

**BY ORDER OF THE COMMANDER AIR
MOBILITY COMMAND**



**AIR MOBILITY COMMAND
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Transportation

**C-17 AERIAL PORT EXPEDITOR
(APEX) LOAD DIRECTOR CHECKLIST**

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This instruction implements Department of the Air Force Policy Directive (DAFPD) 24-6, *Distribution and Traffic Management*. It establishes guidance and procedures for the Aerial Port Expeditor (APEX) Program. This instruction is applicable to APEX APS/AMS units, and deployed APEX locations. It does not apply to the Air National Guard, the Air Force Reserve Command, or the United States Space Force. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and disposed of in accordance with Air Force Records Information Management System Records Disposition Schedule, which is located in the Air Force Records Information Management System. Refer recommended changes to this instruction to the office of primary responsibility (OPR) using the DAF Form 847, *Recommendation for Change of Publication*. Route DAF Forms 847 from the field through the appropriate functional chain of command. Supplements to this publication are not authorized. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (T-2) number following the compliance statement. See Department of the Air Force Manual (DAFMAN) 90-161, *Publishing Processes and Procedures*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority through HQ AMC/A4TC. 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 instruction has been substantially revised and must be completely reviewed.

C-17 AERIAL PORT EXPEDITOR (APEX) LOAD DIRECTOR CHECKLIST

Table of Contents

1. GENERAL INFORMATION	4
1.1. Checklist Excerpts	4
1.2. Warnings, Cautions and Notes.	4
2. LOAD PLANNING CHECKLIST	5
2.1. Load Plan	5
2.2. Hazardous Materials and Special Handling.....	5
2.3. Cargo Inspection	5
2.4. Dimensional Considerations	6
2.5. Aircraft Limitations.....	6
2.6. Venting Requirements.....	6
3. AIRCRAFT PREFLIGHT	7
3.1. Aircraft Preflight: Exterior	7
3.2. Aircraft Preflight: Interior.....	7
3.3. Load Team.....	7
3.4. Cargo Compartment Inspection Forward Loadmaster Station	8
3.5. Cargo Compartment Left Side.....	9
3.6. AFT Loadmaster Station Panels	9
3.7. Cargo Door And Ramp Inspection	10
3.8. Aft Loadmaster Station/Cargo Compartment Right Side.....	10
4. DOOR, RAMP AND TOES OPERATIONS	11
4.1. Opening the Door/Ramp	11
4.2. Closing the Ramp/Door	12
4.3. Independent Ramp Toes Operation	12
5. STABILIZER STRUTS OPERATING PROCEDURES DEPLOYING/RETRACTING	14
5.1. Deploying Stabilizer Struts	14
5.2. Retracting Stabilizer Struts.....	15
6. PALLET OPERATIONS	17
6.1. Preparation.....	17
6.2 Loading.....	19
7. ROLLING STOCK OPERATIONS	21
7.1. Preparation.....	21

7.2. Loading	23
8. GENERAL WINCHING PROCEDURES	25
8.1. Remote Winch Control Operating Procedures (RWC)	25
8.2. FWD/AFT Winch Control Panels	25
9. CARGO WINCHING	26
9.1. Rolling Stock	26
9.2. Pallet Winching	27
10. POST LOADING	29
10.1. Procedures	29
11. OFFLOADING PROCEDURES	30
11.1 Offloading procedures for all types are essentially the reverse of loading procedures.....	30
12. RAMP TOE LOADING LIMITATION CHART	31
12.1. TABLE 4B-1 RAMP TOE LOADING LIMITATION CHART	31
13. WINCHING CHARTS	32
13.1. TABLE 4E-1 CALCULATION OF MAXIMUM CARGO WEIGHT	32
14. GROUND EMERGENCY PROCEDURE	33

1. GENERAL INFORMATION

1.1. Checklist Excerpts. Items in the checklist are excerpts from the relevant portions of the basic aircraft flight manuals/loading instructions (T.O. 1C-17A-1 and T.O. 1C-17A-9) are used by APEX loading supervisors. If conflict arises between this checklist and the T.O. checklists, the T.O. checklist will always take precedence.

1.2. Warnings, Cautions and Notes. The following definitions apply to WARNINGS, CAUTIONS and NOTES found in this checklist.

WARNING

Operating procedures, techniques, etc., which could result in personal injury and/or loss of life if not carefully followed.

CAUTION

Operating procedures, techniques, etc., which could result in damage to equipment if not carefully followed.

NOTE

Operating procedures, techniques, etc., which is considered essential to emphasize.

2. LOAD PLANNING CHECKLIST

2.1. Load Plan

A. Operating Weight and Moment	CHECKED
B. Allowable Cabin Load	CHECKED
C. Zero Fuel CG	CHECKED
D. Manifest/Load Sequence	CHECKED

NOTE

Loading sequence will be based on aircraft limitations and offload sequence. Emergency jettisoning and passenger evacuation should be considered during load planning.

