

Airplane Flight Manual

The Airplane must be operated in compliance with the LIMITATIONS prescribed herein.

MODEL	A/C EFFECTIVITY
BD-100-1A10	20501-20999
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CHALLENGER 350

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POWERPLANT LIMITATIONS

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SYSTEMS LIMITATIONS**AIR CONDITIONING AND PRESSURIZATION****AIR CONDITIONING**

Do not select the AIR SOURCE switch to TRIM AIR ONLY while the airplane is on the ground.

The pack must be operating (APU or engine running and AIR SOURCE switch – NORM or PACK ONLY) when the airplane electrical power is on (BATTs or EXT PWR – On) for more than 30 minutes and the OAT is above 40 °C (104 °F).

OXYGEN

The following airplane certification requirements are in addition to the requirements of applicable operating rules. The most restrictive requirements (certification or operating) must be observed.

Crew and passenger oxygen masks are not approved for use above 40,000 feet cabin altitude. Prolonged operation of passenger masks above 25,000 feet cabin altitude is not recommended.

PRESSURIZATION

The maximum differential pressure on the ground (during taxi) must not exceed 0.1 psi.

The maximum differential pressure during landing must not exceed 1.0 psi.

The maximum positive differential pressure is 9.4 psi. The maximum negative differential pressure is –0.5 psi.

AUTOFLIGHT

WARNING: During the ALTS CAP mode the flight guidance/autopilot may not maintain the selected airspeed. If an engine failure occurs during a climb while in ALTS CAP or just before ALTS CAP, the airspeed may rapidly decay below the safe operating speed. Crew intervention may be required to maintain safe operating speed and to avoid loss of control.

Do not intentionally overpower the autopilot.

Autopilot Minimum Engage Height:

Climb, En Route, or Descent700 feet AGL

Autopilot Minimum Use Height:

SYSTEMS LIMITATIONS (CONT)

Approach

Precision with glidepath angle of 3.5 degrees or less.....80 feet AGL

Precision with glidepath angle between 3.5 and 4.5

degrees.....160 feet AGL

Visual and non-precision200 feet AGL

The maximum altitude with yaw damper off is 31,000 ft.

It is prohibited to select the XFR button on the flight guidance panel while simultaneously making inputs on an FMS CDU.

AVIONICS

DATA LINK

All weather products data linked to the airplane are advisory.

Effectivity:

For airplanes on the Russian Federation (RF) and Commonwealth of Independent States (CIS) countries registry:

NOTE: Use of DATALINK is not permitted for ATC purposes.

Crew actions based on messages such as digital automatic terminal information service, weight and balance, take-off data (speeds, trim settings, runway distances) are prohibited unless the approved operational procedures are used to verify that the message is received by the intended recipient, that the message is valid, and that the content is not corrupted.

Effectivity:

On EASA registered airplanes:

ATN CPDLC shall only be used for routine datalink exchanges during en-route operations in upper airspace.

FANS CPDLC must be operated in accordance with ATN and FANS Interlocked CPDLC Applications Operators Guide (part number 5230822435 at the latest applicable revision).

The crew must ensure that the FMS is updated with the proposed flight plan and its associated constraints and procedures when receiving a route clearance via CPDLC.

Before executing any flight plan modification received via CPDLC, the crew must ensure that the entire content of the flight plan has been inserted.

SYSTEMS LIMITATIONS (CONT)

Use of FANS INSERT MOD is prohibited within 5 NM of sequencing a waypoint.

It is prohibited to use the WX DEV TO from the FANS ROUTE REQ 1/2 page.

It is prohibited to use the DIVERT TO from the EMERGENCY MSG 1/2 page using the FANS REQUEST page.

FLIGHT MANAGEMENT SYSTEM (FMS)

The FMS must be operated in accordance with the latest revision of the following:

- Airplane Flight Manual, and
- Rockwell Collins Operators Guide – Bombardier Challenger 300/350 Pro Line 21 Advance Flight Management System (publication 523–082088 at the latest applicable revision).

If a difference exists between the AFM and the Rockwell Collins FMS Operator's Guide, the AFM shall take precedence. The Rockwell Collins FMS Operator's Guide (Part number 523–082088 at the latest applicable revision) must be immediately available to the flight crew whenever navigation is predicated on the use of the FMS.

The FMS is approved for use with software version [HSCD CPN 946–2720–101, or later applicable revision].

Effectivity:

On airplanes 20664 and subsequent, and airplanes incorporating SB 350–34–012:

The FMS is approved for use with software version [HSCD CPN 946–2720–130, or later applicable revision].

