



# SECTION VII

## **DOORS, EXITS & MISCELLANEOUS EQUIPMENT**

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## SECTION VII

# DOORS, EXITS & MISCELLANEOUS EQUIPMENT

### CABIN ENTRY DOOR

The cabin door consists of an upper portion that forms a canopy when open and a lower portion with integral steps. The upper portion has two torsion bars to provide opening assistance. The bars, when over centered, retain the door in the open position. The lower portion of the door incorporates a torsion bar system to provide closing assistance. The 36-inch wide door has cables attached to takeup reels installed on the forward and aft lower door structure to aid in closing and prevent damage if the door is inadvertently allowed to drop open. *On aircraft 31-075 and subsequent, equipped with the 36-inch wide door,* a snubber has been added to the forward side of the door. The 24-inch wide door has a snubber on the forward end and a cable on the aft end of the door. A 28 VDC actuator in the lower door actuates two hooks (one hook for 24-inch door) that pull the upper and lower doors together against the door frame seal. Each door half has a locking handle which, when rotated, drives a series of locking pins into the fuselage structure, and through interlocking arms, secures the halves together. When the pins are engaged, the door becomes a rigid structural member. Correct pin engagement may be checked using the small sight windows at each pin location on the upper door, and two small doors on the lower door. There is a secondary safety catch installation on the lower door separate from the door locking system. This installation will hold the lower door against the door frame seal, and align the locking pins with the pin holes. When the lower door is unlocked, the safety catch, located on the aft side of the door, will keep the door from falling open. A key lock is provided on the lower door to secure the aircraft from the outside. Rotating the key lock will operate the door hook actuator and the hooks will engage the upper door to prevent it from being opened.

### DOOR WARNING LIGHT

A red DOOR warning light is installed on the glareshield annunciator panel to provide the crew with visual indication of cabin door security. The light will illuminate to indicate that one or more of the cabin entry door locking pins is not fully engaged, or the cabin entry door actuator hooks are still engaged. If all pins are fully engaged and the door hooks have been fully released, the most probable cause for illumination is a switch malfunction or misalignment.

## **CABIN DOOR OPERATION**

### **To open cabin door from the outside:**

1. Release door locking hooks by rotating key. The keylock will energize the actuator to release the door hooks.
2. Lift handle and rotate clockwise to release upper door locking pins.
3. Raise upper door.
4. Reach inside and rotate lower door locking handle to OPEN position.
5. Release safety catch and gently lower door to full open position.

### **To close cabin door from the inside:**

1. Raise lower door, using cable knob, until the safety catch engages.
2. Rotate lower door locking handle to the locked position.
3. With upper door locking handle in the OPEN position, close upper door.
4. Engage door hooks by operating actuator switch on lower door. This pulls the door halves against the door seals.
5. Rotate upper door locking handle to the locked position.
6. Release door hooks by operating actuator switch on lower door.

### **To open cabin door from the inside:**

1. Lift upper door locking handle to the open position.
2. Push the upper door to the full open position.
3. Rotate lower door locking handle to the OPEN position.
4. Pull the cable full up by using the cable knob.
5. Release the safety catch.
6. Gently lower the lower door to the full down position using the cable knob.

### **To close and lock cabin door from the outside:**

1. Raise lower door until the safety catch engages.
2. Reach inside and rotate lower door locking handle to the CLOSED position.
3. With upper door locking handle in the open position, close upper door.
4. Insert key in key lock and rotate. This will operate the actuator to engage the door hooks and lock the door.
5. Rotate upper door locking handle to the locked position.

## DOOR HOOK ACTUATOR SWITCH

A door hook actuator switch is located on the upper step of the lower door. This switch actuates the door hooks that are incorporated to pull the upper and lower door halves tight against the door frame seal. This must be accomplished before rotating the upper door locking handle to secure the door. The hooks must be released before flight to assure rapid egress through the upper cabin door during an emergency. The DOOR warning light is illuminated whenever the hooks are engaged. Power for the door hook actuator is 28 VDC supplied through the hot-wired 5-amp DOOR MOTOR circuit breaker on the copilot's circuit breaker panel.

## MANUAL DOOR HOOK RELEASE

Should a malfunction prevent the door hooks from releasing, the hooks can be released from the inside with a ratchet and socket stowed in the cabinet behind the pilot's or copilot's seat. To manually release the door hooks:

1. Peel back carpet on the aft lower door step and snap out access cover.
2. Slip ratchet and socket over hex shaft and rotate shaft until hooks are released.

## EMERGENCY EXITS

The cabin window adjacent to the wing leading edge on the right hand side of the cabin serves as an emergency escape exit. This window is equipped with internal and external release handles. To release the window from the inside, grasp and pull up on the red handle marked EXIT-PULL-LIFT, then pull the window into the cabin. To open from the outside, depress the button marked PUSH, rotate the handle down, then push the window into the cabin. The upper portion of the cabin door is also utilized for emergency egress.

