

<b>canadair challenger®</b>	<b>IN - FLIGHT CHECKS</b> <b>Air-Driven Generator Checks</b>	Vol. 1	09-02-1
		REV 41, Apr 17/01	

## GENERAL

The following procedures are recommended to operationally check the air-driven generator (ADG) in flight using the manual deployment system.



1. The presence of foreign objects in the ADG bay could cause damage to the ADG blades during deployment. Before flight, the ADG bay must be inspected to ensure that foreign objects are not present.
2. On airplanes 5301 to 5407, when deployed, the ADG is maintained in position by an ejection spring and airloads. After landing, high deceleration could cause the ADG to swing forward with resulting damage to the ADG blades and adjacent fuselage panels. When landing with the ADG deployed, plan to use maximum landing roll-out available to minimize deceleration.

## NOTE

Once deployed, the ADG cannot be stowed during flight. Therefore, this check should be performed at the end of a test flight. Normal electrical power must be restored before final landing approach is commenced.

If icing conditions are encountered while the ADG is the only source of electrical power, the WING anti-ice system must be operated only in the standby (STBY) mode.

## MANUAL DEPLOYMENT OPERATIONAL CHECK

### Before Flight:

1. ADG bay ..... Check
  - Clear of foreign objects.
2. Aft electrical bay ..... Check
  - Verify that ADG AUTO and MAN circuit breakers (5B10 and 5B11) are closed.

	<b>CL-604 Operating Manual</b> <b>PSP 604-6</b>	
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<b>canadair challenger®</b>	<b>IN - FLIGHT CHECKS</b> <b>Air-Driven Generator Checks</b>	Vol. 1	09-02-2
		REV 54, Jul 16/04	

**MANUAL DEPLOYMENT OPERATIONAL CHECK (CONT'D)****In-Flight Procedures:**

1. BATTERY MASTER ..... Check ON
2. APU ..... Start
3. APU GEN ..... OFF
4. VHF Comm, VHF Nav, ADF and transponder ..... Set to #1

**NOTE**

The No. 2 VHF Comm, VHF Nav, ADF and transponder become inoperative when the main generators (GEN 1 and GEN 2) are turned off in the steps to follow.

5. HYDRAULIC, 1 and 2 switches ..... ON
6. Airspeed ..... Maintain 180 KIAS
7. Flaps ..... Set to 20°
8. Altitude ..... Maintain 10,000 feet or below
9. ADG DEPLOY CONT - AUTO circuit breaker (2N6) ..... Open
10. Landing gear lever ..... Select to DN
11. HYDRAULIC, 3A and 3B switches ..... OFF
  - Bleed off No. 3 system pressure and check that HYD 3 LO PRESS caution message comes on.
12. AC ELECTRICAL synoptic page ..... Select
13. ADG manual deploy handle ..... Pull
  - Pull the handle for one (1) second to ensure proper opening of the uplock.
14. ADG manual deploy handle ..... Stow
15. AC ELECTRICAL page ..... Check
  - Verify that within six (6) seconds, the following indications occur:
    - ADG voltage ..... 115 ± 5 VAC
    - Frequency ..... 400 ± 40 Hz  
(± 20 Hz on airplanes 5301 to 5407)
    - AC ESS BUS ..... Powered
    - AC essential bus temporarily not powered (AC ESS BUS caution message on EICAS comes on briefly, then out).

**NOTE**

On airplanes 5408 to 5572 not incorporating Service Bulletin 604-24-013 operating on emergency power only, the AC ESS BUS caution message may remain on or be intermittent.

- ADG output ..... Green
16. DC ELECTRICAL synoptic page ..... Check
    - Verify the following indications:
      - ESS TRU 1, DC ESS BUS  
and BATT BUS ..... Powered

	<b>CL-604 Operating Manual</b> <b>PSP 604-6</b>	
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<b>canadair challenger</b>	<b>IN - FLIGHT CHECKS</b> <b>Air-Driven Generator Checks</b>	Vol. 1	09-02-3
		REV 51, Sep 30/03	

**MANUAL DEPLOYMENT OPERATIONAL CHECK (CONT'D)****In-Flight Procedures (Cont'd):**

17. HYDRAULIC synoptic page ..... Check
- That system pressure shows 3,000 ± 200 psi.

**WARNING**

If the ADG fails to deliver the required electrical power after the GEN 1 and GEN 2 switches are set to OFF, the GEN 1 and GEN 2 switches must be reset immediately to ON and normal supply to the essential busses restored by pressing the PWR TXFR OVERRIDE switch, after confirming that the ADG manual deploy handle is stowed.