Effectivity:

On airplanes 20578 and subsequent, and airplanes incorporating SB 350–34–013:

The performance database part number must be verified to be 096–5327–001.

FMS performance data, ETE/ETA and Fuel Remaining information is advisory only. Airplane operation must not be predicated upon FMS performance data.

NOTE: Measured mode or manual entry fuel predictions will not be updated while a flight plan modification is open.

SYSTEMS LIMITATIONS (CONT)

Effectivity:

On airplanes 20501–20663 not incorporating SB 350–34–012:

The V–speed database part number must be verified to be 096–5016–001.

NOTE: The FMS V–speed database (version 096–5016–001) does not permit calculation of Actual Landing Distances (ALD) on contaminated runways (ice, compacted snow, dry snow or water/slush). Use the CAFM or the QRH, as appropriate, to determine the ALD on a contaminated runway.

Effectivity:

On airplanes 20664 and subsequent, and airplanes incorporating SB 350–34–012:

The V–speed database part number must be verified to be 096–5016–002.

- The FMS V–speed data does not need to be verified with the AFM, provided both Flight Management Computers are available.

For some high airport altitude conditions, the CAFM TOFL can be longer than the corresponding FMS V–speed TOFL. This results in a lower weight limited by runway length. For airport pressure altitudes of 8000 ft and above, the FMS V–speed TOFL must be compared to the corresponding CAFM result. If the CAFM TOFL is longer than the FMS value, then the CAFM TOFL and takeoff speeds (V_1 , V_R , V_2 and V_{FTO}) must be used for operation.

Effectivity:

For airplanes on the Russian Federation (RF) and Commonwealth of Independent States (CIS) countries registry:

- The FMS V–speed data does not need to be verified with the AFM, provided both Flight Management Computers are available.

Effectivity:

On airplanes 20501–20663 not incorporating SB 350–34–012:

- V–speed database part number must be verified to be: 096–5016–001.

NOTE: The FMS V–speed database (version 096–5016–001) does not permit calculation of Actual Landing Distances (ALD) on contaminated runways (ice, compacted snow, dry snow or water/slush). Use the CAFM or the QRH, as appropriate, to determine the ALD on a contaminated runway.

SYSTEMS LIMITATIONS (CONT)

Effectivity:

On airplanes 20664 and subsequent, and airplanes incorporating SB 350-34-012:

- The V-speed database part number must be verified to be 096-5016-002.

It is prohibited to load pilot routes from the PILOT ROUTE LIST during flight.

It is prohibited to upload flight plans from ROUTE MENU (FPLN RECALL) during flight.

It is prohibited to select FPLN WIND UPDATE from the ROUTE MENU.

It is prohibited to tune a localizer on the TUNE page using the identifier only.

It is prohibited to initiate a NAV RADIO SELF TEST from either the NAV radio tuning page on the FMS CDU or the MFD nav radio menu during flight.

Effectivity:

On airplanes 20664 and subsequent, and airplanes incorporating SB 350-34-012:

It is prohibited to use the FMS as a navigation source when it is not receiving suitable navigation information from the following:

- One GNSS; or
- Two DMEs; or
- One VOR / DME; or
- One IRS.

Effectivity:

On airplanes 20501-20663 not incorporating SB 350-34-012:

It is prohibited to use the FMS as a navigation source when it is not receiving suitable navigation information from the following:

- Two GNSSs.

Use of the FMS Secondary Flight Plan function is prohibited.

SYSTEMS LIMITATIONS (CONT)

FMS navigation (FMS selected as NAV Source) and display of magnetic heading is prohibited in Canadian Northern Domestic Airspace and at the following locations:

- All latitudes greater than N82°.
- Latitudes greater than N73° if between W080° and W170° longitude.
- At latitude greater than S82°.
- Latitude greater than S60° if between E120° and E160° longitude.

It is prohibited to load FMS procedures that are referenced to True Heading into the flightplan.

It is prohibited to use the FMS as the primary source of navigation during periods of dead reckoning (indicated by the FMS DR message).

IFR navigation is prohibited unless the pilot verifies the currency of the database or verifies the waypoints for accuracy by reference to current publications.

When conducting RNP operations the pilot must verify the PFD CDI scale annunciation is appropriate for the RNP leg as follows:

- RNP APCH CDI Scale 0.3 nm
- BASIC RNP-1 CDI Scale 1.0 nm
- RNP-2 CDI Scale 2.0 nm
- RNP-4 CDI Scale 4.0 nm (selected by pilot)
- RNP-10 CDI Scale 4.0 nm (selected by pilot).

