



CL-350

Bombardier
CHALLENGER 350

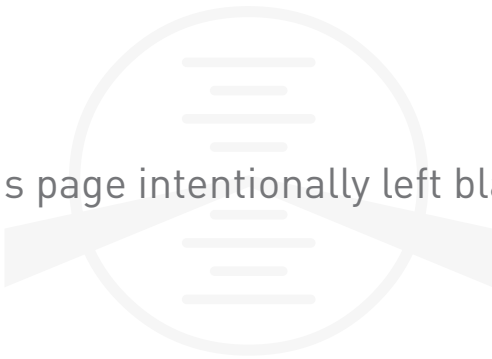


CL-350 SUPPLEMENTAL MANUAL

HIGH ALTITUDE
OPERATIONS

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HIGH ALTITUDE OPERATIONS

A. INTRODUCTION

The Challenger 350 is certified for flight up to FL 450. High altitude operations require special consideration of physiological factors, aircraft performance, and procedural requirements. Crews must be thoroughly familiar with emergency descent procedures and oxygen system operation. During your training you will experience both emergency descents as well as high altitude stalls.

B. PHYSIOLOGICAL CONSIDERATIONS

Time of Useful Consciousness (TUC):

At altitudes above FL 350, TUC decreases rapidly. The times shown are for average, healthy individuals at rest. Physical activity or underlying health conditions can significantly reduce these times.

TIME OF USEFUL CONSCIOUSNESS (TUC)

Altitude (measured barometrically)	TUC (rapid decompression)
FL180 (18,000 ft)	10 to 15 minutes
FL220 (22,000 ft)	5 minutes
FL250 (25,000 ft)	1.5 to 3.5 minutes
FL280 (28,000 ft)	1.25 to 1.5 minutes
FL300 (30,000 ft)	30 to 60 seconds
FL350 (35,000 ft)	15 to 30 seconds
FL400 (40,000 ft)	7 to 10 seconds
FL430 (43,000 ft)	5 to 6 seconds
FL500 (50,000 ft)	5 seconds

C. RVSM OPERATIONS

Reduced Vertical Separation Minimum (RVSM) airspace exists between FL 290 and FL 410. Operating in RVSM airspace requires:

- Aircraft RVSM approval
- Two independent altitude measurement systems
- Altitude alerting system
- Autopilot with altitude hold capability
- Transponder with altitude reporting

RVSM ALTITUDE KEEPING REQUIREMENTS:

- Altitude: ± 65 feet of assigned flight level
- Altitude alerting within ± 300 feet
- Autopilot use recommended
- See in Airwork and Manu chapter

NOTE: When safe, practical, and in accordance with the carrier's approved operating procedures, pilots should limit vertical speeds to 1,500 fpm or less when within 2,000 feet of assigned altitudes. This procedure will reduce the frequency of unnecessary RAs.

D. HIGH ALTITUDE CLIMB CONSIDERATIONS

During climbs in FLC mode at higher altitudes (high FL 300s and above), it is possible that air mass variations may contribute to slight pitch variations. These variations are more noticeable in the flight compartment than in the cabin.

- FLC is the recommended vertical mode for normal climbs
- If pitch variations are excessive, VS mode may be used with caution
- Check pressurization system at each 10,000 ft interval during climb
- Monitor pressure differential vs. cabin altitude

E. HIGH ALTITUDE STALL RECOVERY

If a stall occurs at high altitudes, it will be necessary to pitch the aircraft below the horizon to obtain sufficient airspeed to not encounter a secondary stall. Altitude loss will occur in order to increase airspeed. Reference the AOA indicator and low speed cue for recovery guidance.

WARNING: At high altitude, the margin between stall speed and maximum operating speed (coffin corner) is significantly reduced. Maintain awareness of both speed limits and avoid abrupt control inputs.

F. PRESSURIZATION MONITORING

- Monitor cabin altitude and differential pressure
- Be aware of maximum differential pressure limits
- Know the emergency descent procedure
- Verify crew oxygen availability
- Confirm passenger oxygen system functionality during preflight



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