TEMPORARY REVISION NO. 33
To: EA500 POH and
FAA-Approved Airplane Flight Manual

PITOT/AOA PROBE AUXILIARY HEATERS - INDEPENDENT

This Temporary Revision affects the AFM Part Number 06-122204, Revision 04, dated July 23, 2012. Remove this TR when Revision 05 is inserted. Record this TR insertion (or removal) on the Log of Temporary Revisions.

Insert this page behind LOTR-1.

06-122204-TR33

Signature: Allison P. Tacoy Date: DEC 20 2018

Manager, Southwest Flight Test Section, AIR-713
Federal Aviation Administration
Ft.Worth, TX

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Insert facing page 3-27

Smoke or Fumes *(Cont'd)*

3. L GEN Switch.....OFF
4. SYS BATT Switch .....OFF

Functions **INOPERATIVE** with SYS BATT Switch OFF. (Display may not indicate actual system state, & "---" indicate other inop systems.)

- L PFD
- R SDU
- Pitch Trim will not have full authority and pitch asymmetry may occur when pitch is trimmed.
- Aileron Trim
- Landing Gear
- Stick Pusher
- Autopilot
- Yaw Damper
- COM 1
- NAV 1
- GPS 1
- GPS 2
- Transponder 1
- ADS-B 1
- ADS-B 2

- ABS
- L Keyboard (if installed)
- L Eng Ignition
- L Eng Fuel Shutoff Valve failed ON
- L Eng Fire Det. & Ext
- L Electric Fuel Pump
- START & SYSTEM BATT Heaters
- L AIR SOURCE failed ON
- CABIN DUMP switch
- Cockpit/Cabin temperature control (degraded)
- L Eng Anti-Ice failed ON
- WING Deice
- Strobe Lights
- L Windshield Heat
- Autothrottle
- Pitot/AOA Auxiliary Heaters

If Smoke Clears:

-- END --

If Smoke Does Not Clear:

1. SYS BATT Switch .....ON
2. L GEN Switch.....AUTO
3. BUS TIE Switch .....AUTO

If Bleed Air Was Not Initially Suspected:

1. Go to "If Smoke Appears to Be Bleed Air Related:" at the beginning of this procedure.

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Insert facing page 3-65

BATTERY POWER ONLY *Cont'd*

NGEM-03-1-A

Flap Position	Final Approach Speed - KEAS ICE PROT - OFF or ENG (ICE PROT - ENG/WING)					*ADD (%) to Landing Distance
	6000 lb	5500 lb	5000 lb	4500 lb	4000 lb	
T/O	**107** (134)	**103** (128)	**98** (122)	**93** (116)	**87** (109)	**+30%** (+30%)
LDG	**98** (123)	**93** (117)	**89** (112)	**85** (106)	**80** (100)	**--** **--**

*Use landing distance from the appropriate ICE PROT selection table
Speeds may exceed Maximum Tire Speed but may be used in emergencies

5. V_{REF} (OPS Page).....Enter Final Approach Speed
6. Approach Setup and Brief..... Complete
7. Airspeed in Coordinated Straight Flight ..... 195 to 200 KEAS
8. EMERGENCY GEAR RELEASE Handle.....PULL
   (Pull in one continuous motion until latched)
9. GEAR Indication ..... Verify Three Green
   (Do not retract gear after successful extension)

NOTES

- If gear fails to fully extend, decrease airspeed to 180 KEAS (VO) and apply G force in attempt to extend gear.
- LANDING GEAR FAIL CAS message will be displayed; no action required.

10. EMERGENCY GEAR RELEASE Handle..... PUSH Fully In
11. GEAR Handle ..... DOWN
12. FLAPS..... LDG
13. Airspeed.....V_{REF}

Functions INOPERATIVE when on battery power only: (Display may not indicate actual system state, & "---" indicate other inop systems.)

