TO 1300i-2-10JG-50-1

TECHNICAL MANUAL

JOB GUIDE
ORGANIZATIONAL MAINTENANCE

GROUND HANDLING LAUNCH
(10-50-00 THROUGH 10-51-02)

USAF SERIES
300i
AIRCRAFT

MCDONNELL DOUGLAS CORPORATION
MILITARY TRANSPORT AIRCRAFT
F33657-81-C-2108
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THIS MANUAL INCORPORATES INTERIM SAFETY SUPPLEMENT TO 1300i-2-10JG-50-1SS-1, DATED 18 JULY 2024.

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Basic and all changes have been merged to make this a complete publication.

Published under authority of the Secretary of the Air Force

1 OCTOBER 2024

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T-2 **1 OCTOBER 2024**

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TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 354 CONSISTING OF THE FOLLOWING:

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INTRODUCTION

SCOPE.

This manual provides general system information and detailed instructions for launching of the aircraft and snow and ice removal.

MODEL(S) COVERED.

All

ABBREVIATIONS.

The following is a list of non-standard abbreviations used throughout this manual:

ELOUT	Estimated Lowest Operational Use Temperature
EPC	Electrical Power Center
FISA	Fixed Installation Satellite Antenna
HABS	Hot Air Blast System
Ka FMA	Ka-Band Fuselage Mount Antenna
PLCS	Places

CHANGE REQUEST.

Recommended changes to this manual shall be submitted in accordance with TO 00-5-1.

300i TO INFORMATION.

General 300i TO/eTO, TO Manager, Supplement and finalized Recommended Change (RC) information can be found in the Enhanced Technical Information Management System (ETIMS), System of Record.

LIST OF TIME COMPLIANCE TECHNICAL ORDERS (TCTO).

This list of TCTO's contains all current TCTO's that affect the technical content of text or illustrations found in this manual.

TCTO NUMBER	TITLE	TCTO DATE	APPLICABILITY

SECTION 1

GENERAL INFORMATION (10-50-00)

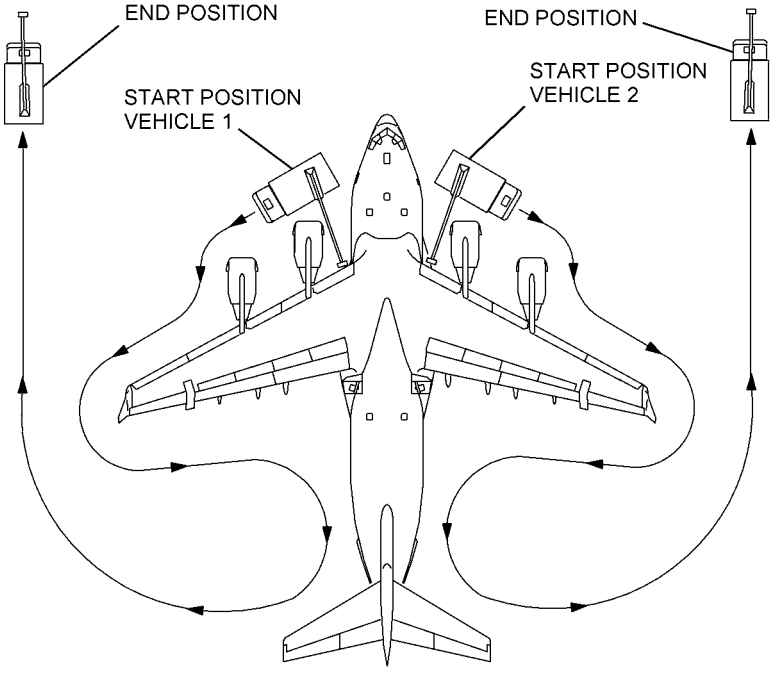
1-1. GENERAL INFORMATION.

1-2. This section provides general information that is essential for ensuring complete and safe maintenance procedures contained throughout this manual.

1-3. All adhesive sealants, sealants, and compounds used in this manual are listed with a primary part number and/or primary specification number. Any suitable substitutes and/or interchangeable adhesive sealants, sealants, and compounds may be used unless otherwise specified. Suitable substitutes and/or interchangeable adhesive sealants, sealants, and compounds are listed in the system peculiar corrosion control manual (Refer to TO 1300i-23, Chapter 1, Section III).

1-4. OPTIONAL DEICING/ANTI-ICING VEHICLE PATH.

1-5. When using multiple vehicles to deice/anti-ice aircraft, supervisors are to ensure safe and effective application of deicing/anti-icing fluids. Supervisor will determine safest and most effective path and brief team members prior to deicing operations.



OPTIONAL ANTI-ICING VEHICLE PATH

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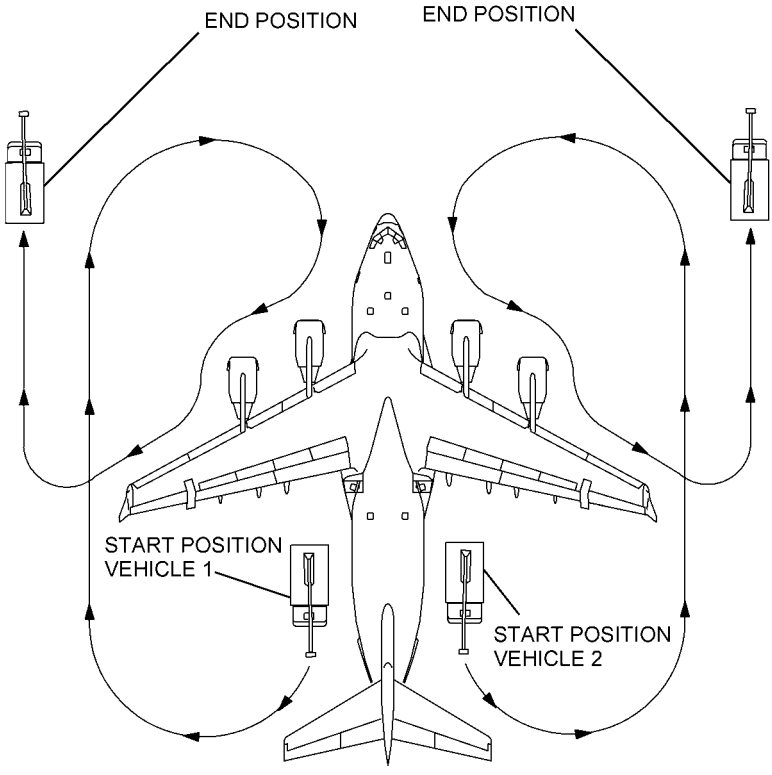

OPTIONAL DEICING VEHICLE PATH

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SECTION 2

LAUNCH
(10-50-01)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:

	Task
All	All

Additional information:

This procedure consists of the following task:

01-1. Launch aircraft.

NOTE	Task
Suitable substitutes for MIL-F-3747 (Traffic Baton) can be used.	All

Additional data:

	Task
AFI 11-218	All
TO 1300i-2-10JG-60-1	All
TO 1300i-2-32FI-00-1	All
TO 1300i-2-32GS-00-1	All

Personnel recommended:

	Task
Three	All

Person (A) performs task.

Person (B) assists person (A).

Person (C) assists person (A).

Safety conditions:

	Task
NOTE	
Personnel shall be familiar with aircraft danger areas per TO 1300i-2-71JG-00-1, 71-00-00, para 1-25 Aircraft Danger Areas.	All

Support equipment:

Nomenclature	PN	Specification	Qty	Task
Flashlight (Traffic Baton)	--	MIL-F-3747	2	All
Goggles	A-A-1110	--	AR	All
Paddles	3-82345	--	AR	All
Vest, High Visibility	--	MIL-S-43753	AR	All

Supplies:

Nomenclature	PN	Specification	Qty	Task
NA	--	--	--	--

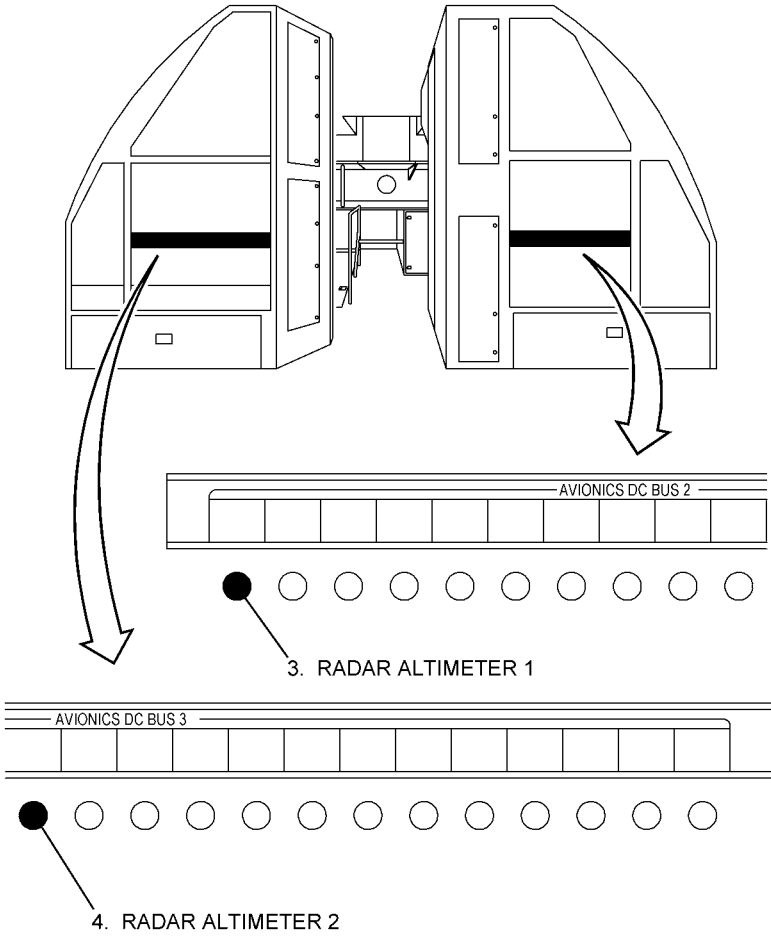
01-1. LAUNCH AIRCRAFT.

1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

3. (A) Close **RADAR ALTIMETER 1** circuit breaker on electrical power center, row **T**, column **40**.

4. (A) Close **RADAR ALTIMETER 2** circuit breaker on electrical power center, row **T**, column **27**.



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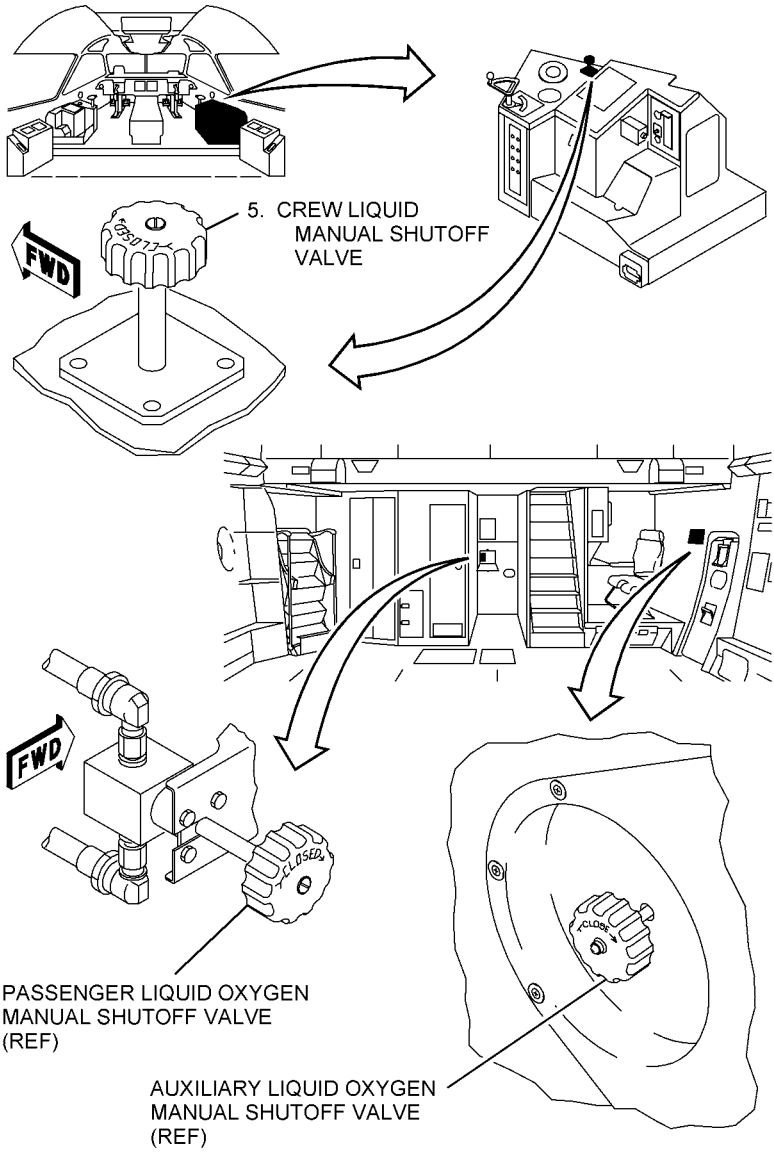
5. (A) Ensure crew, passenger and auxiliary liquid oxygen shutoff valves are open.



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NOTE

Ensure lower main landing gear lower posts and trunnion assemblies interface area is free of dirt and debris by wiping clean with a dry rag.

6. (B,C) Inspect main landing gear lower posts and trunnion assemblies.

SPECIAL INSTRUCTION. When crack is suspected, confirmation by non destructive inspection personnel is required. When evidence of heat (blistered, peeling, or brownish-black discolored paint) is found or after a crack is confirmed, contact local field Service/Engineering for disposition to determine requirements for continued operation.