2.2. Hazardous Materials and Special Handling

A. Size, Weight, Location	CHECKED
B. Hazardous Docs/Handling instructions	CHECKED
C. Compatibility/Separation Requirements	CHECKED

NOTE

Hazardous cargo that is considered jettison able shall not be positioned forward of non-jettison able cargo, except when its size, weight, and location will permit jettisoning by hand. Hazardous cargo will never be loaded in such a manner that would make jettisoning impossible.

NOTE

Verify the placement of hazardous materials for accessibility, visual inspection, and jettisoning.

2.3. Cargo Inspection

A. Gross Weights	CHECKED
B. CG Marked (Loaded or Empty)	CHECKED
C. Axle/Wheel Weights	CHECKED / COMPUTED
D. ATTLA Certification	CHECKED / AS REQUIRED
E. Hazardous Material Orientation Marking	CHECKED / AS REQUIRED

NOTE

Minor deviations to weight, dimensions, etc are permitted provided the item does not exceed the limitations outlined in applicable loading manual

2.4. Dimensional Considerations

A. Pallet Dimensions

CHECKED

WARNING

Use caution when positioning pallet/platform in ADS pallet position No. 1 that exceeds 78 inches in height measured from the surface of the pallet/platform. Cargo will contact oxygen lines attached to the aircraft bulkhead prior to pallet/platform contacting the ADS pallet end stops. Prior to loading pallets that exceed 78 inches in height in the ADS rails raise the inboard logistics rail end stops for final positioning.

B. Vehicle Dimensions

CHECKED

NOTE

Consider the removal and stowage of equipment on vehicles (i.e. antennas, hooks, etc.) to eliminate or reduce the need for approach or step-up shoring.

2.5. Aircraft Limitations

A. Ramp Limits

CHECKED

B. Cargo Floor Limits

CHECKED

C. Shoring Requirements

CHECKED / AS REQUIRED

2.6. Venting Requirements

CHECKED / AS REQUIRED

WARNING

Preparation and hookup of the vent system will be accomplished by qualified shipper or aircraft maintenance personnel. ATOC will prearrange for a qualified MX person to vent cargo. Ramp personnel and aircraft loadmasters are not qualified to connect cargo to the aircraft exhaust venting system.

3. AIRCRAFT PREFLIGHT

3.1. Aircraft Preflight: Exterior

A. Parking Spot/Tail Number **CHECKED**

NOTE

Contact ATOC if the aircraft is not parked on the required hazardous cargo loading area/Hotspot.

B. Ground Support Fire Extinguisher(s) **IN PLACE / CHECKED**

C. Nose Gear Pins (2) **INSTALLED**

D. Ground Wires **CONNECTED / AS REQUIRED**

E. Main Landing Gear Chocks **INSTALLED**

NOTE

Excessive aircraft weight can cause the chocks to become stuck, advise MX to move chocks based on cargo weight.

3.2. Aircraft Preflight: Interior

A. Aircraft Forms **CHECKED**

NOTE

Check the aircraft forms to ensure all required systems are operational.

B. Aircraft Power **ON**

C. MX Personnel **BRIEFED**

D. Safety/Evacuation Points **BRIEFED**

E. Aircraft Brakes **ON / PRESSURE CHECKED**

CAUTION

Confirm aircraft parking brake pressure is set above 1,000 PSI and confirm PARKING BRAKES ON L, R on WAP.

3.3. Load Team

A. Loading Equipment **BRIEFED**

B. ADS Links/Ramp Toes **BRIEFED**

C. Cargo Floor/Ramp Configuration	BRIEFED
D. Safety Briefing	BRIEFED
E. Ground Emergency Exits Locations	BRIEFED
F. Evacuation Points	BRIEFED

3.4. Cargo Compartment Inspection Forward Loadmaster Station

A. Circuit Breaker(s)	CHECKED
-----------------------	----------------

NOTE

All circuit breakers should be in, unless requirements in AFTO Form 781 indicate otherwise, or tagged to identify inoperability.

B. Emergency Light Switch	ON / CHECKED / NORM
---------------------------	----------------------------

NOTE

Ensure all emergency lights and exit signs in the cargo compartment illuminate. Return switch to normal.

C. Cargo Compartment Lights	ON / CHECKED
D. Annunciator/Digit Test	CHECKED
E. GANG LOCK BACKUP Panel Switches	OFF
F. Loadmaster Forward Control Panel	
1. Electric Power Switch	ON
2. Rail Locks/Lips	AS REQUIRED

NOTE

If pallets/platforms are onboard ensure applicable rail locks/lips are engaged.