When conducting BASIC RNP-1 operations, the length of each individual flight plan leg or between the airplane position and the TO waypoint must not exceed 200 NM.

When conducting RNP-2 operations, the length of each individual flight plan leg or between the airplane position and the TO waypoint must not exceed 400 NM.

When conducting RNP-4 or RNP-10 operations, the length of each individual flight plan leg or between the airplane position and the TO waypoint must not exceed 500 NM.

Pilot defined waypoints (e.g. along track offset) must not be used to create individual legs shorter than the limiting length.

When conducting non-AR RNP operations, pilots should maintain CDI lateral deviation less than +/-1 dot deviation except brief deviation in excess of +/-1 dot deviation during waypoint sequencing is permitted.

SYSTEMS LIMITATIONS (CONT)

Effectivity:

On airplanes 20501–20663 not incorporating SB 350–34–012:

Performing any departure, arrival, approach or missed approach procedure that contains any radius-to-fix (RF) leg(s) is prohibited.

RNAV operations per AC 90–100A or AC 90–96A in RNAV 1, RNAV 2 or RNAV 5 are prohibited with any of the following FMS messages annunciated:

- FMS DR (PFD, MFD or CDU)
- IRS ONLY (PFD, MFD or CDU)
- VOR/DME ONLY (CDU) or V/D ONLY (PFD)
- VOR/DME DIST > 40.0 NM (CDU)
- CHK POS (PFD or CDU).

RNP operations with any of the following FMS messages annunciated, are prohibited:

- NO APPR (PFD)
- UNABLE RNP (PFD).

PERFORMANCE

The FMS will automatically display the displaced thresholds of runways provided that they are identified in the loaded active cycle FMS navigation database. If RUNWAY LENGTH is manually entered then the FMS will not compute headwind/crosswind; these must be manually entered.

VERTICAL NAVIGATION

Vertical guidance deviation information is an aid to assist pilots to comply with altitude restrictions and plan descent profiles. When using vertical guidance the pilot must use the primary barometric altimeter to ensure compliance with altitude restrictions, particularly during instrument approach operations.

Use of VNAV vertical guidance is prohibited when the barometric altitude is corrected to the landing field elevation (QFE).

Use of VFLC (FLC with VNAV) is prohibited during climb when the airspeed reference is displayed as Mach.

It is prohibited to select MCRZ from the FMS VNAV CRUISE page.

It is prohibited to select VNAV following a go-around during the missed approach procedure.

SYSTEMS LIMITATIONS (CONT)

The flight crew must verify any altitude/speed constraints on the last waypoint of any entered STAR procedure and/or the first waypoint of any entered approach procedure. The flight crew may correct any such altitude/speed constraint(s) as required to agree with current chart procedures.

Effectivity:

On airplanes 20501–20663 not incorporating SB 350–34–012:

Use of barometric VNAV vertical guidance is prohibited.

CAUTION: Errors to VNAV defined paths may occur because of coding errors in the navigation data base and because of altimetry errors. The actual VNAV path may deviate significantly below the intended VNAV path in very cold temperatures; the temperature compensation function is used to correct for non-standard temperatures. Flight crew must coordinate use of temperature compensation with ATC prior to employing this function.

Database coding of VNAV altitudes for approach waypoints may result in VNAV paths continuing below Minimum Descent Altitude (MDA), Decision Altitude (DA), or Decision Height (DH), or ending at an altitude too high to continue a safe descent to landing. VNAV paths (often called pseudo glide paths) are not equivalent to an ILS glideslope.

Position along an approach must be verified prior to commencement of VNAV descent as displayed by the FMS. The required visual reference must be obtained prior to commencing descent below published MDAs, DAs, or DHs.

APPROACH

Instrument approaches must be accomplished only in accordance with instrument approach procedures that are contained in the FMS database.

NOTE: Vectored ILS approaches are exempt from this limitation as they do not require nor do they rely on FMS guidance. ILS back course approaches also are exempt if they are vectored.

It is prohibited to conduct LPV Approach operations with FMS2 as pilot navigation source and FMS1 as copilot navigation source.

Use of FMS instrument approaches is prohibited unless RNP APPR or LPV APPR is annunciated on the PFD.