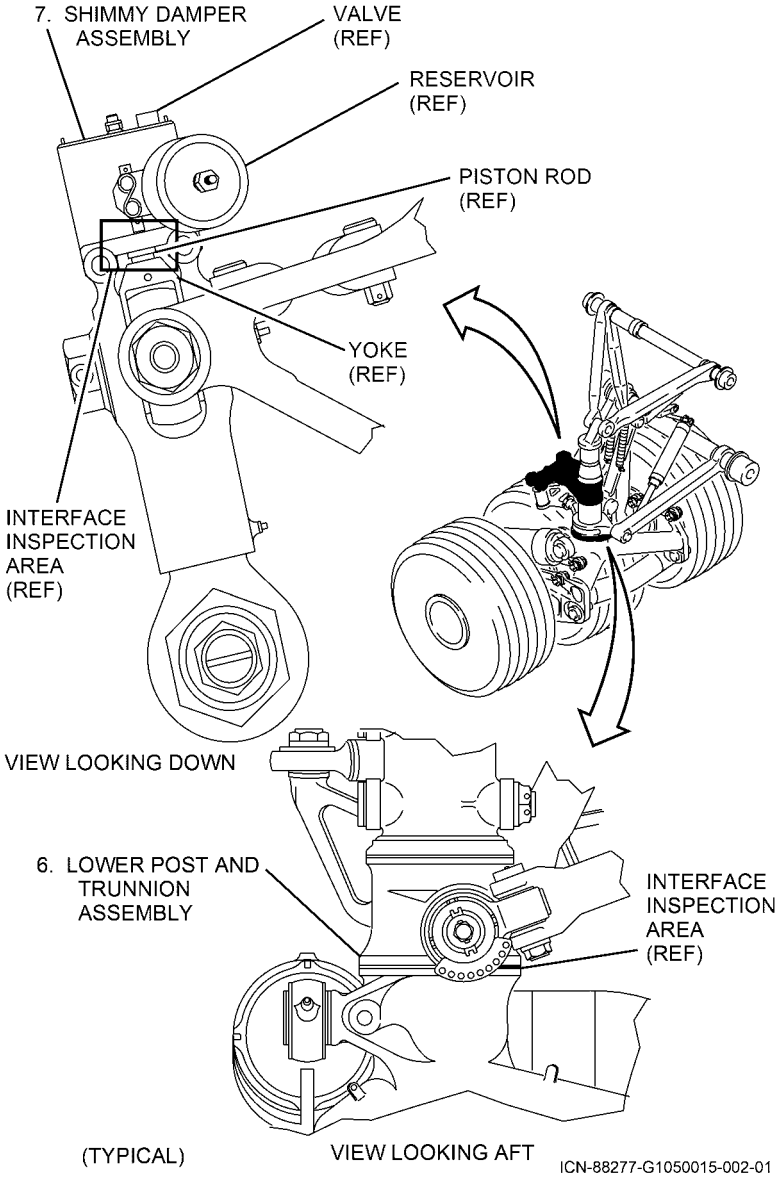
NOTE

Ensure main landing gear shimmy damper yoke interface area is free of dirt and debris by wiping clean with a dry rag.

7. (B,C) Inspect main landing gear shimmy damper assemblies.

- No complete break in piston rods and yokes (32-11-AC-00).
- Piston rods are in yokes (32-11-AC-00).
- Reservoir fluid level indicators are white level (32-11-AC-00).
- No leak in valves, reservoirs, and piston rods (TO 1300i-2-32GS-00-1, Chapter 2).

SPECIAL INSTRUCTION. When corrosion is found in piston rods and yokes, contact local field Service/Engineering for disposition to determine requirements for continued operation.


7. SHIMMY DAMPER ASSEMBLY
VALVE (REF)
RESERVOIR (REF)
PISTON ROD (REF)
YOKE (REF)
INTERFACE INSPECTION AREA (REF)
VIEW LOOKING DOWN
6. LOWER POST AND TRUNNION ASSEMBLY
INTERFACE INSPECTION AREA (REF)
(TYPICAL)
VIEW LOOKING AFT
ICN-88277-G1050015-002-01

CAUTION

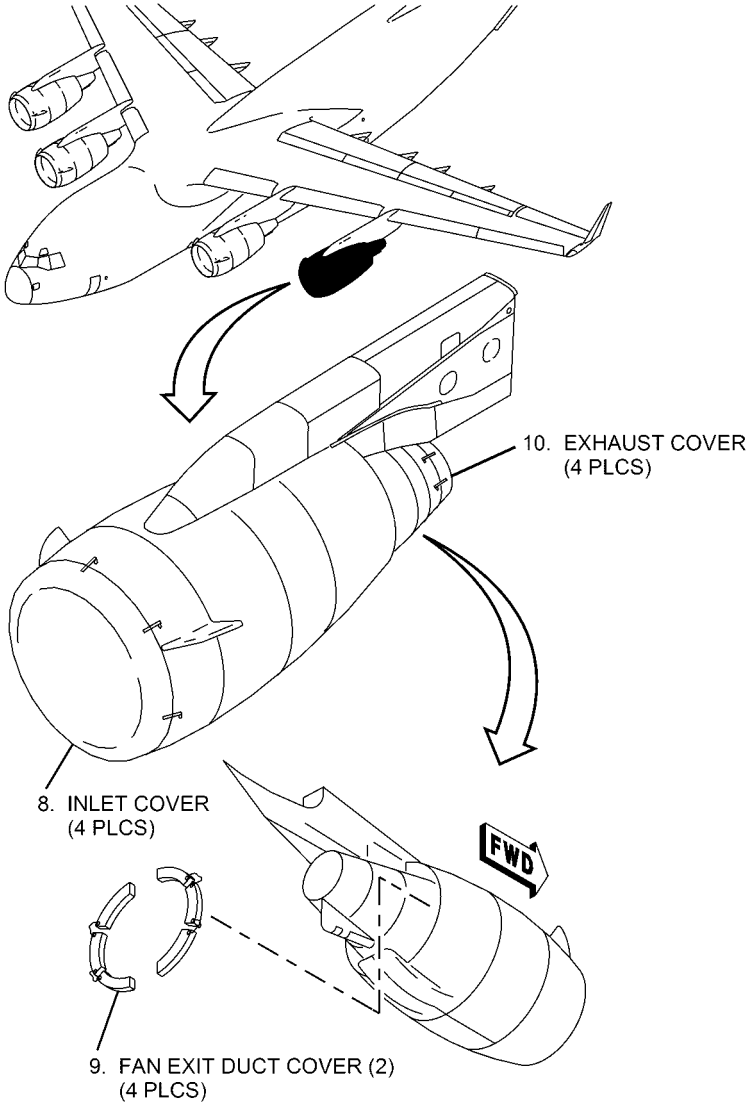
When icing conditions exist, engine covers and pitot tube covers must remain installed for as long as possible prior to engine start. Failure to comply may cause damage to equipment.

8. (B) Remove inlet covers.

9. (B) Remove fan exit duct covers.

10. (B) Remove exhaust covers.

10A. (B) Ensure area around engine inlet, fan exit, and exhaust are free of foreign objects. Ensure quantity of seven quick release pins are attached to each inlet cover and six quick release pins are attached to each exhaust cover.

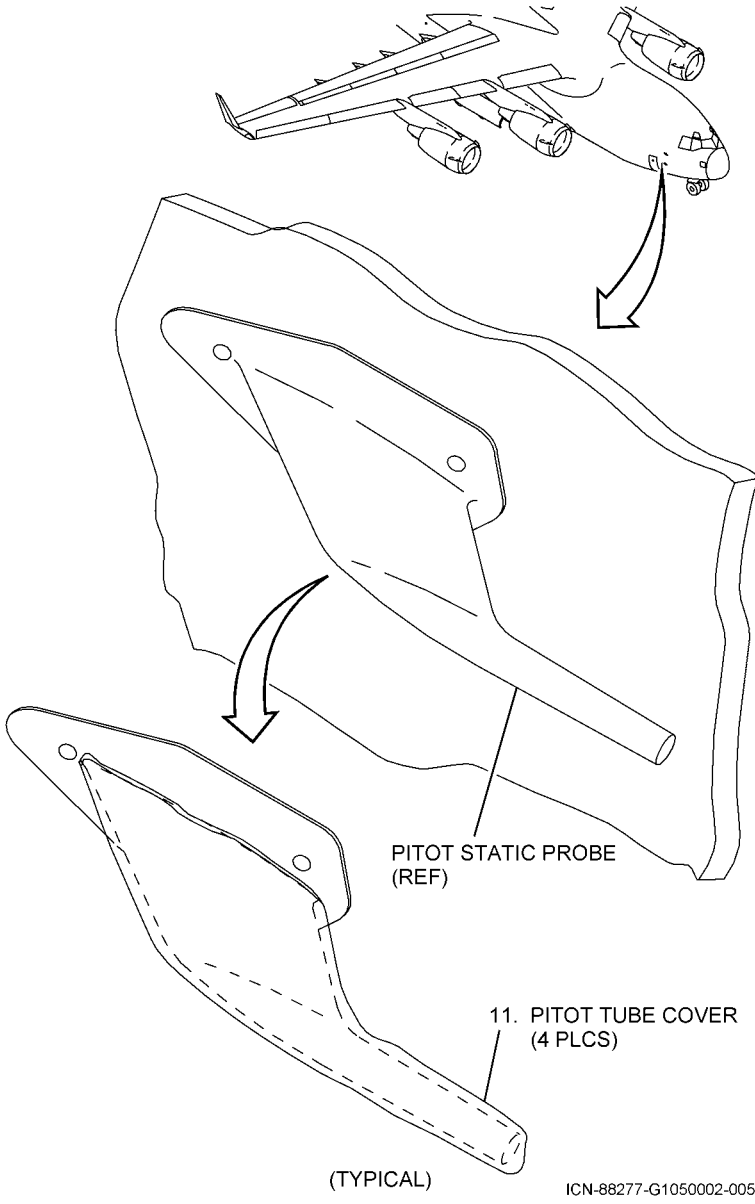


ICN-88277-G1050001-006-01

CAUTION

When icing conditions exist, engine covers and pitot tube covers must remain installed for as long as possible prior to engine start. Failure to comply may cause damage to equipment.

11. (B) Remove pitot tube covers.


PITOT STATIC PROBE
(REF)
11. PITOT TUBE COVER
(4 PLCS)
(TYPICAL)
ICN-88277-G1050002-005-01

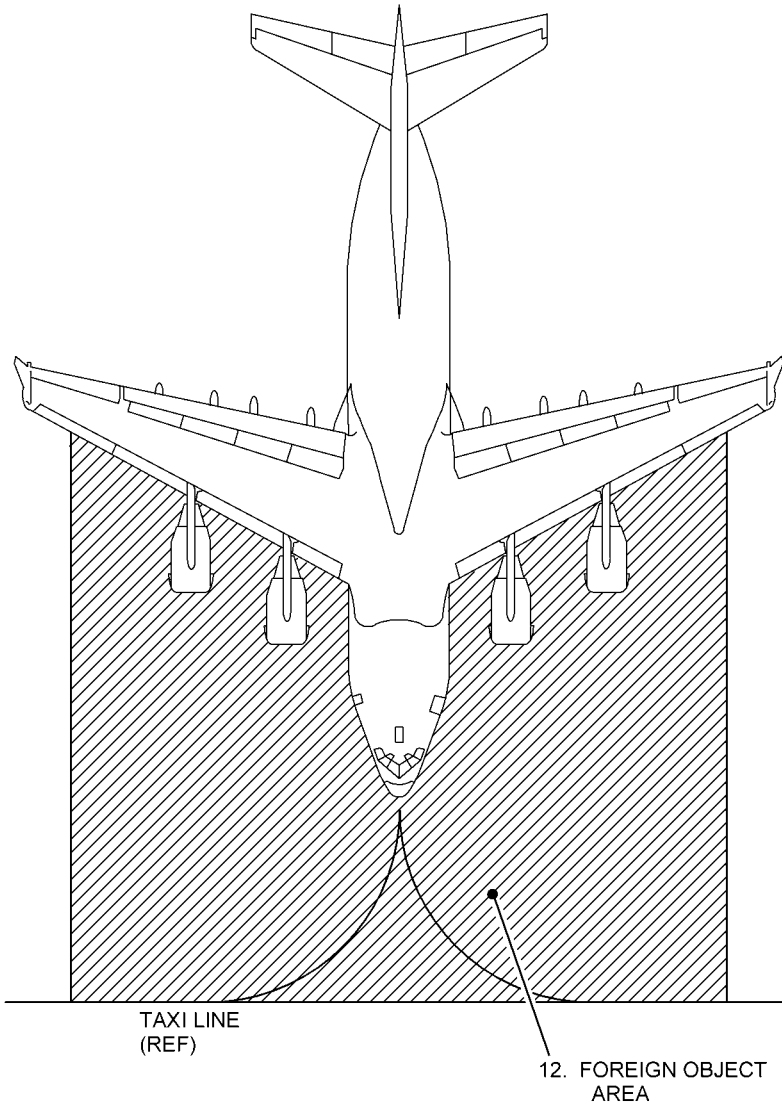
12. (A,B,C) Ensure aircraft taxi route and area around and under aircraft engines are free of foreign objects, including ice and snow, prior to engine start.

13. Remove ice/snow from aircraft as required (10-51-01).

WARNING

Positive communication shall be established between team members prior to and during the launch procedure. Failure to comply may cause injury to personnel and damage to aircraft.

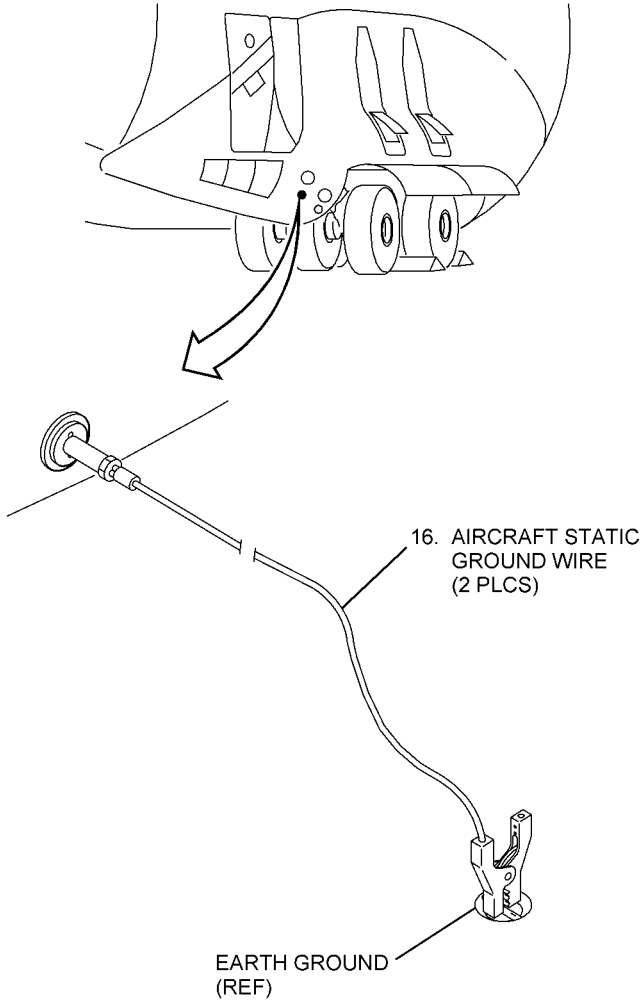
14. (A) Establish positive communication between all team members prior to and during the launch procedure.



