

BELLY FAIRING VENTS

The underside of the aircraft fuselage contains intake and exhaust vents for evacuating fuel and hydraulic fluid and vapors during flight. Three NACA intake vents are positioned forward of the wing and two exhaust vents are positioned aft of the wing below the tail cone. Air entering the NACA vents during flight, travels through the belly and under the wing and then exits out the rear preventing vapor buildup.

ENTRANCE DOOR

The cabin entry door is on the left side of the fuselage forward of the wing. It provides normal and emergency access to the airplane.

The door contains an integral airstair. A handrail is attached to the aft portion of the door to assist passengers using the airstair. The handrail is also directly attached to the counterbalance system of the door consisting of a nitrogen charged gas spring to assist in the opening and closing of the door in the event of a lift motor failure.

The door will normally open and close with the assistance of an electric lift motor attached to the forward portion of the door. The lift motor is controlled by an exterior control panel (Figure 1-5) forward of the door, and an interior control panel (Figure 1-6) located above the left forward closet. When opening, the motor applies braking which prevents the door from opening too rapidly. During closing, the motor lifts the door into the closed position.

As the door reaches the closed position, the motor ceases the closing operation and holds the door in position. This allows approximately 10 ± 2 seconds to latch the door before it falls open again.

The door is monitored by two LED indicators on both the interior and exterior of the door. The PRESSURE WARNING LED indicates the cabin remains pressurized. The DOOR OPEN LED illuminates when the **CABIN DOOR OPEN** CAS message displays. They both indicate that one or more of the door monitoring switches are indicating an unsafe condition.



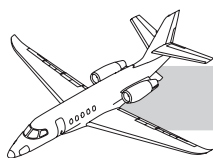
Figure 1-4. Entrance Door



Figure 1-5. Exterior Door Control Panel



Figure 1-6. Interior Door Control Panel



An acoustic cabin door curtain is installed. The curtain can be closed in flight to reduce noise in the cabin. The acoustic cabin door curtain must be stowed for taxi, takeoff, and landing.

WATER BARRIER

The water barrier allows use of the main cabin door as an additional egress route if the emergency exit is inaccessible following ditching. It can be installed to prevent water from rushing into the cabin.

The water barrier is a flip up floor panel located on the cabin floor immediately inside the cabin entry door. When stowed, the barrier serves as an extension of the top airstair step. Crewmembers and passengers must be familiar with its use and location.



Figure 1-7. Water Barrier (Deployed)

Prior to a water landing, the water barrier is deployed at the base of the main entrance by pulling the number “1” pull tab located on the forward portion of the top step. This will rotate the inboard portion of the panel upwards into position and latch it into place. It must be installed before the cabin door is opened.

EMERGENCY EXIT

An emergency, overwing escape hatch is located in the lavatory area on the right side of the fuselage (Figure 1-8 and 1-9). The plug style door can

be removed from inside or outside the aircraft. A locking pin must be removed prior to aircraft movement to allow for door removal. A decorative cover held in place by magnets must be removed to view and operate the interior handle. The emergency exit is electrically monitored and displays the **EMERGENCY EXIT OPEN** CAS message if the door is not properly secured.



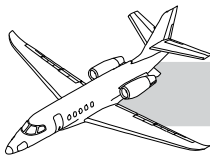
Figure 1-8. Emergency Exit (Exterior)



Figure 1-9. Emergency Exit (Interior)

COCKPIT

Two flight crew stations in the cockpit have controls including control columns and adjustable rudder pedals with individual toe brakes. Two fully adjustable seats are equipped with five point safety harnesses.



ENGINE SHUTDOWN

Engine shutdown is normally accomplished by the FADEC when the RUN/STOP button is selected to the STOP position. Batteries must be left on 30 seconds after engine shutdown so data can be downloaded.

The **ENGINE SHUTDOWN L and/or R** CAS message appears when an engine is shut down with the ENGINE RUN/STOP button.

THRUST REVERSERS

DESCRIPTION

The Citation Latitude thrust reversers are clamshell-type reversers electrically controlled and hydraulically operated. They are available on the ground with all three squat switches indicating weight on wheels. The thrust reversers are designed with redundant systems to prevent an inadvertent deployment. In addition to the 3 squat switches,

the electrically controlled isolation valve, four mechanical locks and a design that allows the aerodynamic forces from high speed flight to ensure they do not deploy all contribute to prevent an inflight deployment. Control of the thrust reversers is through finger lift levers on the respective throttle. Thrust reverser status is displayed on the EIS and emergency stow buttons are incorporated into the throttle quadrant.

