, THE DOOR BRAKES WILL BE INOPERATIVE. USE EXTREME CAUTION WHEN APPROACHING AIRCRAFT OR HANGAR DOOR STOPS. DO NOT EXCEED 1/2 WALKING SPEED.

- 3.1. If moving the hangar door with a UKE, push or pull the door (1/2 walking speed maximum) to desired position while maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.
- 3.2. Open the drive motor access panel on the main doors. Reengage the brake lever on the backside of drive motor.
- 3.3. Call CE to manually position the tail door to the full closed position.

Attachment 10**HANGAR 600, 602, AND 613 MANUAL DOOR OPERATING PROCEDURES**

Only qualified personnel will be authorized to operate hangar doors. Operators will be thoroughly familiar with these operating instructions and will be certified in accordance with this instruction. The basic tenets of Operational Risk Management (ORM) will be followed in the application of this instruction. Supervisors at all appropriate levels will be engaged to assess risks and apply risk controls when appropriate. The following sequence of door operations will be strictly adhered to.

1. PREPARING TO MOVE HANGAR DOORS: Accomplish the following prior to moving hangar doors:

- 1.1. Verify all door electrical power disconnects are off. Door power disconnects are located near each main hangar door control panel.
- 1.2. Open the drive motor access panel on the main doors by unlatching the two black buttons. Move the gear handle until the gears separate.
- 1.3. Inspect the door tracks (upper and lower) for obstructions, debris, and foreign objects.
- 1.4. Ensure outside weather shields are not covered with ice or snow, or frozen to the ground, before moving the doors.
- 1.5. Make certain all emergency exit (personnel) doors are fully closed and the clamshell (fuselage cutout) doors are latched securely in either the open (aircraft in hangar) or closed position.
- 1.6. Check personnel and equipment are clear of the door's path, including the door recesses.

2. OPENING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 above are performed, proceed as follows:

CAUTION: WHEN MAIN HANGAR DOORS ARE TO BE OPENED FOR OTHER THAN AIRCRAFT, OPEN MAIN DOORS AS NEEDED MAINTAINING A MINIMUM OF 10 FEET.

CAUTION: WITH MAIN DOOR CLUTCHES DISENGAGED, THE DOOR BRAKES WILL BE INOPERATIVE. USE EXTREME CAUTION WHEN APPROACHING AIRCRAFT OR HANGAR DOOR STOPS. DO NOT EXCEED 1/2 WALKING SPEED.

- 2.1. If moving the hangar door with a UKE, push or pull the door (1/2 walking speed maximum) to the desired position while maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.
- 2.2. Open the drive motor access panel on main doors by unlatching the two black buttons. Move the gear handle until the gears are reengaged.

3. CLOSING AIRCRAFT HANGAR DOORS: After preparation steps in paragraph 1 are performed, proceed as follows:

CAUTION: WHEN MAIN HANGAR DOORS HAVE BEEN OPENED FOR OTHER THAN AIRCRAFT, CLOSE MAIN DOORS AS NEEDED MAINTAINING A MINIMUM OF 10 FEET.

CAUTION: WITH MAIN DOOR CLUTCHES DISENGAGED, THE DOOR BRAKES WILL BE INOPERATIVE. USE EXTREME CAUTION WHEN APPROACHING AIRCRAFT OR HANGAR DOOR STOPS. DO NOT EXCEED 1/2 WALKING SPEED.

3.1. If moving the hangar door with a UKE, push or pull the door (1/2 walking speed maximum) to the desired position. Stop the doors at least 10 feet away from aircraft fuselage and open the fuselage clamshell doors if an aircraft is in the hangar. Allow the doors to fully close while monitoring clearances between the hangar doors and the aircraft, while maintaining a minimum of 10 feet clearance (minimum 10 feet marked on hangar floor) when doors are to be opened for other than aircraft use.

3.2. Open the drive motor access panel on the main doors by unlatching the two black buttons. Move the gear handle until the gears are reengaged.