ICN-88277-G1050003-005-01

15. Disconnect and remove external electrical power unit, heating unit, and ground air conditioning unit, as required (10-61-01, task 01-2).

16. (B) When installed, disconnect aircraft static ground wires from earth ground and aircraft.



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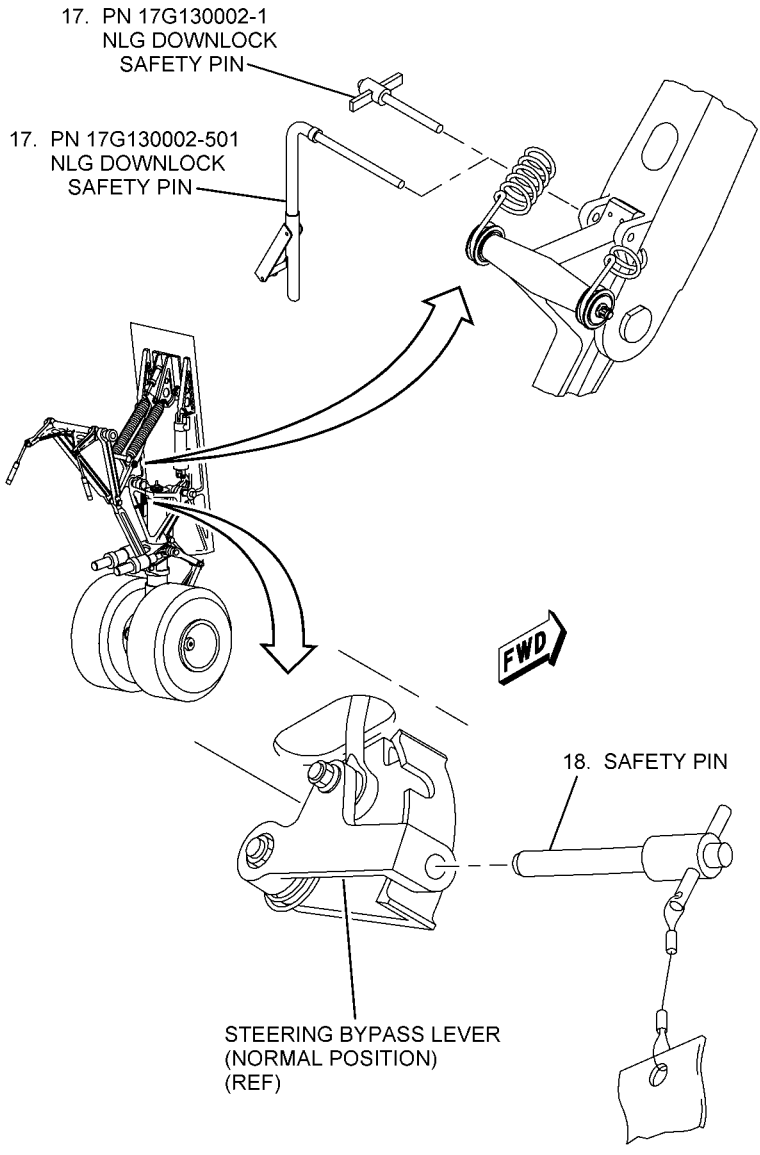
17. (B) Remove Nose Landing Gear (NLG) downlock safety pin, upon signal from aircraft commander.

18. (B) Remove safety pin and position NLG steering bypass level to normal position, upon signal from aircraft commander.



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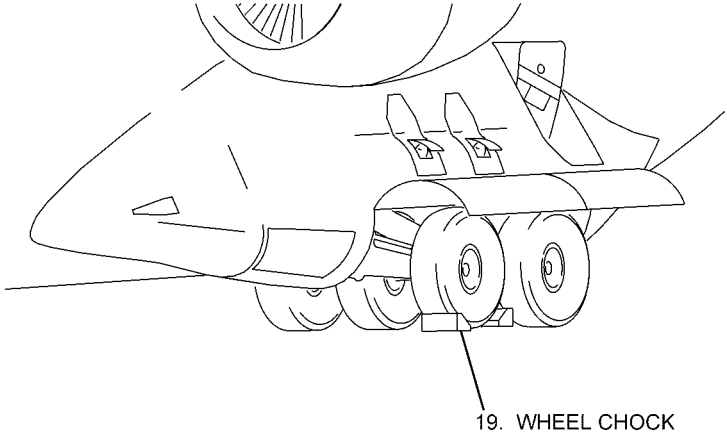
19. (B) Remove wheel chocks upon signal from aircraft commander.



(TYPICAL)

ICN-88277-G1050004-006-01

20. (C) Position fire extinguisher forward of nose of aircraft and ensure all engines are in view.

WARNING

When pneumatic air cart is used to facilitate engine start, move clear of aircraft after starting engine number 1 and/or number 2, but before starting engine number 3 and/or number 4. Failure to comply may cause injury to personnel and damage to aircraft.

NOTE

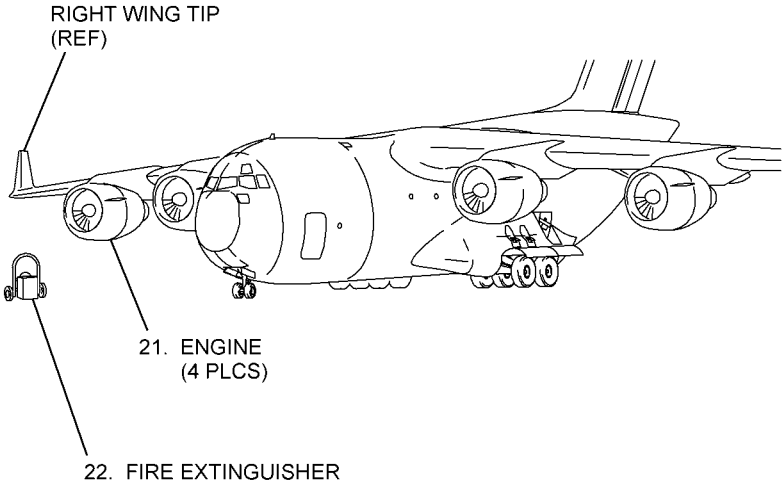
When aircraft auxiliary power unit is inoperative, an external pneumatic air cart may be used to facilitate engine start.

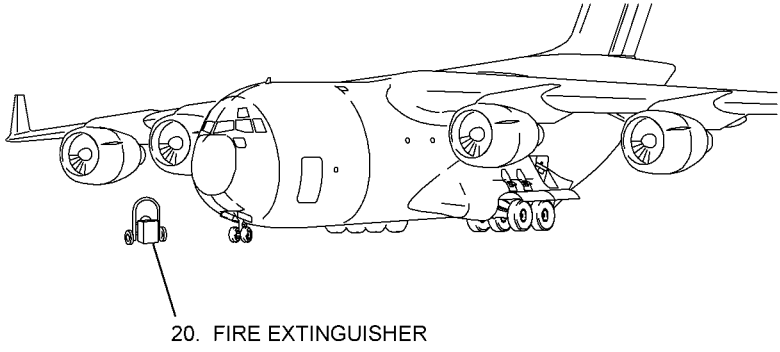
20A. (A,B) Connect external pneumatic air (10-64-01, task 01-1).

21. (B) Upon request from aircraft commander, verify engines are clear to start. Verify engine inlet danger area and engine blast area are clear refer to TO 1300i-2-71JG-00-1, 71-00-00, para 1-25 Aircraft Danger Areas. Observe engine start - report all abnormal or suspect conditions to aircraft commander to include – engine leaks beyond limits, smoke, flames, or unusual noises/bangs.

21A. (A,B) Disconnect external pneumatic power (10-64-01, task 01-2).

22. (C) After completion of engine start cycle, move fire extinguisher off of right wing tip and remain in position until auxiliary power unit operations are complete.





ICN-88277-G1050005-008-01

WARNING

- Marshaler shall be positioned in a safe area to perform the task and in view of the aircrew at all times. Failure to comply may cause injury to personnel or damage to equipment.

- When aircraft is performing backing maneuvers, eye protection is required due to potential flying debris hazard. Failure to comply may cause injury to personnel.

CAUTION

- Wing walkers are required (AFI 11-218) at each wing tip when taxiing aircraft from obstructed area or when obstruction is within 25 feet of aircraft. Failure to comply may cause damage to equipment.

- Aircraft shall maintain 25 feet clearance in reverse taxi. Failure to comply may cause damage to equipment.

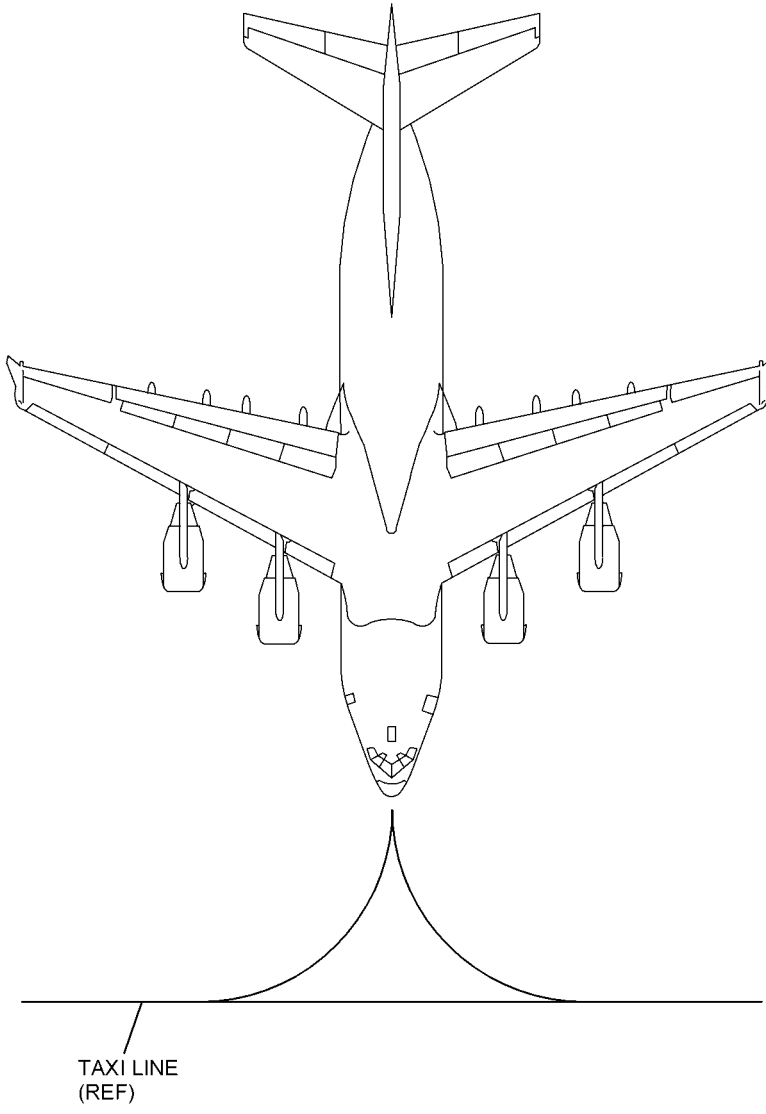
- When observing obstacle separation during taxi, separation from any obstacle must be viewed laterally from closest point on the aircraft to maintain the proper 25 feet clearance. Failure to comply may cause damage to equipment.

- During the turn of an aircraft, the tail flash meets or slightly exceeds the distance of the wing tip based on the type of turn being made. Failure to correctly maintain obstacle distance may cause damage to equipment.

23. (A) Marshal aircraft to taxing area.

24. (A,B,C) Ensure aircraft parking area is free of foreign objects and dropped objects.

    - Monitor wing tip and tail clearance, when obstructed.



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SNOW AND ICE REMOVAL (10-51-01)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:

	Task
All	All

Additional information:

This procedure consists of the following tasks:

01-1. Snow and ice removal using calavar/reachall.
01-2. Snow and ice removal with engines running.
01-3. Snow and ice removal using ER2875.
01-4. Snow and ice removal from engine inlets.
01-5. Snow and ice removal from horizontal stabilizer when high reach platform not available.
01-6. Snow and ice removal from horizontal stabilizer when high reach platform and portable deicing kit not available.
01-7. Snow and ice inspection of horizontal stabilizer.

NOTE	Task
• This task is typical for removing ice and snow from left and right sides of aircraft.	01-1, 01-2, 01-3, 01-4, 01-5
• When using multiple vehicles for deicing/anti-icing task, the task supervisor will coordinate multiple vehicle movement to ensure the safety of the aircraft and vehicles. Refer to paragraph 1-4 for optional deicing vehicle path.	01-1, 01-2, 01-3, 01-4, 01-5
• This task does not replace typical snow and ice removal tasks for the horizontal stabilizer. This task shall only be used when high reach capabilities and portable deicing kits are not available.	01-6

NOTE - Continued

	Task
• This task may not remove all snow and ice from the horizontal stabilizer, allow for proper drainage, or prevent trapped fluids. Any frozen contamination remaining on the horizontal stabilizer will introduce unknown aerodynamic characteristics, which may render the aircraft unsafe for takeoff.	01-6
• Snow and ice removal vehicles, with cabs/nozzles at maximum extension and positioned below horizontal stabilizer, require fluids to be sprayed in an upward, arching pattern, resulting in loss of fluid effectiveness due to heat loss, inadequate pressure and improper application angle. When this task is used to deice horizontal stabilizer, a visual inspection is required to ensure all freezing precipitation or frost contamination is removed.	01-6

Additional data:

	Task
TO 1300i-2-23GS-00-1-1	01-1, 01-2, 01-3, 01-5
TO 1300i-2-00JG-00-1	01-5, 01-7
TO 1300i-2-23JG-40-1	01-1, 01-2, 01-3, 01-5, 01-6, 01-7
TO 1300i-2-27JG-40-1	01-1, 01-3, 01-5, 01-6

	Task
TO 35E17-6-41	01-2, 01-3
TO 35E17-12-1	01-1, 01-2
TO 42C-1-2	01-1, 01-2, 01-3, 01-4, 01-5, 01-6

Personnel recommended:

	Task
Four	01-1
Person (A) supervisor.	
Person (B) deicing truck operator.	
Person (C) deicing/HABS boom operator.	
Person (D) Calavar/Reachall operator.	
Four	01-2
Person (A) supervisor.	
Person (B) deicing truck operator.	
Person (C) deicing boom operator.	
Person (D) spotter/marshaller.	
Three	01-3
Person (A) supervisor/(spotter).	
Person (B) deicing truck operator.	
Person (C) deicing/Airplus boom operator.	
Two	01-4

	Task
Person (A) supervisor.	
Person (B) H-1 heater operator.	
Three	01-5, 01-6
Person (A) supervisor.	
Person (B) deicing truck operator.	
Person (C) deicing hose/gun assembly operator.	
One	01-7