The thrust reversers are on the aft section of the engine and blend into the nacelle of the engine forming the exhaust nozzle. They deploy vertically and are held in the stowed position by mechanical locks and aerodynamic forces. During deployment, hydraulic pressure is used to hold the reversers in the deploy position (Figure 7-12).

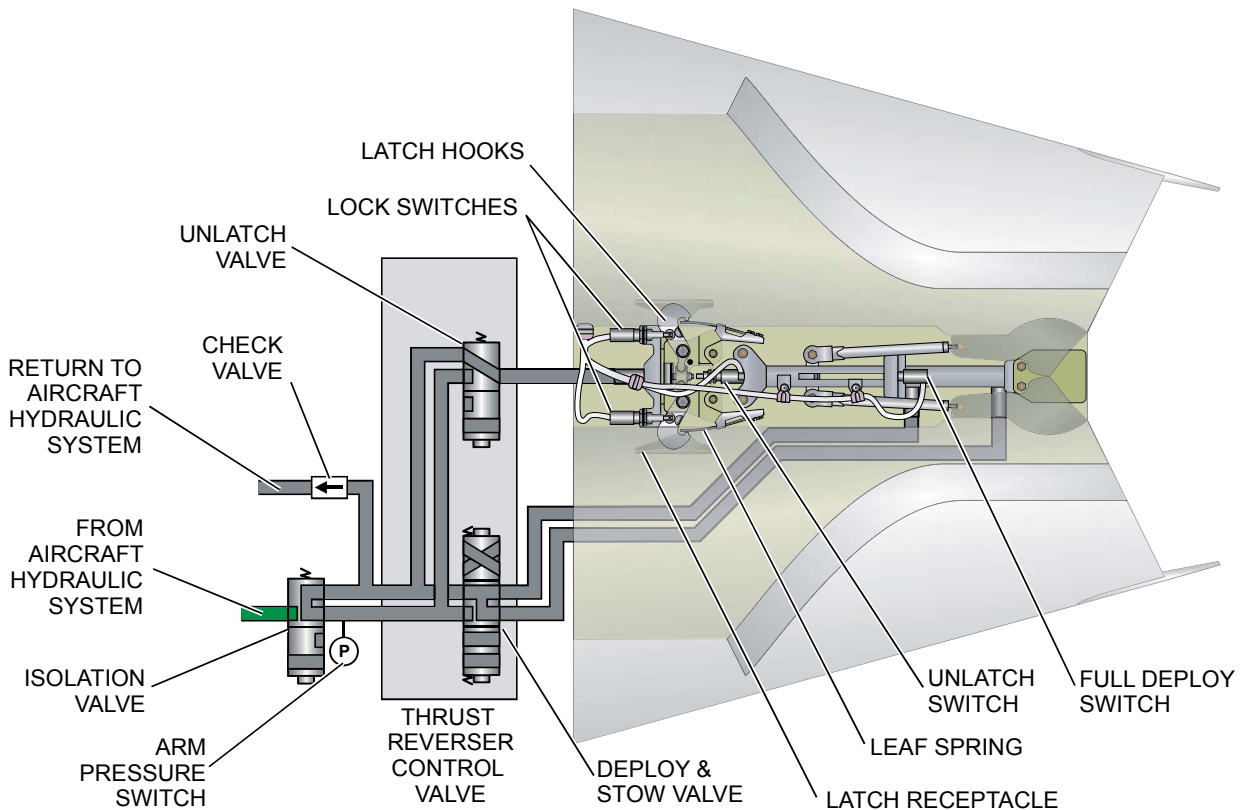
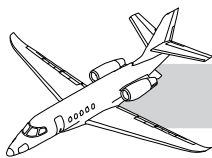


Figure 7-12. Thrust Reversers



COMPONENTS

Isolation Valve

Prior to deploying the thrust reversers, an isolation valve must open allowing hydraulic pressure to reach the control valve. The valve is a solenoid-type valve and requires main DC power through the control of the thrust reverser levers to open. An ARM annunciation indicates that the isolation valve has opened and hydraulic pressure has reached the control valve. With the L and R ELEC buttons in EMER or a total loss of main DC power, the isolation valve remains closed and thrust reverser operation is not possible.

Control Valve

The thrust reverser levers operate the position of the double solenoid control valve. The valve directs hydraulic fluid to the deploy or stow side of the actuators. Main DC power is also required for valve operation.