3. Sidewall Panel Power	ON / AS REQUIRED
4. ADS Locks Select L/R	CHECKED / SAFE
5. Ramp Blowdown Switches	DISARM / OFF
6. Exhaust and Redistribution Fans	ON / AS REQUIRED
G. Cargo Winch Control Panel	OFF / OFF / NORM
H. Rail Lifting Tools (2)	STOWED

3.5. Cargo Compartment Left Side

A. Aircraft Equipment	STOWED
B. Fire Extinguishers	CHECKED
C. Circuit Breakers	CHECKED

NOTE

All circuit breakers should be in, unless requirements in AFTO Form 781 indicate otherwise, or tagged to identify inoperability.

3.6. AFT Loadmaster Station Panels

A. AFT Loadmaster STATUS Panel	CHECKED
B. RAMP BLOWDN Switches	DISARM / OFF
C. RAMP BLOWDN EMERG LIGHTS	TEST

NOTE

Ensure all emergency lights and exit signs aft of the troop door and the two exit signs at FS 1345 illuminate. Contact maintenance personnel if lights do not remain illuminated during TEST.

D. AFT Loadmaster Panel Lights	CHECKED
E. Cargo Door Lights	CHECKED

NOTE

Cargo door and staging lights will be used when additional lighting is required behind the aircraft. Cargo door lights required for cargo door inspection.

F. Cargo Winch Control Panel	OFF / OFF / NORM
G. ANNUNCIATOR/DIGIT TEST	CHECKED
H. APU FIRE Control Panel	NORM / NORM
I. Stabilizer Struts	STOWED / RETRACT / AS REQUIRED

3.7. Cargo Door And Ramp Inspection

A. ADS Link/Plug Assembly **INSTALLED / AS REQUIRED**

CAUTION

When ADS links are used, equal length links shall be used on each side of the ramp. Damage to the aircraft ramp will occur if the ADS links are not configured the same on both sides.

B. Tow Release Mechanism Cover **INSTALLED**

C. Ramp Toe Stowage **CHECKED**

NOTE

Ensure Ramp Toes stowage handles are engaged and locked.

D. Ramp Toes, Roller Conveyors, Guide Rails **SECURED**

WARNING

Check all roller conveyors/guide rails for condition and proper installation. If they are not properly installed, injury to personnel may occur.

E. Door Stowage **CHECKED / SECURED**

CAUTION

Equipment that is authorized for stowage in the cargo door and associated tie down devices shall not extend into the door opening/closing envelope. Damage to the cargo door seals or aft exterior fuselage may result.

CAUTION

Stowage of equipment on the aft bulkhead is prohibited.

3.8. Aft Loadmaster Station/Cargo Compartment Right Side

A. Equipment **STOWED**

B. ANNUNCIATOR/DIGIT TEST **CHECKED**

C. Fire Extinguishers **CHECKED**

D. Circuit Breakers **CHECKED**

E. Snatch Blocks (4) **CHECKED / STOWED**

NOTE

Check general condition of pulley, hook latch quick release pin and stop.

4. DOOR, RAMP AND TOES OPERATIONS

4.1. Opening the Door/Ramp

A. Electrical and Hydraulic Power **ESTABLISHED**

NOTE

Establish electrical and hydraulic power (AUX system No.2) at the Aft loadmaster control panel, Left side.

NOTE

When more than 25,000 pounds are on the ramp and/or extreme cold weather operation, the No.2, No.3 and XFER pump will be required to raise and lock the ramp.

B. RAMP TOES Toggle Switch **UP / AS REQUIRED**

NOTE

Position and hold the RAMP TOES UP toggle switch until the toes reach the desired position.

C. DOOR Toggle Switch **OPEN**

WARNING

Ensure the opening envelope is clear of personnel, equipment or obstructions prior to operation. Damage to equipment or personnel injury may occur.

NOTE

Position and hold the Door toggle switch to the desired position until the door is open and locked.

D. ADS Links/Plugs **AS REQUIRED**

CAUTION

When ADS links are used, equal length links shall be used on each side of the ramp. Damage to the aircraft ramp will occur if the ADS links are not configured the same on both sides.

E. RAMP ADJ Toggle Switch **DOWN**

WARNING

Ensure the opening envelope is clear of personnel, equipment or obstructions prior to operation. Damage to equipment or personnel injury may occur.

B. RAMP TOES Toggle Switch

UP / DOWN

NOTE

All ramp toe operations are inhibited unless the cargo door is up and locked, or the cargo door and ramp are both closed/locked.

NOTE

Position and hold the RAMP TOES toggle switch until the toes reach the desired position.

C. Hydraulic Power

OFF

5. STABILIZER STRUTS OPERATING PROCEDURES DEPLOYING/RETRACTING

5.1. Deploying Stabilizer Struts

A. Aircraft Parking Brakes **ON / PRESSURE CHECKED**

WARNING

Failure to set the parking brake before strut extension may result in aircraft movement and damage.