Safety conditions:

	Task
WARNING	
• Any frozen contamination remaining on horizontal stabilizer will introduce unknown aerodynamic characteristics, which may render aircraft unsafe for takeoff. All freezing precipitation or frost contamination shall be removed, complying with the clean aircraft concept. Failure to comply may cause injury to personnel and damage to aircraft.	01-6
• MIL-A-8243 Type I/II and AMS 1424 Type I deicing fluids are toxic. Whenever possible, all personnel shall stay on upwind side of aircraft during deicing fluid application. Personal Protective Equipment (PPE) shall be worn by all personnel exposed to deicing fluid during application procedures. Contact with skin and eyes shall be avoided. When deicing fluid comes in contact with skin or eyes, flush with clean water. When irritation occurs, seek immediate medical aid. Failure to comply may cause injury to personnel.	01-1, 01-2, 01-3, 01-4, 01-5, 01-6

WARNING - Continued

• As with any other chemical, the use of PPE is mandatory to perform deicing procedures to protect eyes and skin or prevent inhalation. The applicable Safety Data Sheet (SDS) and AFMAN 91-203 (Chapter 14) will identify special protection information. If unique local conditions or deicing equipment make compliance with the PPE unnecessary or impractical, contact the Bio-Environmental Engineer and Base Safety Office to determine the required precautions. Failure to comply may cause injury to personnel.	01-1, 01-2, 01-3, 01-4, 01-5, 01-6
• Personnel shall not attempt to approach or open crew door until approval has been received from aircraft crew. Differential cabin pressure may cause crew door to open with increased pressure. Failure to comply may cause injury to personnel and damage to aircraft and equipment.	All
• When hydraulic power is applied, communication between deicing ground crew and designated aircrew or ground crew member on aircraft shall be maintained at all times during this procedure. Failure to comply may cause injury to personnel and damage to aircraft and equipment.	01-1, 01-2, 01-3, 01-4, 01-5, 01-6
• Communication between deicing supervisor and deicing vehicle driver shall be maintained at all times during this procedure. Failure to comply may cause injury to personnel and damage to aircraft and equipment.	01-1, 01-2, 01-3, 01-4, 01-5, 01-6

Task

WARNING - Continued

- Communication between deicing vehicle driver and boom operator shall be maintained at all times during this procedure. Failure to comply may cause injury to personnel and damage to aircraft and equipment. — 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

- Ice and snow shall be removed from fuselage prior to takeoff. A thin coating of frost is permitted on fuselage provided letter and paint lines are visible. Light frost up to 1/8 inch thick caused by supercooled fuel is permitted on lower wing surface when fuselage and all other critical surfaces are free of any icing. When deicing is required on any other aircraft surface, underwing frost shall also be removed. Failure to comply may cause injury to personnel and damage to aircraft and equipment. — 01-1, 01-2, 01-3, 01-4, 01-5

- When heavy accumulation of snow or ice is present (6 inches of snow or 1 inch of ice) on aircraft surfaces, deicing procedures shall begin at tail of aircraft and rear of fuselage to prevent tail tipping prior to moving to forward section of aircraft. Failure to comply may cause injury to personnel and damage to aircraft and equipment. — 01-1, 01-2, 01-3, 01-4, 01-5

- Upper wing surface, wing leading edge, vertical and horizontal stabilizer surface, vertical and horizontal stabilizer leading edge, and rudder are critical surfaces. Use sufficient quantity of deicing fluid to ensure removal of ice from all surfaces. Failure to comply may cause injury to personnel and damage to aircraft. — 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

WARNING - Continued

- Ensure deicing truck fluid heater (TM1800 only) is turned off prior to approaching the aircraft to perform deicing task. Failure to comply may cause injury to personnel and damage to aircraft. — 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

- Blowing snow caused by the Hot Air Blast System (HABS) system may severely reduce visibility for truck operator and boom operator. Constant radio contact between truck operator and boom operator is imperative for safe operations. Failure to comply may cause injury to personnel and damage to aircraft and equipment. — 01-1, 01-2, 01-3, 01-4, 01-5

- When operating the HABS system, double ear protection is required when operating MA-1A turbine compressor. Failure to comply may cause injury to personnel. — 01-1, 01-2, 01-3, 01-4, 01-5

- Always spray either perpendicular to surface or from forward to aft of aircraft surface. Spraying deicing fluid from rear to front of a wing or tail surface may result in water or deicing fluid being trapped in control surface cavities. Failure to comply may cause injury to personnel and damage to aircraft. — 01-1, 01-2, 01-3, 01-4, 01-5

Task

WARNING - Continued

- Typically, deicing truck approach to aircraft is with deicing truck operator side toward aircraft. Multiple truck operations and aircraft operations (loading, maintenance, etc.) may dictate an approach toward or from passenger's side of vehicle. This may be safely accomplished provided there is constant radio contact between driver, basket operator, and task supervisor. Any time the truck driver or basket operator feels unsafe, they will ensure the task supervisor is in position to spot for vehicle movement. Failure to comply may cause injury to personnel and damage to aircraft. — 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

- Do not extend ER2875 deicing boom above 42 feet anytime winds exceed 25 MPH. Failure to comply may cause injury to personnel and damage to aircraft. — 01-2, 01-3

- Ensure left and right aircon pack switchlight, ISOL switchlight and APU switchlight on environmental panel are selected off. Failure to comply may cause injury to personnel and damage to aircraft. — 01-1, 01-3

CAUTION

- Sharp instruments such as picks, knives, or screwdrivers shall not be used to loosen ice formation from aircraft surfaces. Failure to comply may cause damage to aircraft. — 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

- All doors and hatches shall be closed prior to beginning deicing procedures. Failure to comply may cause damage to aircraft and equipment. — 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

CAUTION - Continued

- Aircraft flight deck windows, cabin windows, windscreen, seals, plexiglass, and plastic may be damaged by direct application of HABS/hot deicing fluid. Do not apply hot air or deicing fluid directly to windows, windscreen, seals, plexiglass, or plastic surfaces. Contact with windows, windscreen, seals, plexiglass, or plastic will cause surface to glaze or soften. Failure to comply may cause damage to aircraft. 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

- During Airplus or HABS operation, maintain a minimum of five feet between nozzle and all aircraft surfaces. For HABS operation, not maintaining proper nozzle distance and not moving the nozzle in a sweeping motion will allow air to concentrate in one area which may result in melting snow. This may lead to the formation of ice in areas difficult to detect. Do not direct forced air perpendicular to aircraft surfaces. Areas such as the fuselage may not be designed to withstand impact of such systems. Exercise caution when using air source to blow snow at or near openings such as engine inlets/ exhaust, APU inlets/exhausts, trailing edge control surface cavities, etc. Snow may be trapped and subsequently melt forming ice. Failure to comply may cause damage to aircraft and equipment. 01-1, 01-2, 01-3, 01-4, 01-5

- Do not direct a solid fluid stream normal to surface, rather apply by spraying at low angles. Use the lowest flow rate as possible to achieve deicing of aircraft, not to exceed 40 gallons per minute at pressures not to exceed 180 psi. Failure to comply may cause damage to aircraft surfaces. 01-1, 01-2, 01-3

Task

CAUTION - Continued

- Do not use high pressure spray to ″batter″ ice and snow off aircraft surfaces. Failure to comply may cause damage to aircraft surfaces. — 01-1, 01-2, 01-3, 01-4, 01-5

NOTE

- Ensure truck mounted spraying unit comes serviced with hot mix. Hot mix refers to heated deicing fluid, mixed with regards to the Estimated Lowest Operational Use Temperature (ELOUT) established for each authorized mixture ration (fluid/water). — 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

- Deicing fluid and hot water must be heated to 140-180 degree Fahrenheit (60-82 degree Celsius), at the nozzle, for best results in ice or snow removal. A fine to medium spray is recommended for best dispersion of the fluid across a large area of ice or snow for maximum melting effect. A solid stream is recommended for flushing ice or snow from aircraft surfaces. — 01-1, 01-2, 01-3, 01-4, 01-5, 01-6

- Deicing fluids shall not be used to remove heavy accumulations of snow. Snow absorbs wasteful amounts of fluid which form a slush that is very difficult to remove. In time, slush (depending on ambient temperature) will refreeze and get into control surfaces causing additional difficulty. Always consider either HABS, Airplus, or mechanical means of removing snow before proceeding with fluids. — 01-1, 01-2, 01-3, 01-4, 01-5

- Personnel shall be familiar with TO 35E17-6-41 prior to operating the ER2875 and qualified for the task prior to performing maintenance procedures in this manual while using the Extended Reach deicing vehicle. — 01-2, 01-3

NOTE - Continued

	Task
• When HABS system is selected for use, ensure operator is familiar with all WARNINGS, CAUTIONS, and NOTES associated with the HABS system. Personnel will be familiar with TO 35E17-12-1 prior to performing snow removal using the HABS system. HABS is not a substitute for deicing with deicing fluid.	01-1, 01-2, 01-3, 01-4, 01-5
• Personnel shall be familiar with TO 42C-1-2 prior to performing deicing procedures.	01-1, 01-2, 01-3, 01-4, 01-5, 01-6
• Personnel shall be familiar with FAA de-ice/anti-ice fluid holdover times prior to performing de-icing procedures. Located at website: https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/deicing/.	01-1, 01-2, 01-3, 01-4, 01-5, 01-6
• Flight control surfaces shall be faired to enhance fluid drainage and prevention of fluid entrapment during deicing procedure.	01-1, 01-2, 01-3, 01-4, 01-5
• Use of HABS with MA-1A turbine compressor (forced air system) is an effective method for snow removal. When selected for use, ensure operator is familiar with all WARNINGS, CAUTIONS, and NOTES associated with HABS snow removal system. Personnel shall be familiar with TO 35E17-12-1 prior to performing snow removal using HABS system. HABS is not a substitute for deicing with deicing fluid.	01-1, 01-2

Support equipment:

Nomenclature	PN	Specification	Qty	Task
Adapter Set, Deicing Hose	17G010103-1	--	1	01-1
Calavar (Primary)	125S-USAF	--	AR	01-1
Reachall (Alternate)	AP120HMHTG	--	AR	01-1
Deicing Kit, Portable-Horizontal Stabilizer	17G010114-1	--	--	--
Deicing Nozzle	BGH-HT100-PD	--	1	01-5
Hose Assembly	F3210E05F120	--	1	01-5
Deicing Kit, Portable-Horizontal Stabilizer	17G010119-1	--	--	--
Combination Nozzle	BGH-HT120-PD	--	1	01-5
Hose Assembly	P2930101161616-1800	--	1	01-5
Goggles	A-A-1110	--	1	01-5

Nomenclature	PN	Specification	Qty	Task
H-1 Heater	H14	--	AR	01-4
Hose, Adapter Drain Fitting	BH6-61	--	1	01-5
Hose Assembly, Nonmetallic-Deicer	17G010097-1	--	1	01-1
Pail, Utility	A-A-59253	--	1	01-5
Truck, Deicing	ER2875	--	AR	01-2, 01-3
Truck, Deicing	GL1800	--	AR	01-1, 01-2, 01-5, 01-6
Truck, Deicing	TM1800	--	AR	01-1, 01-2, 01-5, 01-6

Supplies:

Nomenclature	PN	Specification	Qty	Task
Fluid, Aircraft, Deicing	--	AMS 1424, Type I	AR	01-1, 01-2, 01-3, 01-5, 01-6
Tag, Warning	--	--	6	01-5

01-1. SNOW AND ICE REMOVAL USING CALAVAR/REACHALL.

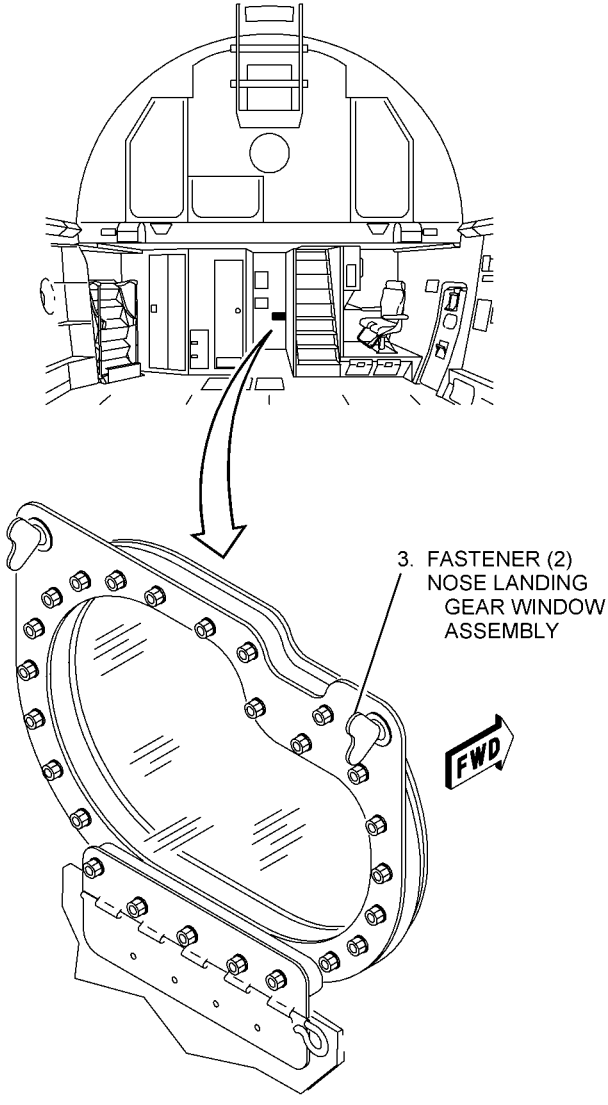
1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

NOTE

During snow and ice removal the nose landing gear window assembly may be opened to prevent the aircraft from slightly pressurizing when doors and windows are closed and avionics cooling fans are running.

3. (A) Loosen fasteners and open nose landing gear window assembly.



ICN-88277-G1051139-002-01

WARNING

Positive communication shall be established between team members prior to and during the snow and ice removal procedure. Failure to comply may cause injury to personnel and damage to aircraft.

NOTE

External or auxiliary power unit electrical power may be used to establish communications with the designated aircrew or ground crew member on board the aircraft.

4. Perform maintenance interphone operation (23-41-02, task 02-3).

5. (A) Ensure L PACK switchlight on ENVIR panel is not pressed in.

   - Flowline light is off.

6. (A) Ensure R PACK switchlight is not pressed in.

