



GEOPHYSICAL SURVEY AIRCRAFT

# CESSNA 208B GRAND CARAVAN

<b>Registration</b>	C-GSGW	C-GSGY	C-GSGZ	C-GSGL	C-GSGV	C-GSGU	C-GSGJ	C-GSGA
<b>Serial #</b>	208B0646	208B0600	208B0493	208B0783	208B0524	208B0747	208B1187	208B1228

The Cessna 208B Grand Caravan is an all metal, high wing, single-engine aircraft powered by a Pratt & Whitney Canada PT6A-114A engine. This engine drives a constant speed, fully feathering, reversible propeller. The aircraft has fixed gear, extendable flaps and manually adjustable trim tabs on the primary controls for the roll and pitch axis and full rudder trim for the yaw axes. The aircraft is equipped with full de-icing equipment and sufficient avionics for instrument flying including a flight control system and weather radar. Supplementary fuel can be added for transoceanic flight. The Caravan is certified for IFR flights in known icing conditions.



## ■ GEOPHYSICAL SURVEYING

SGL aircraft have a rigid aluminum and composite material 3 m tail stinger designed to accommodate the magnetometer sensor. The stinger can be easily removed and the aircraft returned to its original configuration. There is a camera hole in the belly of the aircraft and provisions for other survey and navigation systems.

The Cessna Grand Caravan uses the extremely reliable Pratt & Whitney Canada PT6 turbine engine. These engines have recorded tens of millions of hours of flight time and with virtually no in-flight engine stoppages due to mechanical failure. Over 2,000 Caravans are in use around the world. Because the Caravan has one engine, fixed landing gear, and no single engine control speed limitations, it is considered an easy and very safe aircraft to fly. The PT6 turbine engine provides ample power for climbing over terrain, working at altitudes up to 7,000 m and can withstand frequent rapid power changes. The low stall speeds and abundant available power, mean that the Caravan is a safe and effective aircraft for surveys which require low airspeeds, draping flying over rough topography, or flights at high altitudes.

## CESSNA 208B GRAND CARAVAN SPECIFICATIONS

### Crew Capacity:

- 2 pilots, 1 operator (optional)

### Fuselage:

- semi-monocoque

### Wings:

- strut braced, high wing
- outboard ailerons with spoiler and trim tab

### Tail:

- conventional stabilizers
- elevator and rudder with trim tabs

### Power Plant:

- Pratt & Whitney Canada PT6A-114A, 675 shp, free-turbine gas engine, overhaul 4,600 hours
- three-blade, fully-feathering, constant-speed, reversible propeller, overhaul 4,000 hours or 10 years

### Systems:

- dual flight controls with IFR instruments and avionics
- 2 axis autopilot
- weather radar
- full airframe and propeller de-icing

### Dimensions:

Wing span	52 ft 1 in	16.11 m
Exterior length	41 ft 7 in	12.68 m
Exterior height	15 ft 5.5 in	4.72 m
Interior usable length	15 ft 10 in	4.83 m
Interior usable width	5 ft 4 in	1.63 m
Interior height	4 ft 6 in	1.37 m
Usable fuel capacity (with survey tank)	519 US gal	2,011 l

### Weights:

Empty	4,237 lb	1,926 kg
Maximum take-off	9,062 lb	4,110 kg

### Performance (2000 ft ASL, standard day, maximum take-off weight, 1900 rpm, 1375 ft-lb tq):

Range, maximum range power (plus reserve)	1,450 nm	2,685 km
Cruise speed at maximum range power	155 kt	287 km/h
Fuel flow at maximum range power	50 US gal/h	189 l/h
Stall airspeed, landing configuration	61 kt	113 km/h
Service ceiling	25,000 ft	7,620 m
Minimum required runway length	2,500 ft	765 m
Rate of climb	975 ft/min	297 m/min
Maximum sustained climb gradient	650 ft/nm	107 m/km

**Type of Aviation Fuel:** Jet A, A-1, B, JP-1, 4, 5, 8

**Maximum Endurance:** 8 hours plus 1 hour reserve at maximum range power

## GEOPHYSICAL CAPABILITIES

**AIRGrav**, SGL airborne gravimeter

**Magnetic total field**

**Tri-axial magnetic gradient**

**Gamma-ray spectrometer**, up to 63 litres (3,840 in<sup>3</sup>) of detector crystals

**SGMethane**, methane gas sensing

### Additional Features:

- Tail stinger, 3 m long, 21 cm in diameter, capable of housing a 5.5 kg sensor
- HF radio
- Video camera mount with 14 cm diameter glass covered opening in the belly of the aircraft
- Two instrument racks, standard 48 cm (19 in) width
- Radar altimeter, 0-3,000 m
- Electrical power capacity, 28 VDC at 200 amp
- Static inverters, 115 VAC - 400 Hz, 110 VAC - 60 Hz
- GPS receiver and antenna plus data link for real-time corrections
- Cabin fuel tank certified for a normal production flying