B. Stab Strut Manifold Floodlight Switch **AS REQUIRED**

NOTE

Open the strut manifold access hard-liner panel and position the switch to **WHITE, OFF, or NVG** to support Stab Strut Operations. Manifold light brightness is controlled from the LM panel left side. If the knob/switch is turned off manifold lights will not function.

C. Pressure Regulator Control Knob **CLOSED**

D. Stab Strut Control Handle **STOW / AS REQUIRED**

E. STAB STRUTS Annunciator Panel **EXTINGUISHED / AS REQUIRED**

NOTE

When the **STAB STRUT ACTUATORS** circuit breaker is pulled, the **STRUT DOOR** light on the **DOOR/STATUS** will not illuminate.

F. Electrical and Hydraulic Power **ESTABLISHED**

NOTE

Establish electrical and hydraulic power at the Aft LM control panel, left side. Use **AUX** system No.2.

G. Stab Strut Control Handle **DEPLOY**

WARNING

Ensure the opening envelope is clear of personnel, equipment or obstructions prior to operation. Damage to equipment or personnel injury may occur.

H. Stab Strut Control Handle **EXTEND**

CAUTION

Continued operation of, or failure to notify maintenance of a malfunctioning stabilizer strut system may result in damage to aircraft. In the event the system fails to operate properly, do not recycle the stab strut switch. Immediately remove hydraulic power and notify maintenance.

NOTE

Visually verify that the struts have deployed, and annunciator panel is indicating deployed prior to moving the handle to EXTEND.

NOTE

When the control handle is in the EXTEND position and released, the spring-loaded control handle will return to the STRUT HOLD position.

I. Stab Strut Control Handle

STRUT HOLD

NOTE

Control handle inputs in the range from just below HOLD to halfway to EXTEND produce strut extension at a substantially reduced rate.

J. Hydraulic Power

OFF / AS REQUIRED

NOTE

The aux hydraulic pump should be off during normal on/offloading to reduce noise level. When strut adjustment is required, temporarily turn the No. 2 aux hydraulic pump on. Move the control handle from HOLD to EXTEND until both struts extend to the ground and then return to HOLD.

5.2. Retracting Stabilizer Struts

A. Hydraulic Power

ESTABLISHED

NOTE

Establish electrical and hydraulic power at the Aft LM control panel, left side. Use AUX system No.2.

B. Stab Strut Control Handle

RETRACT

WARNING

Ensure the opening envelope is clear of personnel, equipment or obstructions prior to RETRACTION. Damage to equipment or personnel injury may occur.

CAUTION

Continued operation of, or failure to notify maintenance of a malfunctioning stabilizer strut system may result in damage to aircraft. In the event the system fails to operate properly, do not recycle the stab strut switch. Immediately remove hydraulic power and notify maintenance.

- C. Stab Strut Control Handle
- D. Stab Struts Annunciator Panel
- E. Stab Strut Manifold Floodlight Switch
- F. Hydraulic Power

STOW
EXTINGUISHED / AS REQUIRED
OFF
OFF / AS REQUIRED

6. PALLET OPERATIONS

6.1. Preparation

- | | |
|-----------------------------------|-----|
| A. Sidewall Panel Power Switch | ON |
| B. ADS LOCK GANG CONTR R LOCK SEL | SET |

NOTE

Set the rotary switch to the locks anticipated for use during loading.

- | | |
|------------------------------------|-------------------------|
| C. ADS LOCK GANG CONTR R LOCKS REL | RELEASED |
| D. ADS LOCK GANG CONTR R LOCK SEL | SAFE |
| E. ADS Links/Plugs | INSTALLED / AS REQUIRED |

CAUTION

When ADS links are used, equal length links shall be used on each side of the ramp. Damage to the aircraft ramp will occur if the ADS links are not configured the same on both sides. When reconfiguring the ADS Links ensure proper engagement of the ADS sensor support bracket spring with the sensor support bracket arm. Failure to comply could cause improper or no signal from the sensor to the ADSC.

- | | |
|--|--------------------------|
| F. Ramp Toes/Guide Rails/Roller
Conveyors | POSITIONED / AS REQUIRED |
|--|--------------------------|

WARNING

If the ramp toes and roller conveyors/guide rails are used, ensure they are properly installed. Personnel injury could occur when the toes are raised if the roller conveyors and guide rails are not properly secured to the toes.

NOTE

When bare tine forklift loading, ramp toe rollers shall not be removed while a pallet is positioned over the toes. One set of ramp toe inner roller channels may be removed prior to marshalling the forklift into position if the pallet does not exceed 8,500 lbs.

CAUTION

Ensure rail sections are properly configured for mission. Check the area for foreign objects and loose equipment that could interfere with rail locking mechanisms and pallet movement. Check all roller conveyors and ensure they are properly installed. Damage to restraint rails will occur if the rails are not in the full up position. Ensure roller tray lock tabs are down. Damage to locking tab will occur if not in the down position.