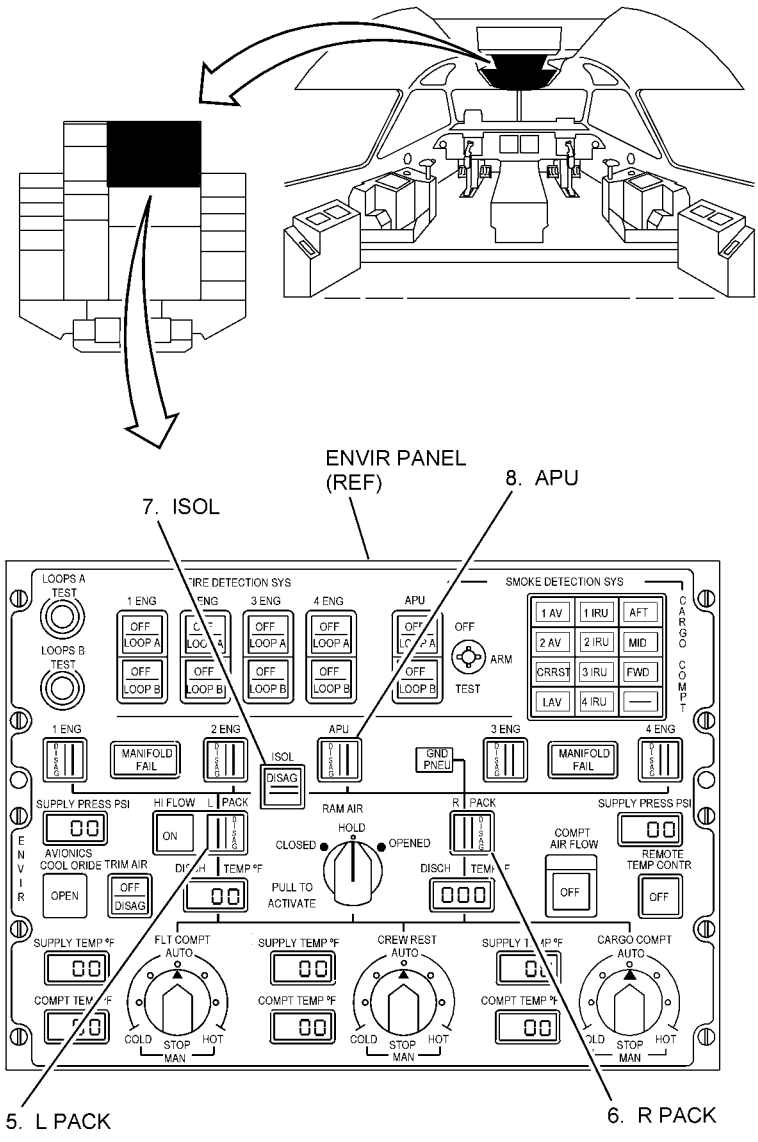
   - Flowline light is off.

7. (A) Ensure ISOL switchlight is not pressed in.

   - Flowline light is off.

8. (A) Ensure APU switchlight is not pressed in.

   - Flowline light is off.



ICN-88277-G1051137-002-01

WARNING

- Circuit breakers for the Fixed Installation Satellite Antenna (FISA) and Ka-Band Fuselage Mount Antenna (Ka FMA) aircraft equipped systems shall be opened prior to deicing to prevent Radio Frequency (RF) transmission of high intensity electromagnetic radiation. Failure to comply may cause injury to personnel.

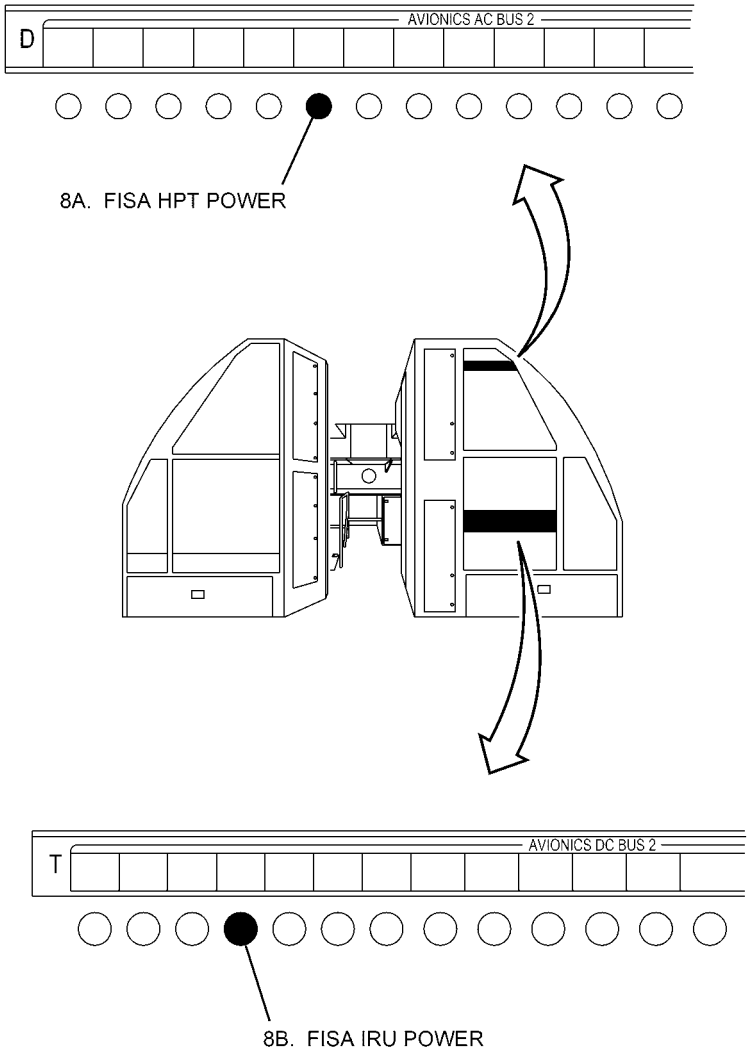
- When designated personnel (aircrew or ground crew) are positioned to monitor the opened circuit breakers on the Electrical Power Center (EPC) during the entire deicing procedure, warning tags are not required, otherwise warning tags shall be installed when leaving the EPC area. Failure to comply may cause injury to personnel.

NOTE

Steps 8A and 8B are only applicable to FISA equipped aircraft.

8A. (A) Open **FISA HPT POWER** circuit breaker on EPC, row **D**, column **45**, and attach warning tag, as required.

8B. (A) Open **FISA IRU POWER** circuit breaker on EPC, row **T**, column **43**, and attach warning tag, as required.



ICN-88277-G1051151-001-01

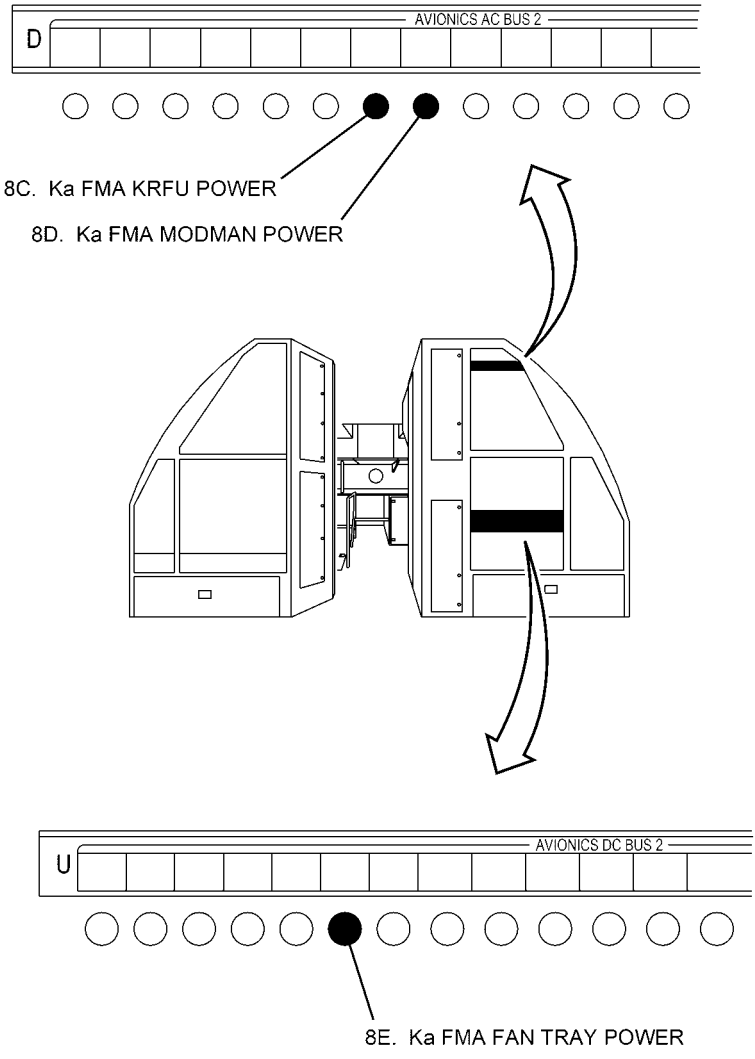
NOTE

Steps 8C, 8D and 8E are only applicable to Ka FMA equipped aircraft.

8C. (A) Open **Ka FMA KRFU POWER** circuit breaker on EPC, row **D**, column **46**, and attach warning tag, as required.

8D. (A) Open **Ka FMA MODMAN POWER** circuit breaker on EPC, row **D**, column **47**, and attach warning tag, as required.

8E. (A) Open **Ka FMA FAN TRAY POWER** circuit breaker on EPC, row **U**, column **45**, and attach warning tag, as required.



ICN-88277-G1051152-001-01

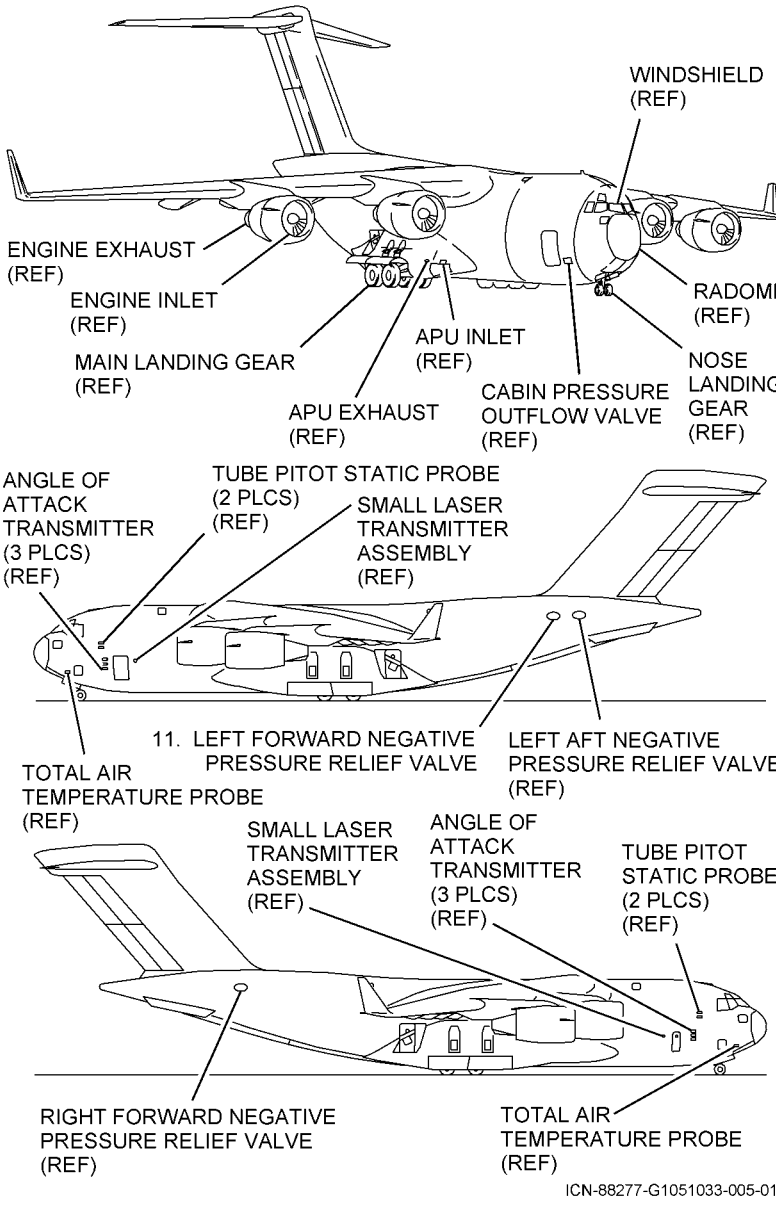
NOTE

During deicing procedures, ensure horizontal stabilizer is in the 4 degrees nose down position (leading edge of stabilizer 4 degrees up) to enhance proper drainage of deicing fluids and help prevent trapped fluids. When deicing maintenance task is completed, leaving the horizontal stabilizer in the 4 degrees nose down position enhances proper drainage of critical flight control surfaces.

9. Perform horizontal stabilizer operation (27-40-02).

10. Perform Engine Inlet snow and ice removal (task 01-4).

11. (A,B,C,D) Observe and avoid application of deicing fluid to negative pressure relief valves, cabin pressure outflow valve, engine inlet and exhaust, APU inlet and exhaust, main landing gear, nose landing gear, tube pitot static probes, angle of attack transmitters, total air temperature probes, small laser transmitter assemblies, radome, and windshield areas.



ICN-88277-G1051033-005-01

WARNING

When positioning Calavar/Reachall, a minimum of 30 feet shall be maintained between the end of fuselage tail and the Calavar/Reachall. Failure to comply may cause injury to personnel and damage to equipment.

NOTE

- The pattern of travel for movement of the deicing truck is critical to the safe and timely application of the deicing fluid. Use pattern indicated in this procedure for safest and most effective application of deicing fluid.

- When using multiple vehicles to deice the aircraft, refer to paragraph 1-4 for safe and effective application of deicing fluids.

