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## LANDING GEAR EMERGENCY PROCEDURES

### MANUAL GEAR EXTENSION

Use of this procedure is indicated by an indication other than normal indication of gear down and locked.

**Both Hydraulic System "A" Pumps** ..... OFF FE

**Landing Gear Lever** ..... OFF PNF

Keep lever in OFF position until manual extension is completed.

**Airspeed** ..... 270 KNOTS OR LESS PF

**Landing Gear** ..... EXTEND MANUALLY FE

If necessary, rotate the aft Observer's seat 90° to allow clearance for the crank handle.

Obtain the hand crank and open the access panel of the gear to be extended and read the instructions on the inner face of the panel. Insert the crank in the socket and follow the placarded instructions.

The placard instructions are printed below for convenience:

#### Left Gear:

1. Rotate slowly clockwise  $y$  2 ½ turns.
2. Pause five seconds.
3. Continue to rotate clockwise  $y$  to the mechanical stop.
4. Rotate counterclockwise  $z$  to the mechanical stop (approximately four turns).

#### Right Gear:

1. Rotate slowly counterclockwise  $z$  2 ½ turns.
2. Pause five seconds.
3. Continue to rotate counterclockwise  $z$  to the mechanical stop.
4. Rotate clockwise  $y$  to the mechanical stop (approximately four turns).

#### Nose Gear:

1. Rotate clockwise  $y$  until the gear extends (approximately two to three turns).
2. Rotate counterclockwise  $z$  until gear locked down (approximately five turns).

On completing the instructions, observe the corresponding green landing gear down and locked indicator light illuminated and red doors light illuminated.

The red landing gear disagreement lights will remain illuminated until gear handle is placed in the down position.

Remove crank and close access panel. Repeat as appropriate for all other landing gear to be extended manually. Replace hand crank in retainer.



**WARNING**



**DO NOT LEAVE THE CRANK IN THE SOCKET. SERIOUS PERSONAL INJURY  
COULD RESULT IF THE LANDING GEAR IS RETRACTED.**

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**MANUAL GEAR EXTENSION (CONTINUED)**

**Landing Gear Lever** ..... DOWN, IN    PNF

If a green light fails to illuminate check secondary indicators or gear viewer port if possible (i.e., no cargo) for indication. Two red stripes will be aligned in the viewing port if the gear is down and locked. Nose gear viewer is in center aisle floor one foot aft of cockpit. Main gear viewers are opposite the fourth window aft of the aft overwing emergency escape hatch.

**Both Hydraulic System "A" Pumps** ..... ON    FE

Position both System "A" pumps to ON.

If System "A" pressure is available, the main gear doors will close and the tailskid will extend.

**Note:**

If System "A" hydraulic pressure is available, the landing gear can be retracted normally, even though one or more gear have been extended manually.



**PARTIAL OR GEAR UP LANDING**

After attempting to extend the landing gear using normal and manual extension procedures and observing one or more red landing gear disagreement warning lights illuminated. A constant warning horn will sound when the flaps are selected to a landing position.

- Consider all relevant factors: Destination, facilities, time available, airplane configuration, landing C.G., runway foaming, etc.
- After every means has been used to extend the landing gear, dump fuel as required
- Brief crew and supernumeraries on landing and evacuation
- Plan flaps 40 landing, if possible

**DESCENT**

**Approach Briefing**.....COMPLETE PF

The approach briefing should be conducted as early as possible, in accordance with the GOM.

**Landing Data** ..... SET & X-CHKD ALL

The PF should verbally identify the  $V_{TH}$  and  $V_{APP}$  speeds and the Go-Around EPR setting.

**Shoulder Harness** ..... ON ALL

**Lights** ..... ON C

Turn inboard landing lights ON. In high traffic areas, consider use of wing and logo lights (as installed) for increased recognition.

**Air Conditioning** ..... CHECKED FE

Check temperatures and cooling door positions.

**Pressurization** ..... SET FE

Set pressurization system to have cabin depressurized by 3,000 feet AGL.

Electronic system – Set LAND ALT and CAB ALT selectors to field elevation plus 3,000 feet, and BARO selector to landing airport QNH.

Pneumatic system - Set Cabin Altitude selector to field elevation plus 3,000 feet, and BARO selector to landing airport QNH. Adjust rate as desired.

**Supernumeraries**..... BRIEF C

The Captain may designate the FO or FE to brief the supernumeraries.

----- **TRANSITION LEVEL** -----

**Altimeters**..... (in/hP), SET ALL

The altimeter setting (QNH) will be called out, in the format reported by ATC by all three crewmembers. The Flight Engineer will confirm both pilots' altimeter settings and the pressurization control barometric setting.

**GPWS Flap Inhibit Switch** ..... FLAP INHIBIT FO

Place the GPWS Flap Inhibit switch to INHIBIT.

If a Flap Inhibit switch is not installed the FE will pull the GPWS circuit breaker.