- R PFD
- ADC 3
- Stick Pusher
- Landing Gear
- Yaw Damper
- COM 2
- NAV 2
- GPS 2/ADS-B 2 OUT
- Transponder 2/ADS-B 2 OUT
- Autopilot
- Autothrottle
- Pitot/AOA Auxiliary Heaters
- Sys Battery Heater
- Start Battery Heater
- Air Cond System
- Windshield Heat
- R Landing Light
- Taxi Lights
- Strobe Lights
- Position Lights
- Beacon Light
- Weather Radar
- ABS

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Insert facing page 3-133

AUX PROBE HEAT INOP (If installed)

(If Pitot/AOA probe Auxiliary Heaters installed) Pitot/AOA probe Auxiliary Heater system inoperative. or Aux Heat select off.
Potential exists for airspeed errors, continue to monitor airspeed.

(If Pitot/AOA probe Auxiliary Heaters installed) Pitot/AOA probe Auxiliary Heater system inoperative. Failure has been detected, but Aux Heat is still commanded on. Depending on which component(s) have failed, the Aux Heat to one or both probes may be off. If Total Air Temperature (TAT) data fails, the Aux Heat Controller will latch to the last valid TAT data. (on or off).
Potential exists for airspeed errors, continue to monitor airspeed. If TAT rises above -30°C, and Aux Heat remains on, manually disable Aux Heat by pressing Aux Heat switch/indicator. ON will extinguish.

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BEFORE TAXI

1. Initiate Pitot/AOA Probe 20 min. Pre-heat (If Pitot/AOA Probe Auxiliary Heaters are not installed)
   a. ICE PROT Synoptic page, PITOT/STAT ..... ON
   Refer to Amplified Normal Procedures, "Pitot/AOA Probe Pre-heat" (page 4-22). (If Pitot/AOA Auxiliary Heaters are not installed).
2. Pitot/AOA Probe Auxiliary Heat Indicator/Switch annunciation segment test (If installed) .....Press and hold
   - AUX PROBE HEAT, ON, and INOP segments illuminate
3. System Test (OPS Page)

❶ a. Lamps ..... TEST

❶ b. AUTOPILOT ..... TEST

c. STALL PROTECTION SYSTEM ..... TEST

d. TERRAIN ALERT SYS (If Installed) ..... TEST

e. TRAFFIC ALERT SYS (If Installed) ..... TEST

NOTES

- Refer to Amplified Normal Procedures, "Lamp Test" (page 4-18).
- These tests may be conducted during the BEFORE STARTING checklist if a GPU is used.

4. Trims (PITCH, ROLL & YAW).....Set Takeoff
5. ICE PROT ..... Test, then as required

NOTES

- Refer to Amplified Normal Procedures, Pitot/AOA Probe Pre-heat (page 4-22).
- WING DEICE must be off for takeoff.
  (ICE PROT switches – OFF or ENG only)

6. Electronic Circuit Breakers (ECB Page)..... Check
7. FLAPS..... Set for Takeoff
8. Seats Inertia Reel.....Locked
9. External Lights .....As Required
10. Passenger Briefing..... Complete
11. Taxi and Takeoff Briefing ..... Complete
12. Mechanical AI (If Installed)..... Uncage
13. PARKING BRAKE ..... Released

TAXI

1. Brakes ..... Check
2. Flight Instruments..... Check

BEFORE TAKEOFF

WARNING

The wings, vertical and horizontal stabilizers, flight control surfaces, and engine inlets must be free of frost, snow, and ice by visual or tactile verification prior to takeoff or within the hold over time for an approved de-ice fluid.

1. Ensure completion of Pitot/AOA Probe 20 min. Pre-heat
   Refer to Amplified Normal Procedures, "Pitot/AOA Probe Pre-heat (page 4-22). (If Pitot/AOA Auxiliary Heaters are not installed)
2. WXR ..... As Required

NOTE

While on the ground, STAB OFF and/or RADAR FAIL may momentarily display if WXR is turned ON; or RADAR NO DATA may display if WXR is turned to STANDBY; no action required.