SYSTEMS LIMITATIONS (CONT)

RNP operations down to LPV minimum when any of the following messages are present, are prohibited:

- Red boxed “VNV” flag (vertical deviation scale on PFD)
- NO APPR (on PFD)
- EFIS MISCOMPARE (CAS message)
- EFIS COMPARATOR INOP (CAS message)
- LPV NOT AVAIL (on CDU)

RNP operations down to LPV minimum must not be commenced or continued unless all required airborne equipment are operating satisfactorily.

The following airborne equipment must be installed and operational:

- Dual PFD
- Two GNSS/SBAS sensors must be available to commence an approach and one GNSS/SBAS sensor is required to continue an approach.
- Dual FMS.

Use of VNAV vertical guidance for VMDA type approach between the final approach fix and the missed approach fix is prohibited.

FMS as a primary navigation source beyond the FAF is prohibited for ILS, LOC and LOCBC approaches.

FMS as a supplementary navigation source beyond the FAF is permitted when APPR or REF APPR is annunciated on the PFD if the navigation aid referenced in the approach procedure is displayed and monitored by the flight crew during the approach.

NOTE: For the FMS approaches for which GNSS is not authorized as a primary navigation source (i.e. GNSS does not appear in the approach title), APPR will be annunciated on the PFD if the GNSS sensors are deselected; otherwise, REF APPR will be annunciated.

The FMS with inputs from GNSS may only be used for approach guidance if the reference coordinate data system for the instrument approach is WGS84 or NAD83.

GNSS sensors must be deselected when on approach in airspace not referenced to WGS84 or NAD83.

SYSTEMS LIMITATIONS (CONT)

When conducting an instrument approach with a T-Transition and utilizing VNAV for descent guidance, indicated airspeed at the initial approach fix must be 210 KIAS or less.

Other than automatic FMS temperature compensation, changes to altitudes in the final approach segment (including FAF and step-down fixes) for any FMS approach procedures are prohibited.

SYNTHETIC VISION SYSTEM (SVS)

- TAWS alerts must take priority over the image depicted on SVS.
- Use of the SVS for airplane navigation is prohibited.
- Use of the SVS is prohibited when the barometric altitude is corrected to the landing field elevation (QFE).
- When conducting an approach in airspace not referenced to WGS-84 or NAD-83, the SVS shall be deselected prior to passing the FAF.
- When conducting an approach to a runway not entered in the FMS flight plan, the SVS shall be deselected.
- The SVS Airport/Runway database must incorporate the current update cycle. If not, the SVS shall be deselected prior takeoff and prior to passing the FAF.
- The SVS does not render a video image above latitude 85N and below latitude 85S. The SVS shall be deselected prior reaching these latitudes.

The Synthetic Vision System is intended as a situational awareness enhancement feature and shall not be the sole source of reference by the pilot for any of the following:

- Continuation of an approach, landing or takeoff below the minima published for that approach
- Execution of an approach, landing or takeoff in low visibility conditions
- As a replacement for natural vision where there are specific visual requirements to be achieved
- As a replacement for the basic attitude, flight guidance or navigation displays and information
- The performance of any specific flight related task
- The flight crew making any judgment, decision or action that is solely based on the synthetic vision display
- The application of any operational credit.

SYSTEMS LIMITATIONS (CONT)**NAVIGATION RECEIVER**

It is prohibited to conduct ILS Approach operations with LOC2 as pilot navigation source and LOC1 as copilot navigation source.

It is prohibited to navigate using VOR or LOC as Nav source when displaying true heading mode.

STANDBY INSTRUMENT

Use of the standby instrument localizer deviation guidance is prohibited during localizer backcourse approaches.

STANDBY COMPASS

L and R WSHLD/WINDOW switches must be temporarily selected OFF while the standby compass is being read.

INTEGRATED FLIGHT INFORMATION SYSTEM

- Incorporation of Dual IFIS does not constitute operational approval to dispatch without adequate backup documentation.
- The IFIS related databases utilized (i.e. charts, airspace, airways, geographic, political, graphical weather) must incorporate the current update cycle.
- The IFIS does not include enroute charts.
- The airplane symbol on the electronic charts is advisory and is presented for increased situational awareness. It is not to be used for navigation.
- The display of geo-political boundaries, airspace and airways on the MFD (Enhanced Map overlays) is for enhanced situational awareness only, and use for navigation is prohibited.
- All weather products data linked to the airplane are advisory.
- For a single IFIS, adequate backup documentation must be immediately available to the flight crew.
- The airplane symbol displayed on airport diagram charts during ground operations is advisory and is presented for increased situational awareness. It is not to be used for precision maneuvering on the ground.
- It is not possible to display landscape formatted approach charts in split view.