- | | |
|--|-----------|
| G. Retractable Vertical restraint Lips | RETRACTED |
|--|-----------|

NOTE

Check annunciator panel to ensure lips are retracted.

H. Pallet End Stops	RAISED / AS REQUIRED
I. Staging Lights	AS REQUIRED
J. Stabilizer Struts	AS REQUIRED

WARNING

Aircraft Brakes will be set if Stabilizer Struts are Deployed. Prior to extending the Struts visually clear the area beneath the struts to prevent damage to equipment or personnel injury.

NOTE

Stabilizer struts must be used in accordance with Table 4B-1.

K. Concurrent Operations	AS REQUIRED
L. Loading Crew Duties	BRIEFED

NOTE

Brief/Assign crew members on hand signals and spotter/duties. When loading cargo over 100 inches, monitor clearance between the top of the cargo and aircraft structures.

M. Loading Vehicle	
1. Driver	BRIEFED
2. MHE/Equipment Chocks	POSITIONED
3. Critical Clearances	MONITORED
4. Brakes	SET
N. Pallets	
1. Soil Contamination and Pests	CHECKED
2. Pallet Identifier	CHECKED
3. Pallet and Net Condition	CHECKED

WARNING

Use caution when positioning pallet/platform in ADS pallet position No. 1 that exceeds 78 inches in height measured from the surface of the pallet/platform. Cargo will contact oxygen lines attached to the aircraft bulkhead prior to pallet/platform contacting the ADS pallet end stops. Prior to loading pallets that exceed 78 inches in height in the ADS rails raise the inboard logistics rail end stops for final positioning.

WARNING

Pallets and nets with missing tiedown rings, exposed deteriorated wood core, extreme delamination, nets with missing rings, hooks or damaged/missing webbing shall not be loaded. A damaged pallet or net cannot maintain restraint requirements and is a flight safety hazard.

4. Net Security

CHECKED**WARNING**

When a top net is used with side nets, the top net hooks shall only be connected to the side net attachment rings. The hook strap shall not be routed under side net webbing and then to the side net ring. Improperly installed nets do not provide required restraint and are a matter of safety of flight.

5. Low Profile Cargo

RESTRAINED / AS REQUIRED**NOTE**

The top net may be used for restraint in all directions (vertical, lateral, forward, and aft) provided the net weight of the pallet does not exceed 2,500 pounds and cargo height does not exceed 45 inches from the surface of the pallet.

6. Small Wheeled Items

CHECKED**NOTE**

These items should be restrained separately to the pallet in addition to the use of the nets.

7. Center of Gravity

CHECKED

8. Pallet Rings and Couplers

CHECKED

9. Hazardous Cargo

CHECKED**NOTE**

Inspect hazardous cargo for evidence of damage, leakage and orientation. Ensure accessibility for jettison.

10. Hazardous Material Placement

CHECKED / AS REQUIRED**6.2 Loading**

A. Locks and Vertical Retractable Lips

LOCKED / ENGAGED**CAUTION**

When cargo projects aft of the end of the logistics rails (FS 1390), ensure the ramp toes do not contact the cargo while being raised to the vertical position. When pallets are loaded out of position in 7, 8, 9 Logistics or 9, 10, 11 ADS ensure Vertical Retractable Lips are securing the pallet indents, if not supplemental vertical restraint will be required.

B. Logistic Locks Status

1. White Index line

CHECKED**WARNING**

A white-light flashlight shall be used when inspecting the lock slide marking for lock status. Using the naked eye or any other flashlight color may cause the lock status to be misinterpreted.

WARNING

Failure to ensure that all locks being utilized in a pallet position are physically locked may result in cargo becoming loose.

WARNING

Any lock within a pallet position that does not fully lock can cause other locks in that pallet position to unlock uncommanded.

WARNING

Check all lock annunciator panels, ensure Locks/Lips are fully engaged. If any individual lock engaging a pallet/platform is visually assessed as unlocked, the pallet/platform shall be restrained 3 g's forward and 1.5 g's aft, regardless of control panel lock indications.

WARNING

When loading pallets/platforms into the aircraft, avoid excessive speed. Excessive loading speed could result in injury to personnel and damage to pallets/cargo/aircraft.

WARNING

Failure to ensure that all locks being utilized in a pallet position are physically locked may result in injury to personnel and/or damage to pallets/cargo/aircraft.

C. Pallet End Stops

STOWED / AS REQUIRED

D. Cargo Restraint

COMPUTED / APPLIED

E. Cargo Vented

AS REQUIRED**WARNING**

Preparation and hookup of the vent system will be accomplished by qualified shipper or aircraft maintenance personnel. ATOC will prearrange for a qualified MX person to vent cargo. Ramp personnel and aircraft loadmasters are not qualified to connect cargo to the aircraft exhaust venting system

7. ROLLING STOCK OPERATIONS

7.1. Preparation

A. ADS Links/Plugs INSTALLED / AS REQUIRED

CAUTION

When ADS links are used, the same length link shall be used on each side of the ramp. Damage to the aircraft ramp will occur if the ADS links are not configured the same on both sides.