3. Batteries (ELEC Page) ..... Less Than 7 Amps Charge
4. Warning Lights / CAS ..... Check & Consider
5. T/O CONFIG OK..... Check Displayed
6. Air Source Switch ..... NORM
7. External Lights ..... As Required
8. TOGA Button (If Operational) ..... Press

NOTE

Never use excessive force against the Throttle Stops.

AFTER TAKEOFF

1. GEAR *(positive rate of climb established)* ..... UP
2. FLAPS *(400 ft AGL & obstacle clearance)* ..... UP
3. Yaw Damper ..... ON
4. Throttles..... MCT
5. ICE PROT..... As Required
   Verify ENG/WING ICE PROT ON Status Message(s)

NOTES

- Turn ICE PROT system ON (including WIndshield Heat) at any time during the flight as required by limitations. Do not operate the Wing/ stabilizer de-ice boots at outside air temperatures (OAT) colder than -40°C. If the ENG/WING ICE PROT ON status message(s) does not appear, follow the appropriate systems failure procedure.
- Stall speeds will increase and performance will be reduced by ice accumulation.
- ICE PROT switches must remain in the WING L(R) ENG position until the entire wing is clear of ice, including the portion of outer wing not protected by the boot and upper wing surface.

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Pitot/AOA Probe Pre-heat

Aircraft 001 through 265 not modified by SB 500-34-028 (Pitot/AOA Probe Auxiliary Heaters)

1. Select ICE PROT PITOT/STATIC to ON for 20 minutes to evaporate any accumulated moisture.

CAUTION

With elevated local ambient temperatures, there is the potential for L and/or R Pitot/AOA Heat Fail CAS message after Take Off. Stick Pusher and Stall Protection CAS messages may also appear. These CAS messages should clear with continued airflow. If CAS messages persist, refer to Section 3.

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ICE PROTECTION SYSTEM

General

The ice protection system is comprised of the following:

- Heated pitot/Angle of Attack (AOA) probes
- Pitot/AOA probes auxiliary heaters
- Heated pitot/static probe
- Heated static ports
- Heated windshields
- Engine anti-ice
- deice boots on the wing and horizontal stabilizer

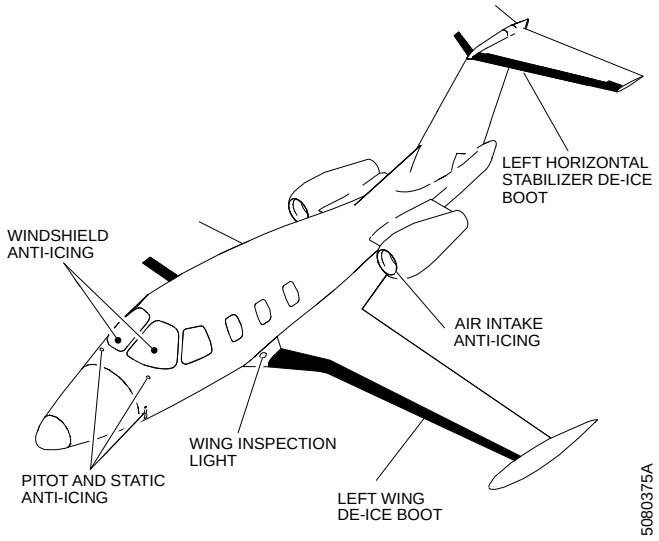

Figure 7-165. Ice Protection System

The pitot/AOA probes, pitot/static probe, pitot/AOA auxiliary heaters, static ports and windshield are electrically heated and automatically turned on. Engine anti-ice uses bleed air. The wing and horizontal stabilizer are de-iced using pneumatic boots. A wing ice inspection light illuminates the left wing leading edge to identify icing at night. The Aircraft Computer System (ACS) controls and monitors both the anti-ice and deice components of the ice protection system after pilot activation.

When flying in icing or anticipated icing conditions select windshield heat, engine anti-ice, and wing and horizontal stabilizer deice ON. When in actual icing conditions the wing and horizontal stabilizer deice boots should be selected ON to remove accumulated ice from leading edges.