SYSTEMS LIMITATIONS (CONT)

Effectivity:

For ANAC (Brazilian) registered airplanes:

VHF SYSTEM

Use of the VHF selected for 8.33 kHz channel spacing in airspace where 25 kHz channel spacing is used, is prohibited.

Effectivity:

For airplanes on the Russian Federation (RF) and Commonwealth of Independent States (CIS) countries' registry:

NAVIGATION

During normal flight, reversion of ATT, HDG and ADC is **not** permitted.

TERRAIN AWARENESS AND WARNING SYSTEM (TAWS)

Navigation must not be predicated upon the use of the terrain awareness display.

TAWS TERRAIN OFF must be selected when using QFE operations, and GPS is not available.

TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS)

Maneuvers must not be based solely on information presented on the traffic map overlay.

Effectivity:

For airplanes on the Russian Federation (RF) and Commonwealth of Independent States (CIS) countries' registry:

Flight is not permitted along routes where ATC service provided is not in RBS mode.

TCAS II TA/RA mode is not recommended on routes where ATC modes not limited to RBS are provided. On these routes, while in TA mode, the pilot action shall be coordinated with ATC.

WEATHER RADAR

Weather Radar information must be displayed continuously on at least one (1) PFD or MFD during the entire flight.

Following a TAWS terrain caution or terrain warning, the Weather Radar information must be reinstated on at least one (1) PFD or MFD, after the encounter has been resolved.

SYSTEMS LIMITATIONS (CONT)

Effectivity:

On Argentinean registered airplanes:

GLOBAL POSITIONING SYSTEM (GPS)

Pilot is not authorized to use the GPS for precision approach and landing.

EMERGENCY LOCATOR TRANSMITTER (ELT)

The ELT must comply with RAAC 91.207.

ELECTRICAL

GROUND OR FLIGHT OPERATIONS

Continuous:

Two or three generators operating 400 amps

One generator operating (on the ground)..... 400 amps

One generator operating (in flight) 500 amps

Transient (5 minutes) 600 amps

NOTE: Refer to APU LIMITATIONS in this chapter for APU generator altitude limits.

- It is prohibited to take off if battery temperatures are below -20°C (-4°F).

FLIGHT CONTROLS

FLAPS

- It is prohibited to extend the flaps above 18,000 ft.

SPOILERS

- It is prohibited to select Flight Spoilers to EMER except during emergency conditions or as required by procedure.

Flight spoilers must not be extended in flight at airspeeds below approach speed + 8 KIAS.

Flight spoilers must not be extended in flight below 500 ft AGL.

HYDRAULICS

Hydraulic fluid of type Phosphate Ester Fire-Resistant per BAMS 564-003 Type IV, Skydrol LD-4, Hyjet IV-a Plus is approved for use.

SYSTEMS LIMITATIONS (CONT)**LANDING GEAR, WHEELS & BRAKES**

It is prohibited to extend the gear above 18,000 ft.

Brake cooling times (established in accordance with the procedures in Chapter 6 – PERFORMANCE DATA) must be observed between a landing or a rejected takeoff (RTO) and a subsequent takeoff, to ensure that a sufficient brake energy is available to bring the airplane to a complete stop, if the subsequent takeoff is rejected.

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POWERPLANT

L (R) ENGINE EXCEEDANCE (W)

Affected Engine:

1. Thrust lever Retard

Engine responds:



2. Continue flight.

– END –



2. Affected engine RUN switch OFF

Engine shuts down:



3. Refer to Engine Shutdown In Flight procedure in the NON-NORMAL PROCEDURES chapter.

– END –



3. Affected ENG FIRE switch Push

4. Refer to Engine Shutdown In Flight procedure in the NON-NORMAL PROCEDURES chapter.

Effectivity:

For aircraft on the Russian Federation (RF) and Commonwealth of Independent States (CIS) countries' registry:

NOTE: If thrust exceedance occurs while flying on the glideslope for final approach:

- a. Perform a go-around.
- b. Follow the procedures for L(R) ENGINE EXCEEDANCE (W) for the affected engine.