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**PARTIAL OR GEAR UP LANDING (CONTINUED)**



*If the GPWS c/b pulled, all GPWS, Windshear warnings, and automatic altitude callouts will be inoperative.*

<b>Landing Gear Warn Horn C/B (P6-1)</b> .....	<b>PULL</b>	<b>FE</b>
Disable the warning horn to prevent continuous sounding when flaps are selected past 25 (15/20 for Raisbeck depending on available detents).		
<b>Crew Oxygen Valve</b> .....	<b>CLOSE</b>	<b>FE</b>
<b>Galley Power</b> .....	<b>OFF</b>	<b>FE</b>
<b>Cockpit Door</b> .....	<b>SECURE OPEN</b>	<b>FE</b>
<b>After Touchdown Procedure</b> .....	<b>REVIEW</b>	<b>ALL</b>

- Extend speedbrakes manually to required position:
  - For both main gear down and nose gear up, raise speedbrakes normally
  - For nose gear down and both main gear up, or all gear up, raise speedbrakes normally. (No ground spoilers will be available)
  - For one main gear and nose gear down, and one main gear up, raise speedbrakes to 20 degree position only for maximum lateral control. (No ground spoilers will be available if left main gear is retracted)
  - Fuel boost pumps all OFF
  - Reversing and brakes as necessary

----- **AT 3,000 FEET AGL** -----

<b>Cabin Differential Pressure</b> .....	<b>REDUCE TO ZERO</b>	<b>FE</b>
If cabin has not fully depressurized: Electronic – Select MAN DC and manually adjust the outflow valve to full OPEN. Pneumatic – Adjust the manual pressurization controller to DECREASE PRESSURE to depressurize the cabin.		

**WHEN DIFFERENTIAL PRESSURE ZERO:**

<b>Both Air Conditioning Packs</b> .....	<b>OFF</b>	<b>FE</b>
<b>All Engine Bleed Air Valves</b> .....	<b>CLOSE</b>	<b>FE</b>

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**PARTIAL OR GEAR UP LANDING (CONTINUED)**

**APPROACH**

**HSI Source Selector** ..... NAV (RADIO) C,FO

**Flight and NAV Instruments** ..... SET & X-CHKD C,FO

Verify all flight instruments and navigation aids are set for approach, and that all respective instruments crosscheck.

**LANDING**

.....**Landing Gear Lever** .....DOWN, IN, \_\_\_ GREEN PNF.....

**Anti-Skid** ..... TESTED FE

Should show blanks on positions being tested.

**Ignition** ..... ON FE

Continuous Ignition switch ON.

With no Continuous Ignition switch installed, place Start switches of operating engines to FLIGHT.

**Fuel Panel** ..... SET FE

Vary fuel feed with crossfeed valves to maintain fuel balance limitations. Set tank to engine prior to landing.

----- **LANDING FLAPS SET** -----

**Flaps** ..... \_\_\_ °; \_\_\_ ° GREEN PNF

Verify the inboard and outboard flaps are at the selected landing flap position, and the green LE FLAPS light is illuminated.

**Hydraulics** ..... NORMAL FE

Check system pressures and quantities normal, and brake hydraulic and pneumatic pressures normal.

.....**Emergency Exit Lights** ..... ON FE.....



**LANDING GEAR ABNORMAL PROCEDURES**

**LANDING GEAR DOOR WARNING LIGHT ILLUMINATED**

This condition exists any time landing gear is retracted or extended and gear door warning light is illuminated. Observe landing gear operating speed limit.

**IF AFTER TAKEOFF:**

**Landing Gear** ..... RECYCLE PNF

Extend and retract landing gear. Observe door warning light for indication that door has closed.

**If gear door warning light does not extinguish:**

Observe landing gear operating speed limit.

**IF DURING CLIMB, CRUISE OR DESCENT:**

**Landing Gear Lever** ..... UP PNF

Position landing gear lever UP and observe gear door warning light extinguishes. Leave landing gear lever in UP position.

**If gear door warning light does not extinguish:**

Observe landing gear operating speed limit.

Expect performance penalties. See Gear Down Cruise (See [Gear Down Cruise in Chapter 6D](#) for -15 engines) or See Gear Down Cruise (See [Gear Down Cruise in Chapter 6C](#) for -9 engines) for gear down cruise altitude capability and fuel consumption.



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**LANDING GEAR WARNING LIGHT ILLUMINATED**

This condition exists whenever red landing gear warning light is illuminated, unless caused by retarding thrust lever(s) when flaps are 0 - 25. Landing gear warning horn may also sound.

**Landing Gear** ..... RECYCLE    PNF

When flight conditions permit, accomplish a full recycle of the landing gear.

**Gear Door Light**..... MONITOR    FE

If the gear door light illuminates and extinguishes during both extension and retraction cycle, and all green position lights indicate properly, consider the gear in desired position.

**FOLLOWING GEAR RETRACTION:**

**If the green gear position lights indications abnormal:**

**Landing Gear Extended Speeds** ..... OBSERVE    PF

**FOLLOWING GEAR EXTENSION:**

**Manual Gear Extension Procedure**

(See [Manual Gear Extension in Chapter 4](#) .....ACCOMPLISH    FE



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**GEAR DOWN AND LOCKED LIGHTS EXTINGUISHED WITH GEAR LEVER DOWN**

When hydraulic System "A" is normal and the landing gear lever is in the DN (Down) position, three green gear lights should illuminate, indicating that gear is "down and locked." If one or more green lights do not illuminate, or if one or more red lights do not extinguish, the following procedures, as appropriate, can be used to verify that the gear is "down and locked" or is in fact unsafe.

- Gear Warning Lights**..... TEST    PNF  
Verifies light bulb and circuit integrity.
- Wheel Well Lights** .....ON    FO  
Alternate Gear Down
- Lock Indicators**..... CHECK LOCKED    FE  
Check secondary main gear indicators, or if possible check affected main gear red down lock stripes aligned. Check nose gear red down lock stripes aligned if nose gear affected.

**IF ALTERNATE GEAR DOWN LOCK INDICATORS CONFIRM THE AFFECTED GEAR NOT DOWN AND LOCKED:**

- Manual Gear Extension Procedures** .....ACCOMPLISH    FE