Air Data System Probes and Ports

All air data system probes and ports are heated automatically for ground and flight operations by self-regulating heaters. The heater in each probe monitors and regulates the probe temperature within a specified range. The probes receive power from separate ECBs and are monitored by the ACS.

Probe and static port heaters automatically heat when at least one engine generator is on-line or the aircraft is in the air. Probe and static port heaters can be checked while on the ground with a ground power unit providing power and selecting the PITOT/STAT heat (ICE page) to ON.

Normal operation of the probe and static port heat is indicated on the ICE protection synoptic by a green display on the airplane graphic. When a probe or static port is unheated (off), it appears black with a white outline.

Probe and/or Static Port Heat Failure

A complete failure of a probe or static port heat causes a L(R) PITOT HEAT FAIL, L(R) STATIC HEAT FAIL or STBY PITOT HEAT FAIL caution message to display. The failure is also indicated on the ICE protection synoptic by the probe or port turning amber. The static ports have two heating elements. If only one of the heating elements fails a L(R) STATIC HEAT FAIL advisory message is displayed indicating the loss of redundancy.

Static Heater Monitor Fault

The ACS monitors the function of the static heaters. If the ACS can not monitor the static heaters a STATIC HTR MON FLT advisory message is displayed with the aircraft on the ground. The heaters should still operate. The heaters must be manually checked for operation before takeoff.

Independent Pitot/AOA Auxiliary Heaters

The Independent Pitot/AOA probe auxiliary heaters are controlled by the switch/indicator (1, Fig 7-166) located below the left instrument panel.

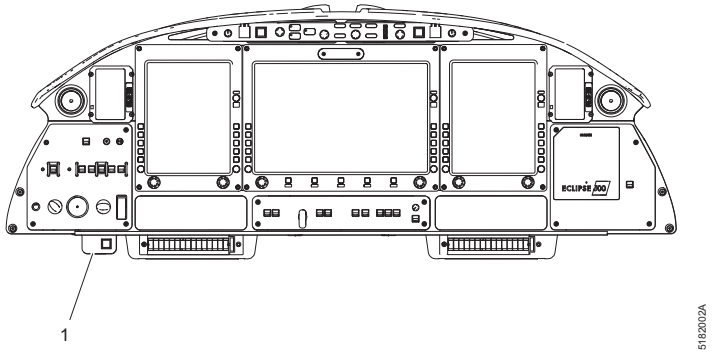

Figure 7-166. Independent Pitot/AOA Probe Auxiliary Heaters Switch/ Indicator

Independent Pitot/AOA probe auxiliary heaters automatically heat when the left Total Air Temperature (TAT) is between -32°C and -65°C.

There are three indications on the auxiliary heater switch/indicator:

1. AUX PROBE HEAT: Illuminated whenever Left TAT is below -32°C.
2. ON: Illuminated whenever the power is being applied to the auxiliary heaters.
3. INOP: Illuminated whenever an error has been detected or the crew has selected auxiliary heat off.

The following is a summary of switch/indicator states:

TAT is above -33°C: switch/indicator indications off.

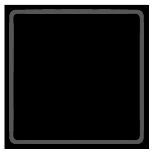

Figure 1-167. Independent Pitot/AOA Probe Auxiliary Heaters Off

TAT is below -32°C: AUX PROBE HEAT and ON indicators illuminated.

Figure 1-168. Independent Pitot/AOA Probe Auxiliary Heaters On

TAT is below -32°C and Aux Probe Heat is inoperative or crew has pressed the switch/indicator: AUX PROBE Heat and INOP illuminated

Figure 1-169. Independent Pitot/AOA Probe Auxiliary Heaters Inoperative or Manually Switched Off

TAT is below -32C, crew has not disabled heaters, error has been detected: All indicators illuminated.

Figure 1-170. Independent Pitot/AOA Probe Auxiliary Heaters Error Detected

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