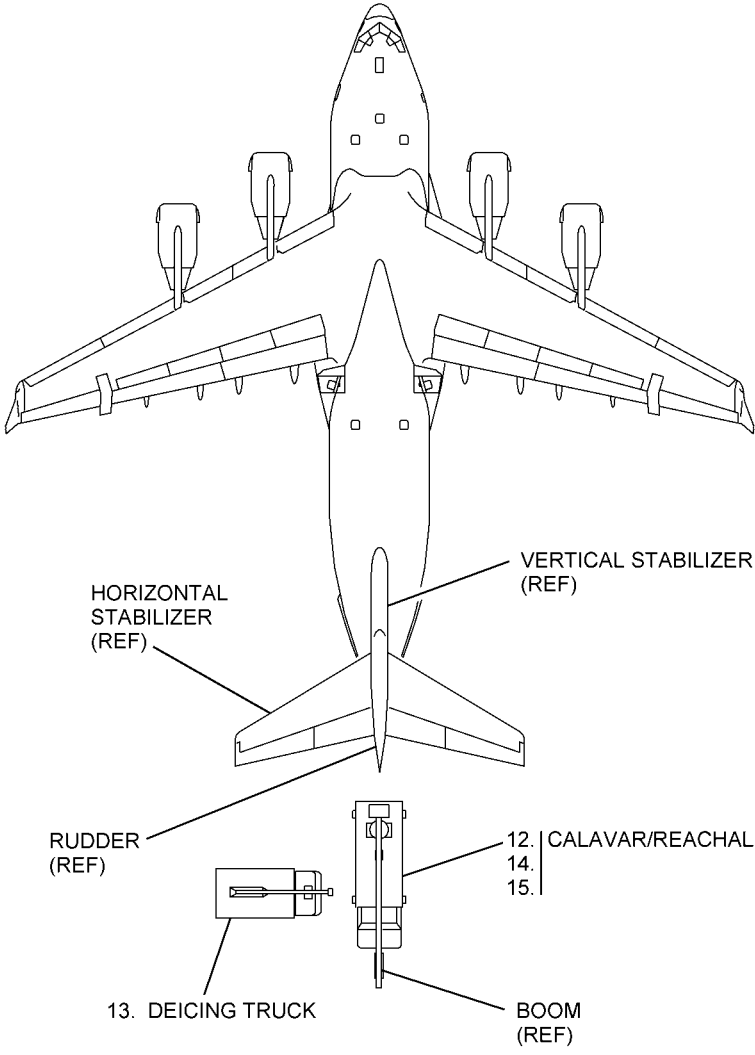
12. (A,D) Position Calavar/Reachall directly behind aircraft tail, and raise boom.

13. (Calavar) (A,B,C,D) Position deicing truck perpendicular to Calavar and connect deicing hose assembly between deicing truck basket and quick disconnect adapter on Calavar.

13. (Reachall) (A,B,C,D) Position deicing truck perpendicular to Reachall and connect deicing hose assembly and deicing hose adapters between deicing truck basket and quick disconnect adapter on Reachall.

14. (D) Using Calavar/Reachall, apply hot mix deicing fluid to upper surface and leading edge of horizontal stabilizer.

15. (A,B,C,D) Reposition Calavar/Reachall boom for effective deicing of the left vertical stabilizer surface, vertical stabilizer leading edge, and rudder.

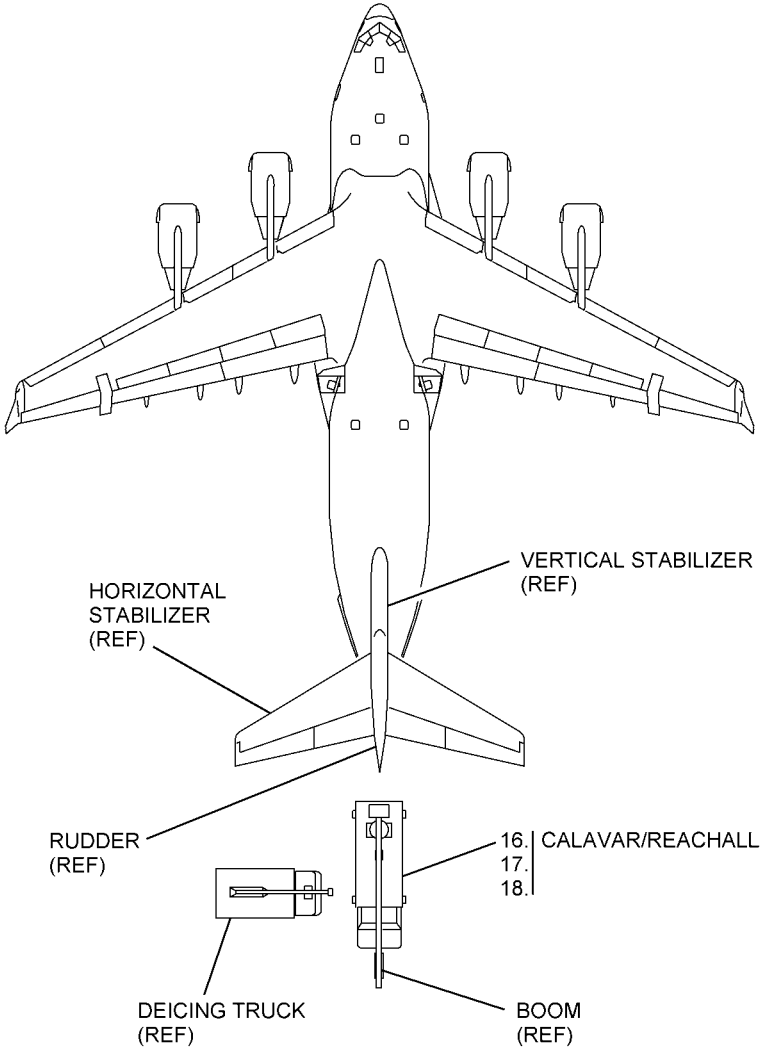


ICN-88277-G1051040-005-01

16. (D) Using Calavar/Reachall, apply hot mix deicing fluid to left vertical stabilizer surface, vertical stabilizer leading edge, and rudder. Start at the uppermost areas and work down and aft.

17. (A,B,C,D) Reposition Calavar/Reachall boom for effective deicing of the right vertical stabilizer surfaces, vertical stabilizer leading edge, and rudder.

18. (D) Using Calavar/Reachall, apply hot mix deicing fluid to right vertical stabilizer surface, vertical stabilizer leading edge, and rudder. Start at the uppermost area and work down and aft.



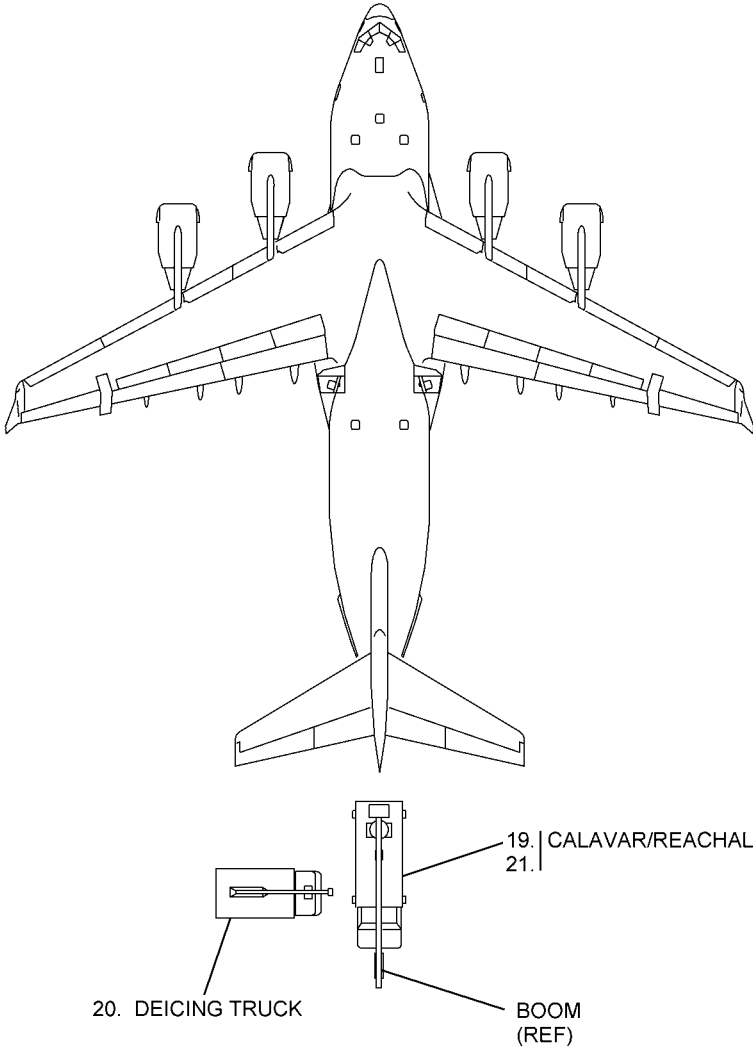
ICN-88277-G1051076-004-01

19. (A,B,C,D) Lower Calavar/Reachall boom and stow.

20. (Calavar) (B,C,D) Disconnect deicing hose assembly between deicing truck and quick disconnect adapter on Calavar.

20. (Reachall) (B,C,D) Disconnect deicing hose assembly and deicing hose adapters between deicing truck and quick disconnect adapter on Reachall.

21. (A,D) Remove Calavar/Reachall from aircraft area.



ICN-88277-G1051036-004-01

WARNING

Allow sufficient clearance between deicing truck and wing leading edge/engine nacelles to allow safe truck movement past wing leading edge/nacelles as indicated in truck movement diagram. Failure to comply may cause injury to personnel and damage to equipment.

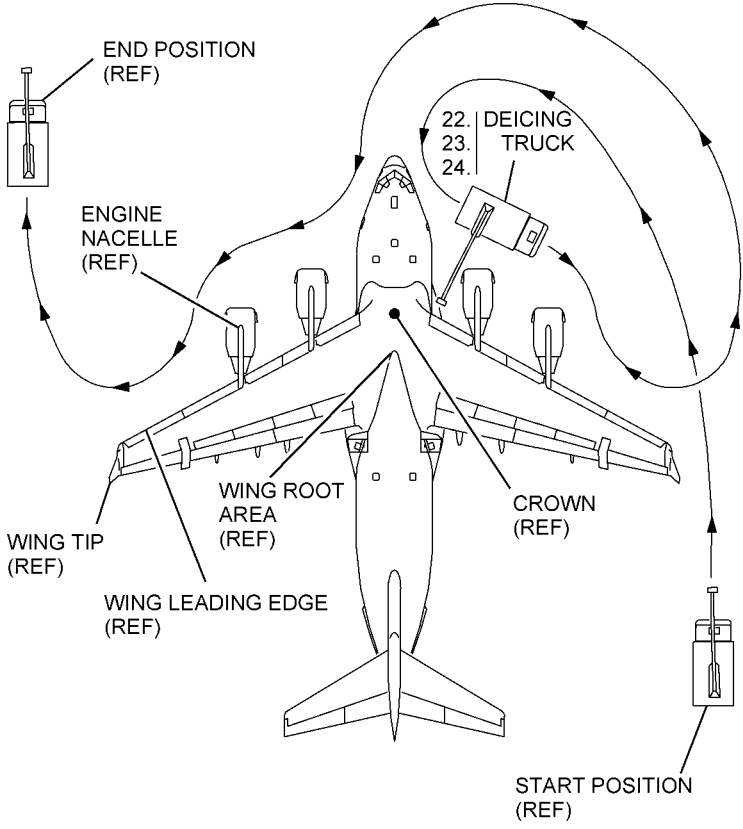
NOTE

When necessary to remove ice/snow from left and right inboard trailing edge of wing, reposition deicing truck as required to remove persistent snow/ice from these areas. Ensure spotter is in position for deicing these areas.

22. (A,B,C) Proceed around right wing tip and reposition deicing truck parallel to right forward wing root area facing right wing tip.

23. (C) Using deicing truck, start at the upper wing root area and apply hot mix deicing fluid to the upper wing surface. Starting at the crown of the wing, allow fluid to flow in all directions. Continue applying fluid, sweeping toward the wing tip.

24. (A,B,C) Proceed from wing root toward wing tip. Starting at the wing crest, apply fluid sweeping in a forward to aft and outboard direction. Allow the deicing fluid to flow ahead of area being sprayed to assist in the removal of heavy deposits of ice and frost. Remove all dislodged ice from engine nacelles to prevent freezing prior to engine start.



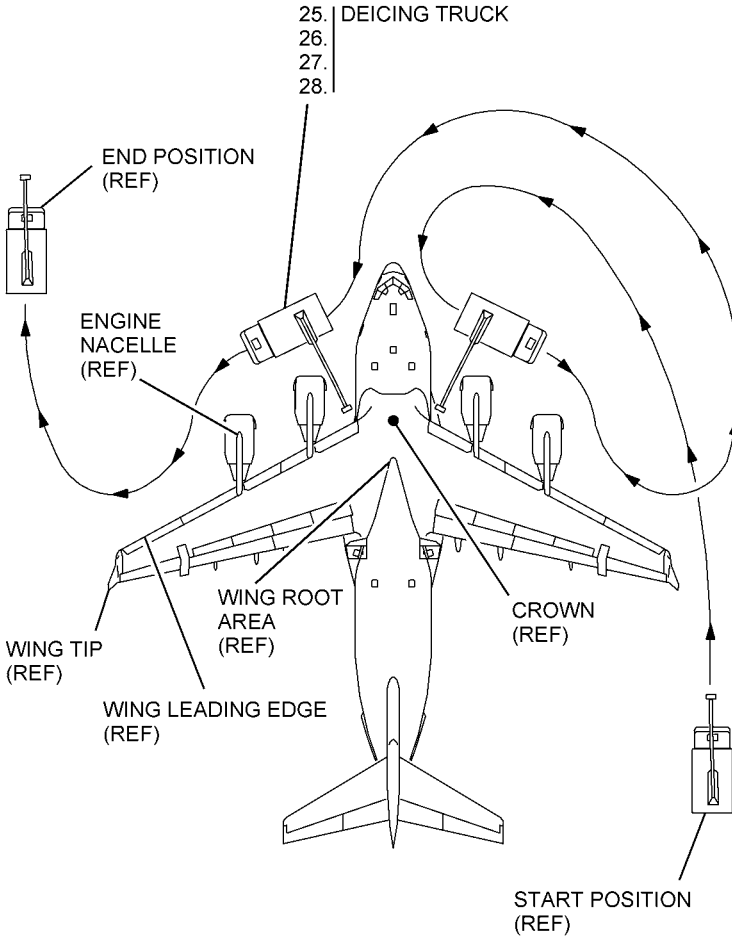
ICN-88277-G1051037-004-01

25. (A,B,C) Proceed around forward fuselage and reposition deicing truck parallel to left wing root area facing left wing tip.

26. (C) Using deicing truck, start at the upper wing root area and apply hot mix deicing fluid to the upper wing surface. Starting at the crown of the wing, allow fluid to flow in all directions. Continue applying fluid, sweeping toward the wing tip.