## EXTERNAL DOORS

External doors are installed to provide maintenance and servicing access. The nose area forward of the cockpit is accessible through left and right hand nose cowl doors. The tailcone is accessible through the tailcone access door located on the bottom of the aircraft in the tailcone area. Single-point fueling control panel and filler are accessible through a door on the fuselage below the right engine. Oxygen system servicing is provided through an access door located either on the right side of the nose compartment or the right side of the dorsal inlet depending upon the location of the oxygen bottle. Engine oil system servicing is provided through an access door located on the outboard side of each engine cowl. These doors should be checked for security before flight.

## EMERGENCY EQUIPMENT

### HAND FIRE EXTINGUISHER

A two-pound (.91-kilogram) Halon 1211 (BCF) fire extinguisher is generally located in a cabinet behind the pilot's or copilot's seat, and is accessible to crew members and passengers. To operate the extinguisher, remove it from the quick-release bracket and hold upright by the hand-grip. Slide the safety thumb latch forward and squeeze the lever with the palm of the hand. An indicator disc will eject from the rear of the operating head and extinguishant will be released from the nozzle. Releasing the lever closes a secondary seal, thus retaining part of the charge to deal with flash-back or re-ignition.

### FLOTATION EQUIPMENT

Life vests are provided at each crew and passenger seat station. The life vests are inflated by pulling the red CO<sub>2</sub> release tabs or orally by using the manual inflation tubes.

### HATCHET

An emergency hatchet is either stowed in the cabinet behind the copilot's seat or under one of the crew seats.

## **DRAG CHUTE (OPTIONAL)**

The drag chute provides a significant additional safety feature when operating on other than ideal runway conditions. Proper utilization of the drag chute on wet or icy runways can reduce stopping distance in most cases to a length equal to or less than that for dry concrete. Maximum performance benefit will be achieved in the unlikely event of an aborted takeoff or a landing with complete hydraulic failure. The greatest deceleration is produced at the highest speed; however, the chute is still effective at speeds below 60 knots. Because the chute lanyard is attached near the aircraft center of gravity, weather vaning is minimized when the chute is deployed under crosswind conditions. The chute mechanism includes inadvertent deploy safety features. With the deploy handle in the stowed (down) position, the chute lanyard is unlocked from the aircraft structure. Accidental release of the chute in this condition would result in immediate separation of the chute from the aircraft. Should the chute be inadvertently deployed while airborne, the chute will fail at speeds in excess of approximately 167 knots.

### **DRAG CHUTE HANDLE**

The DRAG CHUTE handle, on the right-side of the pedestal, controls the drag chute deploy and jettison functions. To deploy the drag chute, "squeeze" the handle firmly to release the handle locks and, without hesitation, pull handle to full extension. Pulling the handle to full extension requires approximately 50 pounds (222 newtons) of force. To jettison the chute, after deployment, squeeze handle firmly and push the handle full down. It is recommended that the aircraft be headed into the wind to avoid fouling the chute on the aircraft. For detailed operating instructions, limitations, and preflight check, refer to the FAA Approved Drag Chute AFM Supplement.

## MISCELLANEOUS EQUIPMENT

### MONOGRAM Toilet

This flush-type toilet may be installed in the aircraft as optional equipment. The flush cycle is initiated by pressing the Press to Flush button on the seat and shroud assembly. Flushing continues until the push button is released. During the flushing cycle, flushing fluid is pumped from the waste tank to the bowl by the self-priming pump assembly. The flush fluid enters the bowl and washes the inner surface of the bowl. Waste is carried to the waste tank through the knife valve below the bowl.

**Caution:** When servicing the toilet, any spillage should be cleaned immediately from contact with surrounding structure.

Servicing of the toilet is accomplished by removing the tank assembly located at the bottom of the bowl. The tank assembly detaches from the toilet at the front of the unit. Two fasteners, one on each side of the knife valve, secure the installed tank in the sealed position against the bottom of the bowl. Detach and drain the flush line at the quick disconnect, depress the two fasteners, and pull the carrying handle. The tank may now be easily removed for servicing.

The toilet receives 28 VDC supplied through the 10-amp TOILET circuit breaker on the CABIN PWR BUS (overhead panel between the two crew members).

### ALAMO Toilet

This flush-type toilet may be installed in the aircraft as optional equipment. The flush cycle is initiated by closing the toilet seat cover. A flap will automatically close, thereby sealing the waste container. Flushing fluid is pumped from the reservoir around the bowl and back to the reservoir.

**Caution:** When servicing the toilet, any spillage should be cleaned immediately from contact with surrounding structure.

Servicing of the toilet is accomplished by removing the sealed waste container from the toilet assembly. Lift the strap at the rear of the lid assembly to the full open position. Remove waste container sealing lid from bracket and snap into place on waste container. Remove waste container and dispose of contents.

The toilet receives 28 VDC supplied through the 10-amp TOILET circuit breaker on the CABIN PWR BUS (overhead panel between the two crew members).