— END —

POWERPLANT

L (R) ENGINE FIRE (W)



“LEFT (RIGHT) ENGINE FIRE”

DURING TAKEOFF

Below V_1 Speed:

1. Thrust levers IDLE
2. Brakes..... Maximum, or as required
3. Thrust reversers MAX REV or as required

After Stopping:

4. PARK/EMER BRAKESet
5. Affected ENG FIRE switchFIRE push
6. FIRE EXT 1 and 2 switches.....ARMED push
7. EMER DEPRESS switch..... ON
8. Non-affected ENG and APU FIRE switchesPush
9. Evacuation Command
10. Controlling Agency..... Notify
11. STBY INST switch..... OFF
12. L and R BATT switches..... OFF

13. Evacuate the airplane using the passenger door and/or the emergency exit.

– END –

POWERPLANT

L (R) ENGINE FIRE (W) (Cont)

Above V_1 Speed:

1. Rotate at V_R .
2. Pitch attitude **Adjust as required**
to achieve V_2 .

NOTE: Initially rotate toward the flight director pitch guidance command.
Adjust pitch as required to maintain V_2 .

3. **LANDING GEAR switch** **UP**
after positive rate of climb.
4. **Affected engine thrust lever** **IDLE**
unless a critical thrust situation exists.

5. **Affected ENG FIRE switch** **FIRE push**
After 10 seconds if L (R) ENGINE FIRE CAS persists or there are other indications of fire:

6. **FIRE EXT 1 switch** **ARMED push**
After 30 seconds if L (R) ENGINE FIRE CAS persists or there are other indications of fire:

7. **FIRE EXT 2 switch** **ARMED push**

8. Affected engine RUN switch OFF
9. Affected FUEL PUMP switch OFF, if not required
10. Climb at V_2 until clear of obstacles, accelerate to $V_2 + 15$ (Flaps 10) [$V_2 + 25$ (Flaps 20)].
11. Flaps Retract to 0
12. Climb At en route climb speed
13. Rudder trim As required
14. N LDG/TAXI light switch OFF
15. ANTI/ICE panel As required
16. Monitor fuel balance. Transfer as required. Fuel PUMP may be used.
17. Land as soon as possible.
18. Refer to Single Engine Landing procedure in the NON-NORMAL PROCEDURES chapter.

– END –



POWERPLANT

L (R) ENGINE FIRE (W) (Cont)

IN FLIGHT

Affected Engine:

1. Thrust lever **IDLE**

unless a critical thrust situation exists.

2. Affected ENG FIRE switch **FIRE push**

After 10 seconds if L (R) ENGINE FIRE CAS persists or there are other indications of fire:

3. FIRE EXT 1 switch **ARMED push**

After 30 seconds if L (R) ENGINE FIRE CAS persists or there are other indications of fire:

4. FIRE EXT 2 switch **ARMED push**

5. Affected engine RUN switch **OFF**

6. Affected FUEL PUMP switch **OFF**, if not required

7. Rudder trim **As required**

8. Monitor fuel balance. Transfer as required. Fuel PUMP may be used.

9. Land as soon as possible.

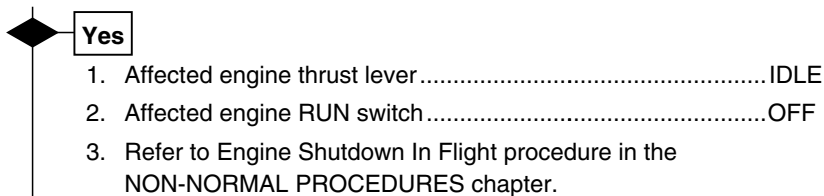
10. Refer to Single Engine Landing procedure in the NON-NORMAL PROCEDURES chapter.

END

POWERPLANT

L (R) ENG OIL PRESS LOW (W)

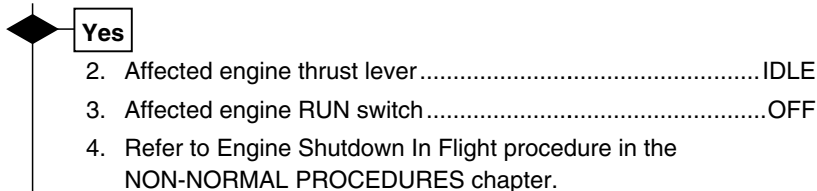
ENG OIL PRESS LOW (W) CAS is displayed and L (R) OIL PRESS digits are red:



Only the L (R) OIL PRESS digits are red:

1. Affected engine OIL TEMP Check

OIL TEMP is high:



2. OIL PRESS and OIL TEMP Monitor
- The most likely problem is a single pressure sensor failure.

————— END —————

POWERPLANT

L (R) REVERSER UNSAFE (W)

REV EI

DURING TAKEOFF

Below V_1 Speed:

1. Thrust levers IDLE

2. Brakes..... Maximum, or as required

3. Thrust reversers MAX REV or as required

– END –

Above V_1 Speed:

1. Rotate at V_R .

2. Pitch attitude Adjust as required to achieve V_2

NOTE: Initially rotate toward the flight director pitch guidance command. Adjust pitch as required to maintain V_2 . Flight director pitch guidance command may indicate high for conditions.