B. Ramp Toes POSITIONED / AS REQUIRED

NOTE

Ramp toes must be used in accordance with Table 4B-1.

C. Door and Ramp OPEN

WARNING

Ensure the opening envelope is clear of personnel, equipment or obstructions prior to operations. Damage to equipment or personnel injury may occur.

D. Staging Lights AS REQUIRED

E. Stabilizer Struts AS REQUIRED

NOTE

If stabilizer struts are required, extend prior to loading. Stabilizer struts must be used in accordance with Table 4B-1. Periodically check to ensure the struts maintain contact with the ground. If ground contact is lost, turn on the No. 2 aux hydraulic pump to restore ground contact.

WARNING

Prior to extending struts, visually clear area beneath ramp and stabilizer struts to prevent personnel injury.

F. Cargo Floor CLEARED / AS REQUIRED

WARNING

Gloves should be used when configuring logistics rails to prevent hand injury.

G. Vehicle/Rolling Stock

- | | |
|-----------------------------------|----------------|
| 1. Soil Contamination and Pests | CHECKED |
| 2. Fluid Leaks | CHECKED |
| 3. Tires and Track Pads Condition | CHECKED |
| 4. Engine and Brakes | CHECKED |

- | | |
|----------------------------|----------------|
| 5. Battery and Filler Caps | CHECKED |
| 6. Tanker Type Vehicles | CHECKED |

NOTE

Tanker type vehicles, either trailer or self-contained, are not certified for airlift with fuel or water in the tank.

- | | |
|------------------------------------|------------------------------|
| 7. Shippers Declaration(s)/Labels | CHECKED / AS REQUIRED |
| 8. Loose Equipment/Secondary Cargo | CHECKED / SECURED |

NOTE

Ensure all loose equipment and secondary cargo are secured.

- | | |
|---------------|----------------|
| 9. Fuel Tanks | CHECKED |
|---------------|----------------|

NOTE

Vehicles with pressure-type fuel system, the cap will be placed in the semi-locked position.

NOTE

Verify that fuel levels in vehicles/items are within limitations.

- | | |
|---------------------------------------|------------------------------|
| 10. Trailer Forward Support Leg/Wheel | SECURED |
| 11. Specific instructions | CHECKED / AS REQUIRED |

- | | |
|---------------------------------|--------------------|
| H. Concurrent Operations | AS REQUIRED |
|---------------------------------|--------------------|

WARNING

On/offloading cargo during fueling operations is permissible only under certain conditions. Refer to T.O. 00-25-172 for additional instructions. Failure to comply could result in loss of aircraft and injury to personnel.

- | | |
|-----------------------|------------------------------|
| I. Ventilation | CHECKED / AS REQUIRED |
|-----------------------|------------------------------|

WARNING

Exhaust fans shall be used when prolonged operation of engine powered equipment is required inside the aircraft. Without both air conditioning packs operating, the crew door or forward emergency escape door must be open during operation of the cargo exhaust fans to ensure proper ventilation. Failure to comply could result in build-up of carbon monoxide fumes and possible injury to personnel.

J. Vehicle Driver(s)

1. Hand Signals
2. Transmission

**BRIEFED
SET / AS REQUIRED**

CAUTION

Vehicles that do not have a neutral position transmission, which allows the item to move freely, will be on/offloaded from the aircraft using their own power. The cargo winch and vehicle transmission will not be used together. If more than one layer of shoring is required, the shoring will be prefabricated or joined together.

NOTE

Low Gear/Lowest Range/All-Wheel Drive.

K. Engine and Brakes**CHECKED****L. Critical Clearance Observers****BRIEFED / POSITIONED**

NOTE

A clear view of all observers/spotters by the Load Director or appointed spotter giving commands should be maintained at all times during loading/offloading operations.

M. Shoring**AS REQUIRED****N. Bridge Plates****AS REQUIRED****O. Bridge Plates Rollers (Bar)****AS REQUIRED**

WARNING

If slippery ramp conditions exist, the cargo winch should be used in the loading operation. Load shift could result in damage to equipment and injury to personnel.

NOTE

Refer to T.O. 1C-17A-9, Section IVB for vehicle loading methods and restraint or ATTLA certification/T.O. 1C-17A-9 Section VI for specifics.

7.2. Loading**A. Load planned CG station****CHECKED****B. Brakes and Transmission****SET**

NOTE

Place all vehicles with automatic transmissions in PARK. Place vehicles with standard transmissions in the LOWEST GEAR.