CONTROLS AND INDICATIONS

Thrust Reverser Levers

Thrust reverser levers are attached to the forward portion of the thrust levers and act as finger lift levers. Once pulled up, the main thrust levers can be moved aft of the IDLE stop to deploy the respective reverser. Inputs from all three squat switches is required for thrust reverser operation.



Figure 7-13. Thrust Reverser Levers

Emergency Stow Buttons

Two red emergency stow buttons aft of the throttle quadrant flash anytime the thrust reverser inadvertently unlocks or deploys in flight. (Figure 7-8) Pressing the button opens the isolation valve and directs the control valve to the stow position. The lights flash when the thrust reverser is deployed in flight and go steady once they have been pressed. EMER STOW buttons do not flash during the ground check of the T/Rs and an **AT FAIL** CAS message displays during T/R deployment on the ground.

Indications

Thrust reverser status is displayed above the respective N_1 gauge on the EIS. Each thrust reverser has three possible mode indications: T/R ARM, T/R UNLOCK, and T/R DEPLOY. The mode indications vary based on squat switch inputs (Figure 7-14).

Table 7-2. T/R INDICATIONS ON GROUND

ON GROUND INDICATION	DESCRIPTION
T/R ARM	Thrust reverser armed on ground
T/R UNLOCK	Thrust reverser unlocked on ground
T/R DEPLOY	Thrust reverser deployed on ground

Table 7-3. T/R INDICATIONS IN FLIGHT

IN FLIGHT INDICATION	DESCRIPTION
T/R ARM	Thrust reverser armed in flight
T/R UNLOCK	Thrust reverser unlocked in flight
T/R DEPLOY	Thrust reverser deployed in flight

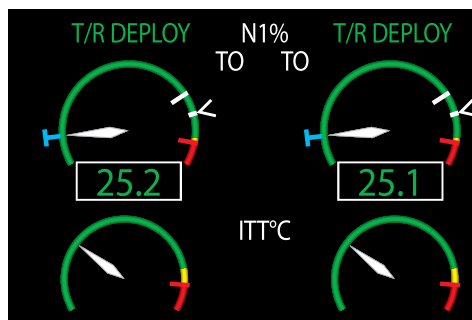
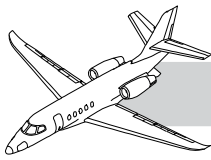


Figure 7-14. Thrust Reverser Indication



OPERATION

Main thrust levers are used to deploy the reversers by moving them aft of the IDLE stop. This requires pulling up on the thrust reverse levers to release the IDLE stop and then moving the thrust levers aft. The thrust reverse levers stay in the up position and do not have to be held during reverse operation. The thrust levers are stopped by an aft lockout solenoid that releases only when the reversers are fully deployed. Once the lockout solenoid releases, moving the thrust levers further aft increases reverse thrust to a FADEC controlled maximum N_1 . This area of increasing reverse thrust is labeled REV and marked with white hashes on the throttle quadrant (Figure 7-13).

To stop reverse thrust, the main thrust levers are moved forward to return to IDLE N_1 . When the levers are moved to the IDLE position, the thrust reverse levers automatically fall back into the lock position and the reversers are stowed.

Preflight operation of the thrust reversers consists of deploying the reversers, operating the EMER STOW buttons, and then normally stowing the reversers.

The crew verifies the operation by observing the T/R ARM, T/R UNLOCKED, and T/R DEPLOY indications on the EIS. Pressing the EMER STOW buttons puts the control valve into the stow position. The status indication changes from T/R DEPLOY to T/R UNLOCKED and T/R ARM, indicating that the reversers have stowed but the isolation valve is still open. The EMER STOW Buttons illuminate in a steady state.

The thrust reverser levers are moved to the stow position. The T/R ARM indication remains illuminated due to the EMER STOW buttons still being active. The EMER STOW lights will extinguish when pressed followed by the T/R ARMED indication on the EIS extinguishing. If a thrust reverser should deploy in flight, FADEC will reduce the affected engines RPMs to flight idle. Refer to the appropriate checklist and/or approved *AFM* for crew actions.

LIMITATIONS

For specific instructions on limitation procedures, refer to the appropriate FAA-approved *AFM*.

EMERGENCY/ ABNORMAL

For specific information on Emergency/Abnormal procedures, refer to the appropriate pilot's checklists or FAA-approved *AFM*.