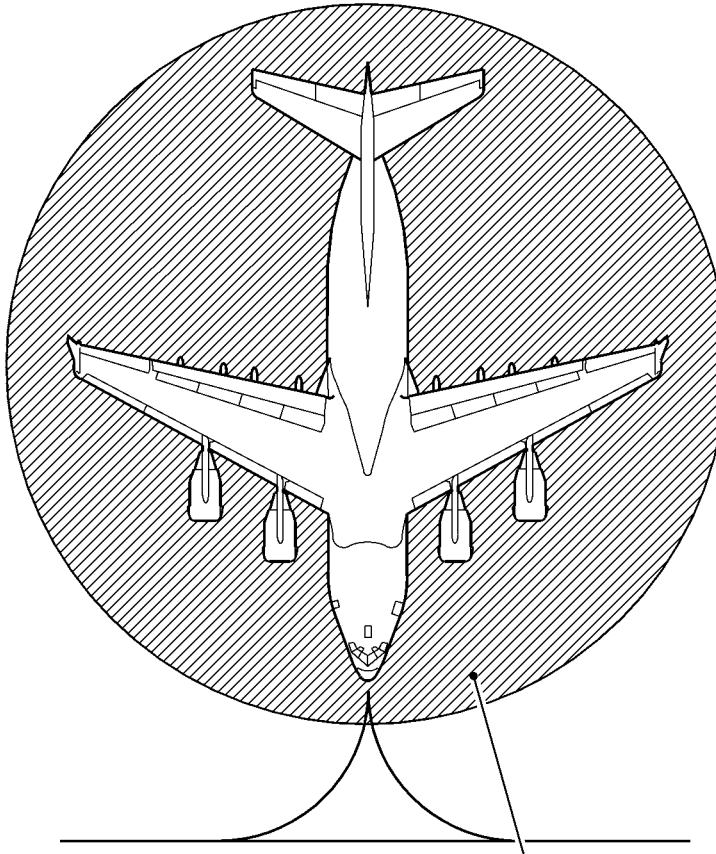
27. (A,B,C) Proceed from wing root toward wing tip. Starting at the wing crest, apply fluid sweeping in a forward to aft and outboard direction. Allow the deicing fluid to flow ahead of area being sprayed to assist in the removal of heavy deposits of ice and frost. Remove all dislodged ice from engine nacelles to prevent freezing prior to engine start.

28. (A,B,C) Remove deicing truck from aircraft area.



ICN-88277-G1051059-004-01

29. (A) Ensure aircraft deicing area is free from equipment, obstructions, and any foreign objects. Inform designated aircrew or ground crew member on the aircraft that the aircraft is clear.



29. AIRCRAFT DEICING AREA

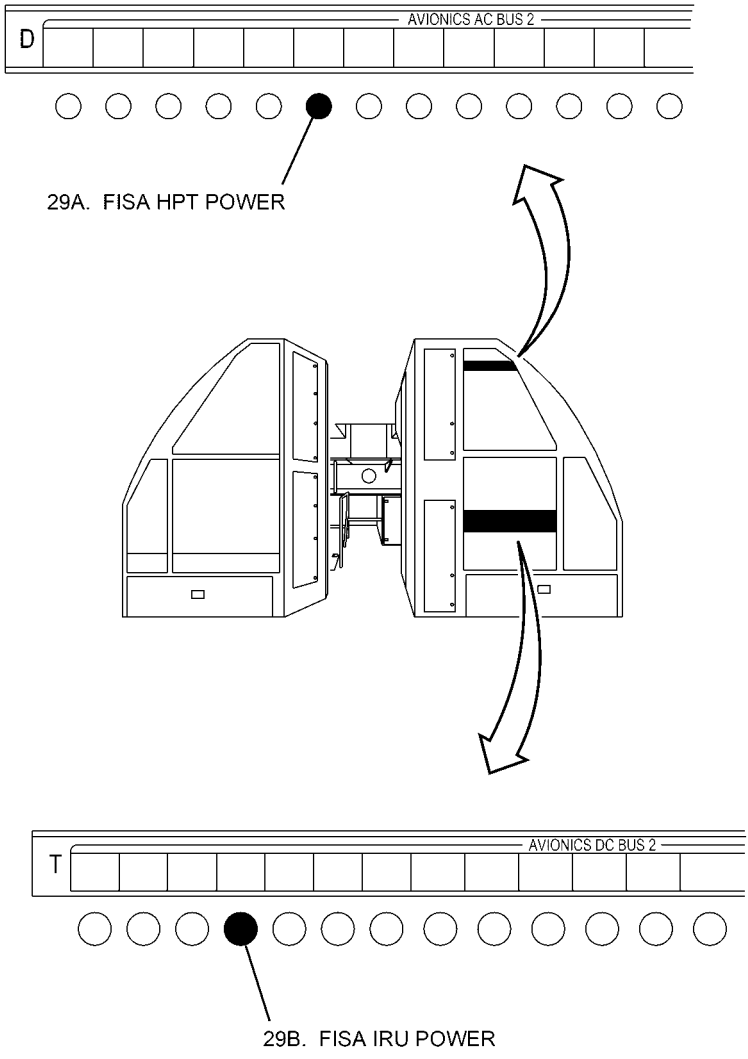
ICN-88277-G1051039-003-01

NOTE

- Ensure an information statement is entered in the AFTO Form/IMT 781A that the FISA circuit breakers are opened and collared to disable the system for non-FISA operational missions.
- The FISA HPT POWER and FISA IRU POWER circuit breakers will remain open and collared for deactivation of the system when not in use. When the reactivation of the system is required, refer to TO 1300i-2-23GS-00-1-1.
- Steps 29A and 29B are only applicable to FISA equipped aircraft.

29A. (A) Remove warning tag, as required, from **FISA HPT POWER** circuit breaker on EPC, row **D**, column **45**, and install circuit breaker collar.

29B. (A) Remove warning tag, as required, from **FISA IRU POWER** circuit breaker on EPC, row **T**, column **43**, and install circuit breaker collar.



ICN-88277-G1051153-001-01

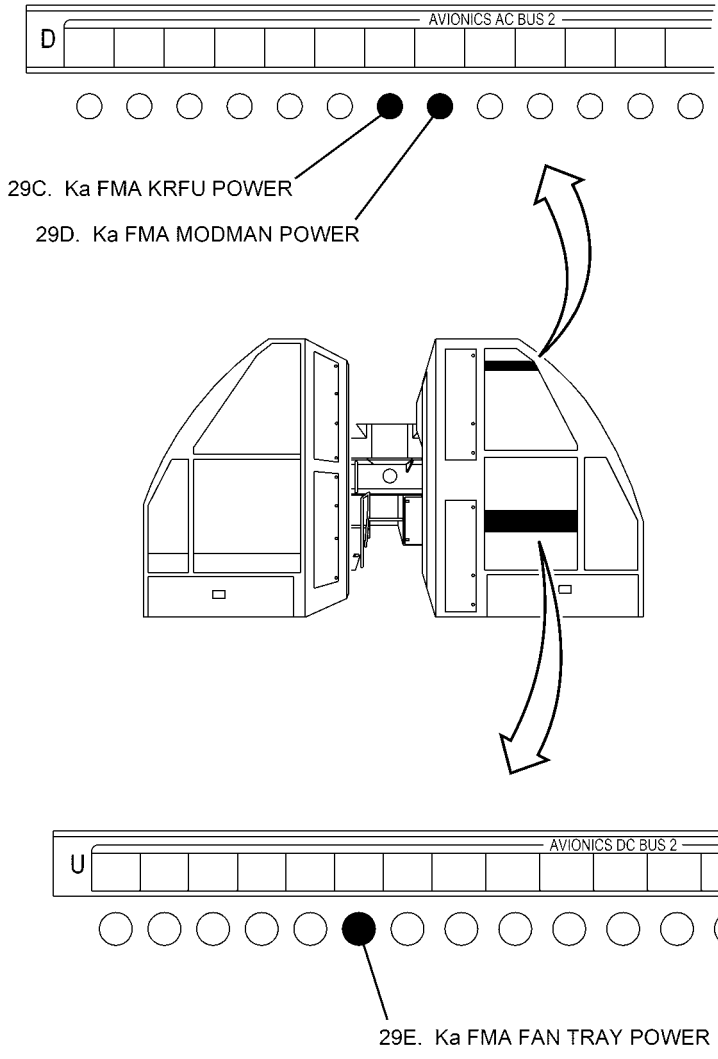
NOTE

- Ensure an information statement is entered in the AFTO Form/IMT 781A that the Ka FMA circuit breakers are opened and collared to disable the system for non-Ka FMA operational missions.
- The Ka FMA KRFU POWER, Ka FMA MODMAN POWER and Ka FMA FAN TRAY POWER circuit breakers will remain open and collared for deactivation of the system when not in use. When the reactivation of the system is required, refer to TO 1300i-2-23GS-00-1-1.
- Steps 29C, 29D and 29E are only applicable to Ka FMA equipped aircraft.

29C. (A) Remove warning tag, as required, from **Ka FMA KRFU POWER** circuit breaker on EPC, row **D**, column **46**, and install circuit breaker collar.

29D. (A) Remove warning tag, as required, from **Ka FMA MODMAN POWER** circuit breaker on EPC, row **D**, column **47**, and install circuit breaker collar.

29E. (A) Remove warning tag, as required, from **Ka FMA FAN TRAY POWER** circuit breaker on EPC, row **U**, column **45**, and install circuit breaker collar.



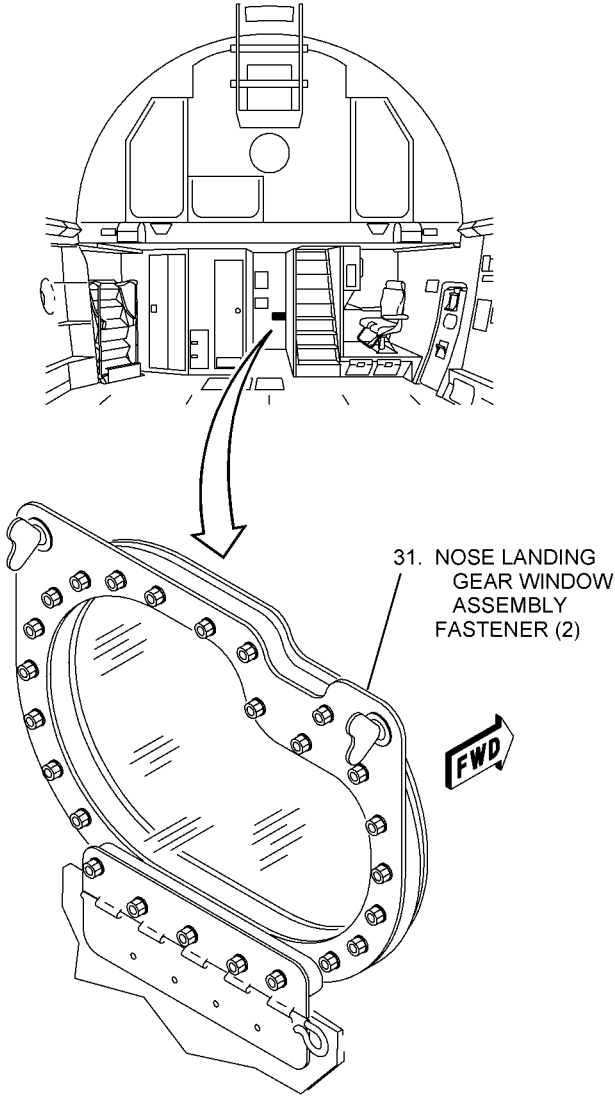
ICN-88277-G1051154-001-01

NOTE

Supervisor shall inform designated aircrew or ground crew member that the deicing task is complete.

30. Perform maintenance interphone shutdown (23-41-02, task 02-4).

31. (A) Close nose landing gear window assembly when opened during snow and ice removal procedures and tighten fasteners.



ICN-88277-G1051140-002-01

01-2. SNOW AND ICE REMOVAL WITH ENGINES RUNNING.

WARNING

- This procedure does not replace snow and ice removal task (task 01-1). It is only intended to be used after the initial deicing has been preformed and shall not be substituted for deicing parked aircraft prior to aircrew arrival. This procedure shall only be performed when the aircrew has completed the flight manual preflight inspection and prior to taxi when continued icing conditions exist. Failure to comply may cause injury to personnel or damage to aircraft or equipment.

- Aircraft engine thrust shall be limited to idle reverse during deicing procedures aft of aircraft wing. Failure to comply may cause injury to personnel or damage to aircraft and equipment.

- Communication between the deicing ground crew and designated aircrew or ground crew member on the aircraft shall be maintained at all times during this procedure. Failure to comply may cause injury to personnel and damage to aircraft and equipment.

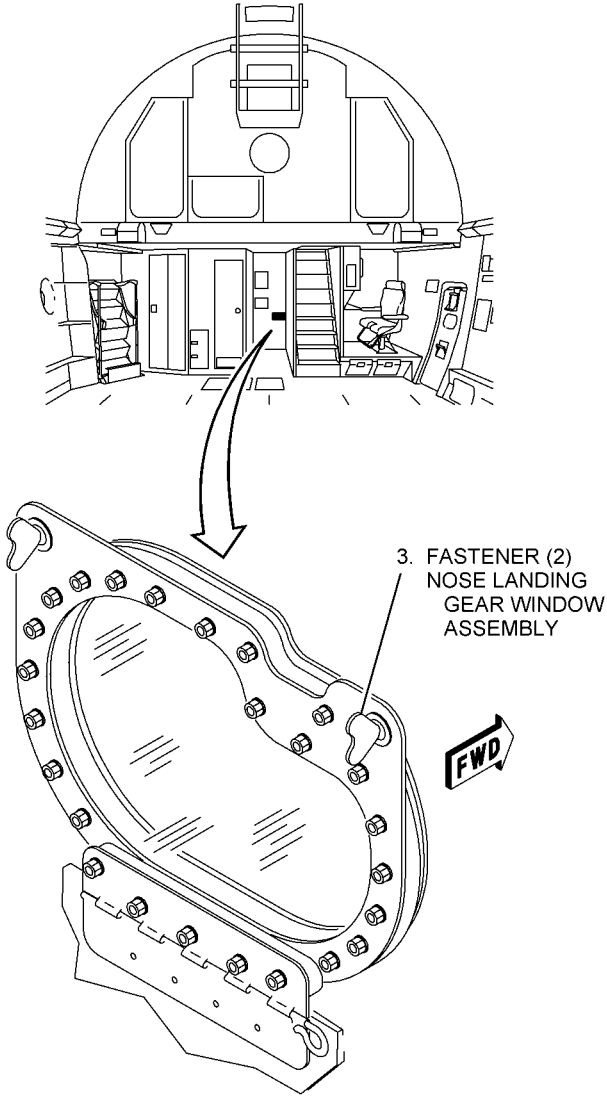
1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

NOTE

During snow and ice removal the nose landing gear window assembly may be opened to prevent the aircraft from slightly pressurizing when doors and windows are closed and avionics cooling fans are running.