18. GEN 1 ..... OFF
- Check that GEN 1 OFF caution message comes on.
19. GEN 2 ..... OFF
- Check that GEN 2 OFF caution message comes on.
20. Primary display ..... Check
- That EMER PWR ONLY warning message comes on,
  - MACH TRIM caution message comes on, and
  - All other indications are normal, except VIB=0.0 .
21. Pilot's, Copilot's and  
third crewmember's intercoms ..... Check
22. STAB TRIM, CH 2 switch/light ..... Check engaged
- STAB TRIM CH 1 INOP status message on.
23. YAW DAMPER, YD 1 switch/light ..... Check engaged
- YD 1 INOP status message out.
24. Pitch trim ..... Operate
- To check that stabilizer trim operates normally.

	<b>IN - FLIGHT CHECKS</b> <b>Air-Driven Generator Checks</b>	Vol. 1	09-02-4
		REV 45, Mar 13/02	

**MANUAL DEPLOYMENT OPERATIONAL CHECK (CONT'D)**

**In-Flight Procedures (Cont'd):**

25. AC and DC essential busses ..... Check

- Verify that power is available on each bus. It is sufficient to confirm the normal operation of one of the services powered by the bus. The following is a list of the essential busses and the services appropriate for this check:

**A. DC Essential Bus:**

- VHF Nav 1 operational.
- ADF 1 operational.
- Transponder 1 operational.
- Pilot's MFD and PFD with complete displays.
- Wing anti-ice, STBY (Check for ITT variation).

**B. AC Essential Bus:**

- ICE DET 1 FAIL status message out.
- ICE DET TEST: Select to DET and verify that L AOA, L & STBY PITOT, L STATIC and L WINDOW HEAT caution messages out; then LH WHSLD switch ..... RESET

**NOTE**

L AOA HEAT, PITOT BASE HEAT, L PITOT HEAT and STBY PITOT HEAT caution messages may come on during ADG deployment. If this occurs, reset circuit breaker 4A11.

**C. Battery Bus:**

- RAM AIR SOV operational.
- Copilot's clock operational.
- Standby attitude indicator and altimeter/indicated airspeed indicators operational.
- INTEG instruments panel lights operational.

26. Hydraulic system No. 3 pressure ..... Stabilized at 3,000 ± 200 psi

27. Landing gear lever ..... Cycle; UP then DN

- Check that hydraulic No. 3 system pressure does not go below 2,200 psi.

28. Airspeed ..... Reduce

- Slow down to 130 KIAS or slowest practical safe speed and confirm the ADG output:
  - ADG voltage ..... 115 ± 5 VAC
  - Frequency ..... 340 Hz minimum

29. Airspeed ..... As required

- Resume normal airspeed for phase of flight, in accordance with the operating limitations as established in Chapter 2.

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		REV 37, Oct 12/99	

**MANUAL DEPLOYMENT OPERATIONAL CHECK (CONT'D)****In-Flight Procedures (Cont'd):**

30. GEN 1 and GEN 2 ..... ON
- Check that GEN 1 OFF and GEN 2 OFF caution messages go out;
  - Check that EMER PWR ONLY warning message goes out.
31. ADG, PWR TXFR OVERRIDE switch ..... Press
- To restore normal power supply.
  - Check that all indications return to normal.
32. ADG DEPLOY CONT - AUTO  
circuit breaker (2N6) ..... Close
33. HYDRAULIC, 3A and 3B switches ..... As required
- The hydraulic 3A switch is normally set to ON and 3B switch is normally set to AUTO.



On airplanes 5301 to 5407:  
On landing, with the ADG deployed, use gentle deceleration to preclude the ADG from swinging forward and damaging the fuselage.