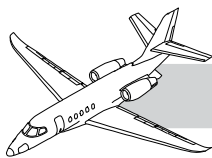


Table 7-4. CAS MESSAGES

ENGINE FAILED L or R	
DESCRIPTION	This message indicates the FADEC has shut down an engine due to a system failure. The message also appears when an automatic relight takes more than 30 seconds to return the engine to idle N2 or higher.
INHIBITS	ESDI

ENGINE FIRE L or R	
DESCRIPTION	This CAS message indicates an engine fire has been detected. The red L ENG FIRE and/or R ENG FIRE light will also be illuminated. The affected ENGINE FAILED L or R message will be displayed when the engine is shut down using the ENG FIRE button. It will be replaced by the white ENGINE SHUTDOWN L and/or R message when the RUN/STOP button is turned OFF.
INHIBITS	NONE

ENG VIBRATION L or R	
DESCRIPTION	This message indicates excessive engine vibration has been detected.
INHIBITS	TOPI, ESDI, EFI

OIL PRESSURE LOW L or R	
DESCRIPTION	This message indicates low oil pressure has been detected by the low oil pressure switch.
INHIBITS	TOPI, ESDI, EFI

T/R DEPLOY L or R	
DESCRIPTION	This message is displayed when the thrust reverser is deployed in flight.
INHIBITS	TOPI, ON GROUND

ENG CHIP DETECT L and/or R	
DESCRIPTION	This message indicates metal chips have been detected in the engine oil.
INHIBITS	TOPI, LOPI, ESDI

ENG CNTRL FAULT L and/or R	
DESCRIPTION	This CAS message indicates a FADEC internal fault or sensor miscompare has been detected and system redundancy has been reduced. Manually turning ignition on can activate this message.
INHIBITS	TOPI, LOPI, EFI, BFI

FUEL FLTR BYPASS L and/or R	
DESCRIPTION	This message indicates an impending bypass of the fuel filter due to fuel contamination.
INHIBITS	TOPI, LOPI, ESDI

GROUND IDLE L and/or R	
DESCRIPTION	This message is displayed when the FADEC is in ground mode when the aircraft is actually in air.
INHIBITS	TOPI, ESDI, ON GROUND

OIL LEVEL LOW	
DESCRIPTION	This message indicates oil quantity is too low for an engine start with the airplane on level ground. This message is displayed only on the ground with engines not running. This message is white if the oil level low sensor is failed.
INHIBITS	TOPI, LOPI, ESDI, IN AIR

RAT HEAT FAIL L and/or R	
DESCRIPTION	This message indicates no current is detected at one or both of the respective RAT probes with the ANTI-ICE ENGINE/STAB button ON.
INHIBITS	TOPI, LOPI, ESDI, BFI

7 POWERPLANT

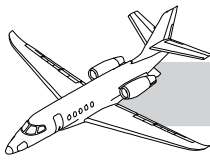


Table 7-4. CAS MESSAGES (Continued)

T/R ARMED L and/or R	
DESCRIPTION	This message indicates the respective thrust reverser is armed in flight.
INHIBITS	TOPI, ON GROUND

T/R UNLOCK L and/or R	
DESCRIPTION	This message indicates two or more of four locks are unlocked on the respective thrust reverser in flight. If three or four locks are sensed to be unlocked on the respective thrust reverser, the rudder bias actuator arm will move to the minimum position and rudder pedal force required for single-engine operations will increase significantly.
INHIBITS	TOPI, BFI, ON GROUND

ENG DISPATCH LIM L and/or R	
DESCRIPTION	This message indicates the respective engine FADEC has detected a condition that will require a logbook entry and maintenance within 125 hours of the message being posted. This message is inhibited in flight. Pressing the EVENT MARKER on the center pedestal will record additional information to assist maintenance.
INHIBITS	TOPI, LOPI, IN AIR

ENGINE SHUTDOWN L and/or R	
DESCRIPTION	This message indicates the respective engine has been shut down with the RUN/STOP switch. This message clears after completion of the engine start sequence.
INHIBITS	NONE

OIL FLTR BYPASS L and/or R	
DESCRIPTION	This message indicates the pressure across the oil filter is high due to debris contamination. This check is only active when the oil temperature is -38°C or warmer. Once posted, the message state latches until avionics power is cycled. Ten hours of operation are allowed after first occurrence of the message provided the associated ENG CHIP DETECT L and/or R message is not displayed.
INHIBITS	TOPI, LOPI, ESDI

OIL LEVEL LOW L and/or R	
DESCRIPTION	This message indicates a fault has occurred in the oil level low sensor. If engine oil level is low, this message will be amber. This message is displayed only on the ground.
INHIBITS	TOPI, LOPI, ESDI, IN AIR