3. LANDING GEAR switch..... UP after positive rate of climb

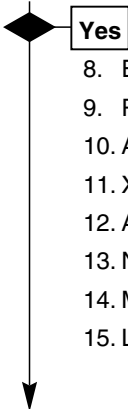
4. Affected engine thrust lever IDLE

5. Climb at V_2 until clear of obstacles, accelerate to $V_2 + 15$ (Flaps 10) [$V_2 + 25$ (Flaps 20)].

6. Flaps Retract to 0

7. Climb..... At en route climb speed

Other indications of thrust reverser deployment are present (buffeting or excessive pitch, roll or yaw):



8. ENGINE RUN switch (deployed engine) OFF

9. Rudder Trim..... As required

10. Affected BLEED switch..... OFF

11. XBLEED switch Open

12. Affected ENG ANTI-ICE switch OFF

13. N LDG/TAXI light switch OFF

14. Monitor fuel balance. Transfer as required.

15. Land as soon as possible.

POWERPLANT

L (R) REVERSER UNSAFE (W)

REV EI (Cont)

16. Go to Thrust Reverser Deployed Landing procedure in this section.

- END -

No

8. Thrust levers As required

- END -

IN FLIGHT

1. Thrust lever (deployed engine) IDLE

2. Airspeed 190 KIAS maximum

Other indications of thrust reverser deployment are present (buffeting or excessive pitch, roll or yaw):

Yes

3. ENGINE RUN switch (deployed engine)OFF

4. Rudder Trim As required

5. Affected BLEED switchOFF

6. XBLEED switch Open

7. Affected ENG ANTI-ICE switchOFF

8. Monitor fuel balance. Transfer as required.

9. Land as soon as possible.

10. Go to Thrust Reverser Deployed Landing procedure in this section.

- END -

No

3. Thrust levers As required

————— END —————

POWERPLANT**Thrust Reverser Deployed Landing**

WARNING: Go-around may not be possible with a deployed thrust reverser.

NOTE: Landing on a wide runway of sufficient length with minimum turbulence and crosswind is recommended.

Descent Checks:

1. Pressurization LNDG ALT set
2. WING ANTI-ICE switch As required
3. L and R ENG ANTI-ICE switches As required

Transition Level (or FL 180) Checks:

4. Altimeters Set
5. L and R LANDING light switches On
6. Passenger Brief/Cabin Check Complete
7. SMKG/BELTS switch SMKG/BELTS
8. Fuel quantities and balance Check

Approach Checks:

9. APU and Bleeds Set
10. Final approach speed V_{REF}
11. Normal actual landing distance Multiply by:
 - 1.15 without thrust reversers
 - 1.10 with thrust reversers
12. Approach setup and crew briefing Complete
13. L and R HYDRAULIC PUMP switches AUTO

Before Landing Checks:

14. LANDING GEAR switch DN
15. N LDG/TAXI light switch On
16. FLAPS 30

NOTE: After landing, use of the operative thrust reverser is allowable.

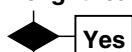
————— **END** —————

POWERPLANT

Dual Engine Flameout

1. Crew oxygen masks (if above 14,000 ft).....Don
2. Pilot and Copilot O2 MASK/NORM switches O2 MASK
3. Airspeed Establish 185 KIAS

Relight feasible:



4. Maintain 185 KIAS to ensure continued N2 rotation.

CAUTION: Failure to observe the minimum airspeed of 185 KIAS may result in engine core lock and the inability to restart engines in a timely manner.

5. Thrust levers IDLE
6. ENGINE RUN switches OFF
7. Pilot and Copilot INPH switches INPH

No

4. Establish best glide speed.

AIRPLANE WEIGHT	BEST GLIDE SPEED
28,000 lb (12,701 kg)	160 KIAS
33,000 lb (14,969 kg)	174 KIAS
40,000 lb (18,144 kg)	185 KIAS

NOTE: Interpolate for weights between the weights provided.

5. Thrust levers IDLE
6. ENGINE RUN switches OFF
7. Pilot and Copilot INPH switches INPH
8. Refer to Ditching or Forced Landing – Both Engines Inoperative procedure, this section.