C. Ignition**OFF**

D. Safety Chains
E. Driver
F. Restraint

**ATTACHED
RELEASED
APPLIED / COMPUTED**

CAUTION

**Inspect the backside of the axles and structures for the presence of hydraulic lines or electrical cables before attaching the tiedown chains around these hidden areas.
Failure to comply could cause damage to the aircraft or cargo.**

CAUTION

Do not attach more than half of the total tiedown required to the axles. No vertical restraint value is added when tiedown is connected to spring mounted axles.

G. Cargo Vented

AS REQUIRED

WARNING

Preparation and hookup of the vent system will be accomplished by qualified shipper or aircraft maintenance personnel. ATOC will prearrange for a qualified MX person to vent cargo. Ramp personnel and aircraft loadmasters are not qualified to connect cargo to the aircraft exhaust venting system.

8. GENERAL WINCHING PROCEDURES

8.1. Remote Winch Control Operating Procedures (RWC)

A. FWD and AFT Winch Control Panels	OFF / OFF / NORM
B. RWC Bracket Assembly/Door Wingnut Fastener	OPEN
C. RWC Battery Charge Status Light is GREEN	CHECKED
D. GROUP SELECT Rotary Switch	SELECTED
E. WINCH IDENT THUMB wheel	SELECTED
F. Operating Frequency	SET

NOTE

The RWC operating frequency is determined by the position of the GROUP SELECT rotary switch and the WINCH IDENT thumb wheels. Ensure they are on the same frequency. The RWC bracket assembly door/wingnut fastener must be open before pressing the ENTER button. Depress the enter button on the receiver/transmitter radio.

NOTE

Establish electrical and hydraulic power. Use AUX system No.3.

NOTE

When changing the GROUP SELECT/WINCH IDENT settings, the RWC must be returned to the holder and the ENTER button depressed again.

G. RWC Armed/Ready	REMOVE
H. RETRIEVER winch control switch	OFF

NOTE

Retriever winch operations are controlled from the top half of the RWC. Ensure the directional control switch is in the OFF position to operate the cargo winch.

I. RWC Mode	IN / OUT
J. RWC Speed	AS REQUIRED
K. OPERATE Winch	ACTION

NOTE

Depress deadman trigger then slowly squeeze the upper trigger to start cable movement.

NOTE

Use ORIDE if RWC is removed from holder and fails to operate or return to holder.

8.2. FWD/AFT Winch Control Panels

A. Mode HIGH/LOW	AS REQUIRED
B. Speed IN/OUT	AS REQUIRED
C. Remote ORIDE/NORM	AS REQUIRED

9. CARGO WINCHING

9.1. Rolling Stock

- | | |
|----------------------------|---------------------------------|
| A. Aircraft Parking Brakes | ON / PRESSURED / CHECKED |
| B. Winch Condition | CHECKED |

WARNING

All personnel will wear gloves when handling the winch cable.

- | | |
|-----------------|----------------------|
| C. Winch Sheave | UP AND PINNED |
|-----------------|----------------------|

CAUTION

Winch cable sheave shall be raised, pinned, and aligned before operating the winch. Winching with the cable sheave stowed or not aligned under any operating condition will damage the winch.

- | | |
|-------------------------------|----------------|
| D. Winch Cable Condition/Hook | CHECKED |
|-------------------------------|----------------|

WARNING

An unserviceable winch cable can be a hazard to the loading crew during winch on/offloading operations. It could break under load and whiplash, resulting in serious injury to personnel and/or causing severe damage to the aircraft structure.

NOTE

Examine the winch cable to see that it is in a serviceable condition:

Any cable that has three broken wires or less per strand inch or six broken wires or less per cable inch shall be considered serviceable. The maximum number of broken wires shall not occur in any 2 consecutive inches of cable, i.e., if six wires are broken in 1 inch of cable, no additional broken wires shall be allowed in the next consecutive inch of cable. Any cable not within the above specified limits shall be considered unserviceable.

- | | |
|----------------------|--------------------------|
| E. Snatch Block | AS REQUIRED |
| F. Sheave/Cable Path | ALIGNED / CLEARED |

CAUTION

Ensure the winch cable sheave is in alignment with the cable pull, properly routed through the snatch blocks and will not interfere with other items (tiedown chains/devices, cargo, etc.).

NOTE

When the direction of the cable pull is changed, the sheave must be manually realigned to correspond with the new angle of pull. Ensure sheave remains in proper alignment with the direction of cable pull throughout the winching operation.

G. Chain Bridle/Attachment Points **AS REQUIRED**

NOTE

Inspect attachment points for condition and rated strength.

H. Cargo Compartment/Cargo/Personnel

CLEARED

I. Winch Cable/Snatch Blocks

ATTACHED / AS REQUIRED

CAUTION

Ensure the winch cable is properly routed through the snatch blocks and will not interfere with other items (tiedown chains/devices, cargo, etc.).

J. Winch Cable Path

CLEARED

K. Steering Yoke

AS REQUIRED

L. Equipment Chocks

POSITIONED

WARNING

Wheel chocks shall not be used on any wheeled item while it is being winched up the cargo ramp and ramp toes. If brakes are inoperative, wheel chocks shall be used to keep the item from rolling past the desired position.