3. (A) Loosen fasteners and open nose landing gear window assembly.

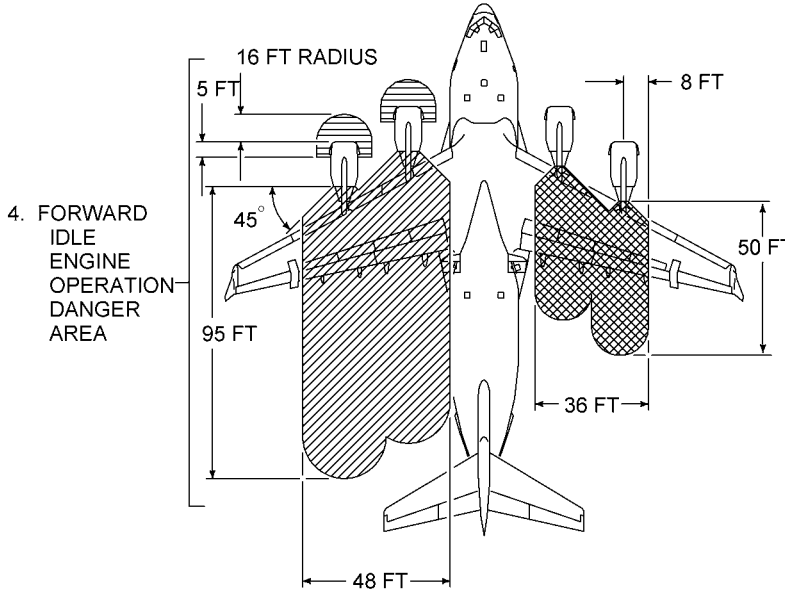


ICN-88277-G1051141-002-01

4. (A,B,C,D) Observe forward idle engine operation danger areas.

NOTE

ILLUSTRATION
NOT TO SCALE



LEGEND

INTAKE: STAY-OUT ZONE

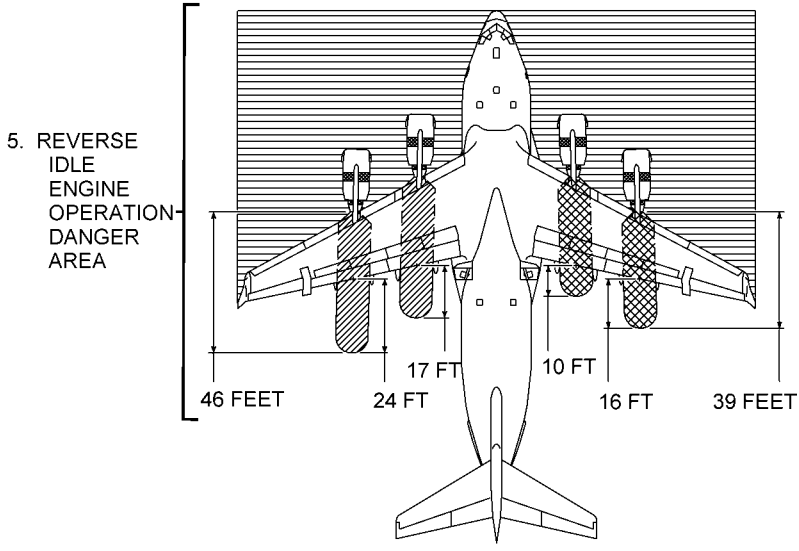
NOZZLE BLAST
136 MPH AT 28 FEET
68 MPH AT 95 FEET
20 MPH AT 260
6 MPH AT 353 FEET
0 MPH AT 400 FEET

TEMPERATURE
125 ºF AT 22 FEET
100 ºF AT 50 FEET

ICN-88277-G1051004-005-01

5. (A,B,C,D) Observe reverse idle engine operation danger areas.

NOTE
ILLUSTRATION
NOT TO SCALE



LEGEND

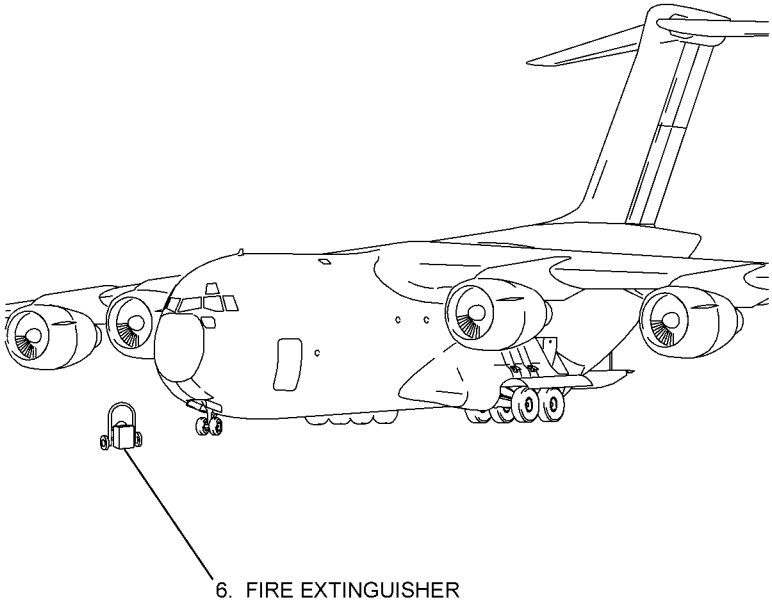
INTAKE/REVERSER BLAST: STAY-OUT ZONE

NOZZLE BLAST
10 MPH AT 46 FEET
15 MPH AT 31 FEET (NOT SHOWN)

TEMPERATURE
90 ºF AT 31 FEET (NOT SHOWN)
80 ºF AT 39 FEET

ICN-88277-G1051005-003-01

6. (A) Position serviceable fire extinguisher.



(TYPICAL)

ICN-88277-G1051006-004-01

WARNING

Positive communication shall be established between team members prior to and during the snow and ice removal procedure. Failure to comply may cause injury to personnel and damage to aircraft.

7. Perform maintenance interphone operation (23-41-02, task 02-3).

WARNING

- Circuit breakers for the Fixed Installation Satellite Antenna (FISA) and Ka-Band Fuselage Mount Antenna (Ka FMA) aircraft equipped systems shall be opened prior to deicing to prevent Radio Frequency (RF) transmission of high intensity electromagnetic radiation. Failure to comply may cause injury to personnel.

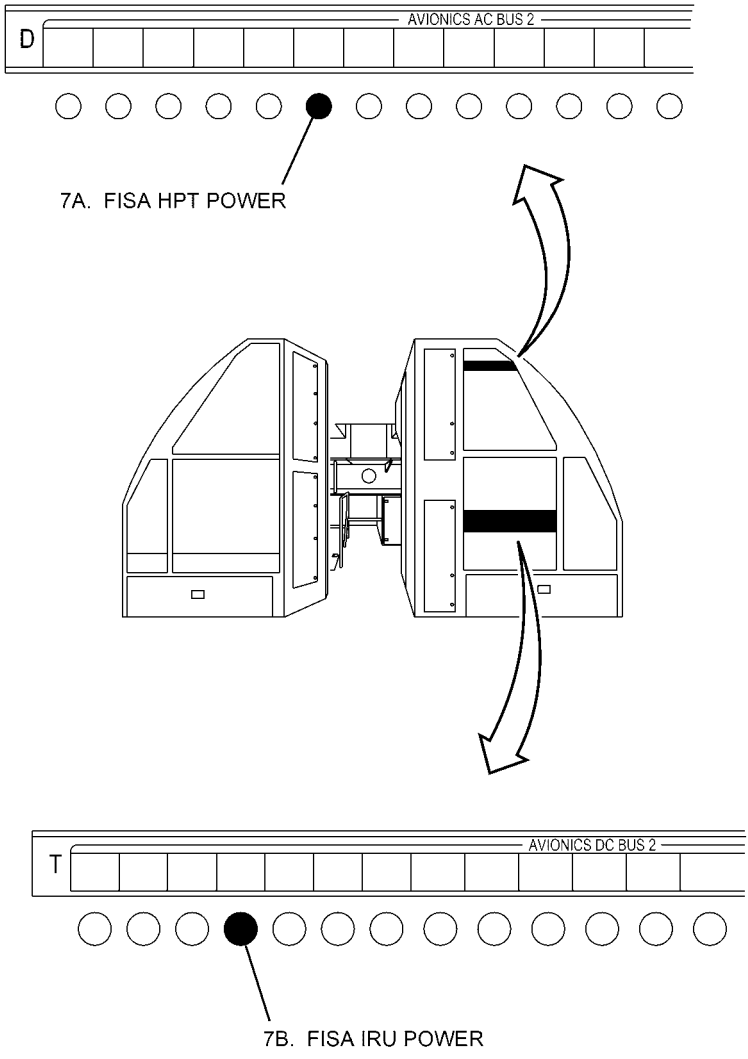
- When designated personnel (aircrew or ground crew) are positioned to monitor the opened circuit breakers on the Electrical Power Center (EPC) during the entire deicing procedure, warning tags are not required, otherwise warning tags shall be installed when leaving the EPC area. Failure to comply may cause injury to personnel.

NOTE

Steps 7A and 7B are only applicable to FISA equipped aircraft.

7A. (A) Request aircrew open **FISA HPT POWER** circuit breaker on EPC, row **D**, column **45**, and attach warning tag, as required.

7B. (A) Request aircrew open **FISA IRU POWER** circuit breaker on EPC, row **T**, column **43**, and attach warning tag, as required.



ICN-88277-G1051155-001-01

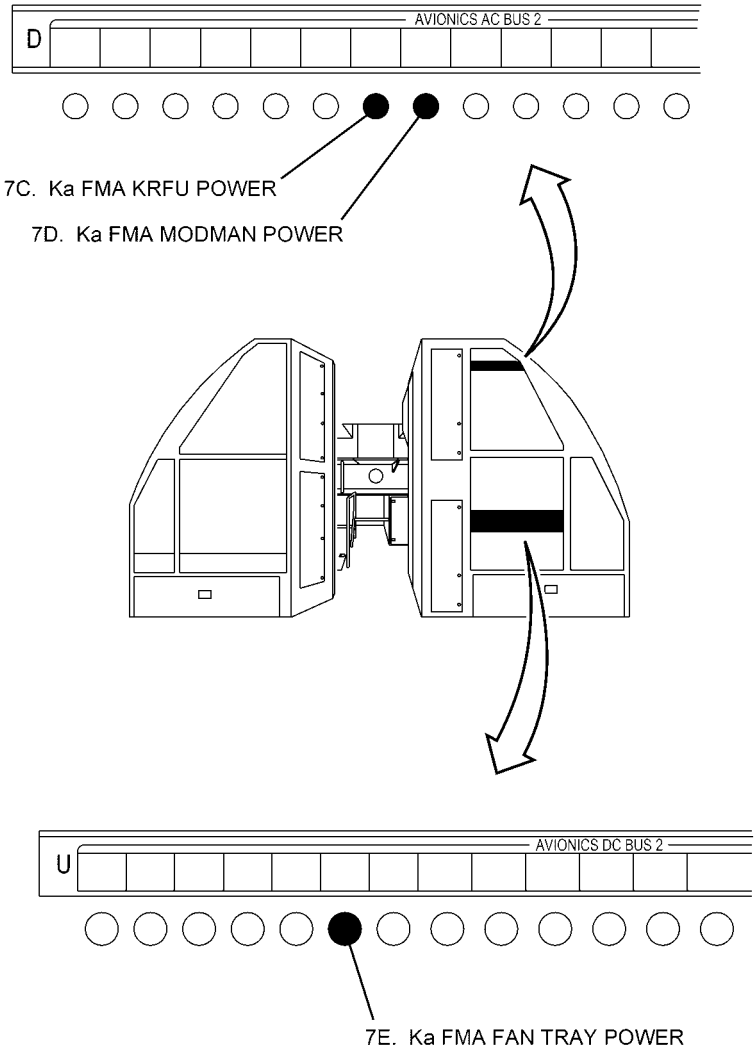
NOTE

Steps 7C, 7D and 7E are only applicable to Ka FMA equipped aircraft.

7C. (A) Request aircrew open **Ka FMA KRFU POWER** circuit breaker on EPC, row **D**, column **46**, and attach warning tag, as required.

7D. (A) Request aircrew open **Ka FMA MODMAN POWER** circuit breaker on EPC, row **D**, column **47**, and attach warning tag, as required.

7E. (A) Request aircrew open **Ka FMA FAN TRAY POWER** circuit breaker on EPC, row **U**, column **45**, and attach warning tag, as required.



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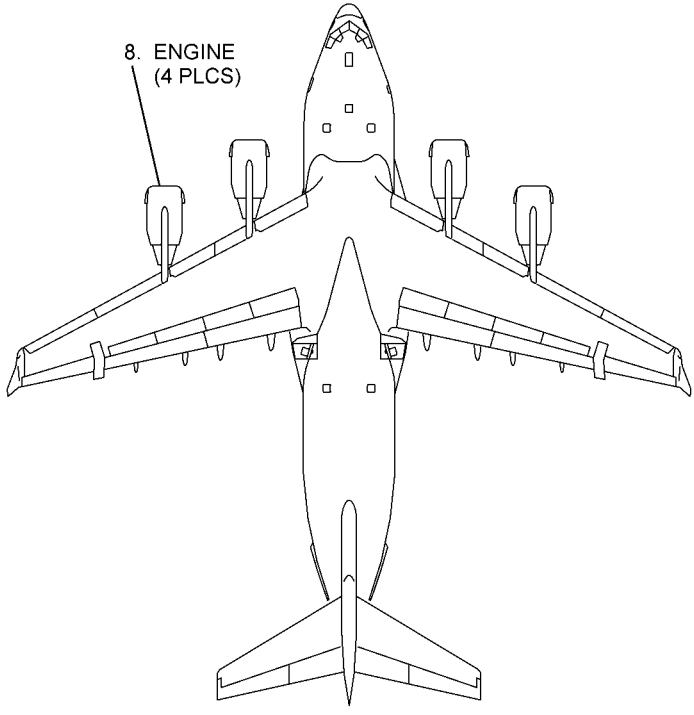
WARNING

Aircraft engine throttle settings shall be in idle reverse position prior to positioning of deicing truck. Failure to comply may cause injury to personnel or damage to aircraft or equipment.

8. (A) Request aircrew to place aircraft engines in idle reverse.



(TYPICAL)

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9. (A,B,C,D) Observe and avoid application of deicing fluid to negative pressure relief valves, cabin pressure outflow valve, engine inlet and exhaust, auxiliary power unit inlet and exhaust, main landing gear, nose landing gear, tube pitot static probes, angle of attack transmitters, total air temperature probes, small laser transmitter assemblies, radome, and windshield areas.