– END –

Aircraft is above 20,000 ft:



8. Descend to below 30,000 ft.
9. APU switch START and release
10. L and R BLEED switches OFF
11. APU BLEED switch (above 20,000 ft) OFF

POWERPLANT

Dual Engine Flameout (Cont)

12. AirspeedIncrease to 250 KIAS or greater
13. FUEL panel XFER switchClosed
14. FUEL panel L and R PUMP switches AUTO
15. ENG ANTI-ICE switches..... Off
16. ENGINE RUN switch RUN

Light off occurs within 45 seconds:



Yes

17. Other engine Start
18. If only one engine is operating, refer to Engine Shutdown In Flight procedure in the NON-NORMAL PROCEDURES chapter.

- END -



No

17. ENGINE RUN switchesOFF
18. Attempt another windmill relight at a lower altitude or higher airspeed, or re-establish 185 KIAS to ensure continued N2 rotation and descend below 20,000 ft for starter assisted airstart.

CAUTION: Failure to observe the minimum airspeed of 185 KIAS may result in engine core lock and the inability to restart engines in a timely manner.



No

Aircraft is below 20,000 ft:

8. APU switch START and release
9. L and R BLEED switches OFF
10. APU BLEED switch..... ON
11. XBLEED switch OPEN
12. FUEL panel XFER switch Closed
13. FUEL panel L and R PUMP switches AUTO
14. ENG ANTI-ICE switches..... Off
15. ENGINE RUN switchRUN
16. STARTER switchSTART

POWERPLANT

Dual Engine Flameout (Cont)

Light off occurs within 45 seconds:



- 17. Other engine Start
- 18. If only one engine is operating, refer to Engine Shutdown In Flight procedure in the NON-NORMAL PROCEDURES chapter.

- END -



- 17. ENGINE RUN switchesOFF
- 18. Attempt another starter assisted airstart at a lower altitude or higher airspeed, or establish best glide speed and refer to Ditching or Forced Landing – Both Engines Inoperative procedure, this section.

————— END —————

POWERPLANT

Engine Failure

DURING TAKEOFF

Below V_1 Speed:

- | | |
|---------------------------|------------------------|
| 1. Thrust levers | IDLE |
| 2. Brakes..... | Maximum or as required |
| 3. Thrust reversers | MAX REV or as required |

– END –

Above V_1 Speed:

- | | |
|-------------------------|--|
| 1. Rotate at V_R . | |
| 2. Pitch attitude | Adjust as required
to achieve V_2 . |

NOTE: Initially rotate toward the flight director pitch guidance command.
Adjust pitch as required to maintain V_2 .

- | | |
|-----------------------------|-------------------------------------|
| 3. LANDING GEAR switch..... | UP
after positive rate of climb. |
|-----------------------------|-------------------------------------|

4. Climb at V_2 until clear of obstacles, accelerate to $V_2 + 15$ (Flaps 10)
[$V_2 + 25$ (Flaps 20)].

NOTE: If engine failure occurs above V_2 , maintain airspeed at current value (not more than $V_2 + 10$ KIAS).

- | | |
|---|-------------------------|
| 5. Flaps | Retract to 0 |
| 6. Climb..... | At en route climb speed |
| 7. N LDG/TAXI light switch | OFF |
| 8. ANTI/ICE panel..... | As required |
| 9. Refer to Engine Shutdown In Flight procedure in the NON-NORMAL PROCEDURES chapter. | |

– END –

IN FLIGHT

- | | |
|---|----------------------|
| 1. Autopilot..... | Disconnect |
| 2. Thrust lever (operative engine)..... | Increase as required |
| 3. Rudder Trim..... | As required |



POWERPLANT**Engine Failure (Cont)**

4. Refer to the following procedures in the NON-NORMAL PROCEDURES chapter as applicable:
 - a. Engine Shutdown In Flight
 - b. Single Engine Landing
 - c. Single Engine Go-Around.

————— **END** —————

Engine Failure in Climb During ALTS CAP

1. Autopilot/FD Disconnect
2. Pitch attitude Adjust
to maintain the required single engine operating airspeed.

NOTE: Vertical FD commands may be used and autopilot re-engaged after FCC mode changes to ALTS at desired altitude.

3. Engine Shutdown In Flight..... Accomplish
4. Refer to Engine Shutdown In Flight procedure in the NON-NORMAL PROCEDURES chapter.

————— **END** —————

POWERPLANT

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