9.2. Pallet Winching

A. Aircraft Parking Brakes

ON / PRESSURE CHECKED

B. Winch Condition

CHECKED

WARNING

All personnel will wear gloves when handling the winch cable.

C. Winch Sheave

UP AND PINNED

CAUTION

Winch cable sheave shall be raised, pinned, and aligned before operating the winch. Winching with the cable sheave stowed or not aligned under any operating condition will damage the winch.

D. Winch Cable Condition/Hook

CHECKED

WARNING

An unserviceable winch cable can be a hazard to the loading crew during winch on/offloading operations. It could break under load and whiplash, resulting in serious injury to personnel and/or causing severe damage to the aircraft structure.

NOTE

Examine the winch cable to see that it is in a serviceable condition:

Any cable that has three broken wires or less per strand inch or six broken wires or less per cable inch shall be considered serviceable. The maximum number of broken wires shall not occur in any 2 consecutive inches of cable, i.e., if six wires are broken in 1 inch of cable, no additional broken wires shall be allowed in the next consecutive inch of cable. Any cable not within the above specified limits shall be considered unserviceable.

E. Snatch Block Condition

AS REQUIRED

F. Sheave/Cable Path

ALIGNED / CLEARED

CAUTION

Ensure the winch cable sheave is in alignment with the cable pull, properly routed through the snatch blocks and will not interfere with other items (tiedown chains/devices, cargo, etc.).

NOTE

When the direction of the cable pull is changed, the sheave must be manually realigned to correspond with the new angle of pull. Ensure sheave remains in proper alignment with the direction of cable pull throughout the winching operation.

G. Chain Bridle

ATTACHED

CAUTION

The bridle shall be formed by maintaining a minimum of 30 inches between the winch cable hook and the forward edge of the pallet whenever possible in both the 88- and 108-inch orientation. Use only the corner pallet rings for bridle attachment.

H. Cargo Compartment/Cargo/Personnel

CLEARED

I. Winch Connected

CHECKED

J. Operate Winch

RWC / FWD / AFT LM PANEL

10. POST LOADING**10.1. Procedures**

A. Cargo	CHECKED
B. Load Restraint	CHECKED
C. Stabilizer Struts	STOWED

WARNING

**Ensure loading envelope is clear of personnel, equipment or obstruction prior to operation.
Damage to equipment or personnel injury may occur.**

D. Cargo Door and Ramp	CLOSED
------------------------	---------------

WARNING

**Ensure loading envelope is clear of personnel, equipment or obstruction prior to operation.
Damage to equipment or personnel injury may occur.**

E. Staging Lights	OFF
F. Ramp Toes/ADS Links	AS REQUIRED

NOTE

Toes will be left in the vertical position when installed.

G. Cargo Winch Control Panels	OFF / OFF / NORM
H. SIDEWALL PANEL POWER Switch	OFF
I. Loose Equipment	SECURED
J. Maintenance Advised	LOADING COMPLETE

11. OFFLOADING PROCEDURES

11.1 Offloading procedures for all types are essentially the reverse of loading procedures.

12. RAMP TOE LOADING LIMITATION CHART

12.1. INSERT TABLE 4B-1 RAMP TOE LOADING LIMITATION CHART (from the most current TO-1C-17A-9).

13. WINCHING CHARTS

13.1. INSERT TABLE 4E-1 CALCULATION OF MAXIMUM CARGO WEIGHT VERSUS ANGLE COEFFICIENT OF FRICTION (from the most current TO-1C-17A-9).

14. GROUND EMERGENCY PROCEDURE

1. Fire

- a. Personnel – **Evacuate**
- b. Command Post/Fire Department – **Notify by any available means. State nature of emergency, tail number, parking spot, and number of personnel on board.**
- c. Fire Source Accessible/Removable – **Removed/As Required**

WARNING

If flammable and/or explosive materials are onboard, offload these items first. Failure to comply could result in spread of the fire and/or onboard expositions that could result in serious injury to personnel.

- d. Fight Fire – **As Required**
- e. Operating Systems – **OFF/As Required**

If conditions permit, have maintenance personnel shutdown the APU, External Power, and Battery

- f. Personnel Count – **Complete**

2. Fuel Spills

- a. Fire Extinguisher – **Ready/Stand By**
- b. Vehicles – **Shut Down**
- c. Crew Chief/Fire Department/ATOC – **Notified**
- d. Electrical Equipment – **OFF**
- e. Cargo Compartment Doors/Ramps – **OPEN**
- f. Small fuel spill – **Wipe up**
- g. Large fuel spill – **Await Instructions**

3. Hazardous Cargo Spills

- a. Crew Chief/Fire department/ATOC – **Notified**
- b. Keep Personnel away from spills
- c. Do not attempt to clean it up