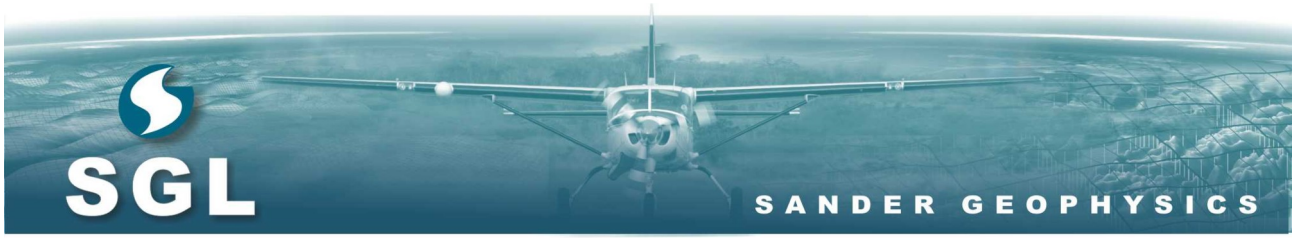

GEOPHYSICAL SURVEY AIRCRAFT

de Havilland DHC-6 Twin Otter

Registration	C-GSGF	C-GSGP
Serial #	642	289

The de Havilland DHC-6 Twin Otter is an all metal, high wing, twin-engine, short takeoff and landing (STOL) aircraft. The Twin Otter is powered by two Pratt & Whitney Canada PT6A-27 engines. These engines drive a constant speed, fully feathering, reversible propeller. The PT6 turbine engines provide ample power for climbing over steep terrain, working at altitudes up to 7,000 m and can withstand frequent rapid power changes. The aircraft is highly maneuverable, rugged in design and can be flown at speeds from 80 to 160 knots. The low stall speeds and abundant available power make the Twin Otter a safe and effective aircraft for surveys requiring drape flying over rough topography, low air speeds or flights at high altitude. The aircraft has fixed gear, extendable flaps and manually adjustable trim tabs on the primary controls for the roll and pitch axes and full rudder trim for the yaw axis. The aircraft is equipped with full de-icing equipment and sufficient avionics for instrument flying including a flight control system. Supplementary fuel can be added for transoceanic flight. The Twin Otter is certified for IFR flights in known icing conditions.

GEOPHYSICAL SURVEYING

The SGL Twin Otter is fully equipped for airborne magnetic, gravity, radiometric and frequency-domain EM surveys. EM fields are measured with the SGL frequency-domain EM system (**SGFEM**). The four-frequency EM transmitter is located in the right wingtip EM pod, and the receiver is located in the left wingtip EM pod. The magnetic field is measured by one sensor mounted in a stinger that is rigidly attached to the tail of the aircraft, and a second sensor can be mounted in the left wingtip EM pod. Gravity surveys are performed using SGL's state-of-the-art **AIRGrav** system. The Twin Otter can carry up to 63 litres of detector crystals for gamma-ray spectrometer surveys.

DE HAVILLAND DHC-6 TWIN OTTER SPECIFICATIONS

Crew Capacity:

- 2 pilots, 1 operator (optional)

Fuselage:

- semi-monocoque

Wings:

- strut braced, high wing
- outboard ailerons and trim tab, full span flaps

Tail:

- conventional stabilizers
- elevator and rudder with trim tabs

Power Plant:

- Pratt & Whitney Canada PT6A-27, 680 shp, free-turbine gas engine, overhaul 3,600 hours
- three-blade, fully-feathering, constant-speed, reversible propeller, overhaul 3,000 hours or 5 years

Systems:

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

Dimensions:

Wing span	65 ft	19.8 m
Exterior length	51 ft 9 in	15.8 m
Exterior height	19 ft 6 in	5.94 m
Interior usable length	18 ft 5 in	5.61 m
Interior usable width	4 ft 4 in	1.32 m
Interior height	4 ft 11 in	1.5 m
Usable fuel capacity	385 US gal	1,455 l

Weights:

Empty	8,100 lb	3,674 kg
Maximum take-off	12,500 lb	5,670 kg

Performance (2,000 ft ASL, standard day, maximum take-off weight, 1,900 rpm, 1,375 ft-lb tq):

Range, maximum range power (plus reserve)	920 nm	1,704 km
Cruise speed at maximum range power	170 kt	315 km/h
Fuel flow at maximum range power	73 US gal/h	275 l/h
Stall airspeed, landing configuration	58 kt	107 km/h
Service ceiling	25,000 ft	7,620 m
Minimum required runway length	2,500 ft	762 m
Rate of climb	1,600 ft/min	488 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

SGFEM, frequency-domain EM

AIRGrav, SGL airborne gravimeter

Magnetic total field

Horizontal magnetic gradient

Gamma-ray spectrometer, up to 63 litres (3,840 in^3) of detector crystals

SGMethane, methane gas sensing

Additional Features:

- Tail stinger 6.8 m long and 22 cm in diameter, capable of housing a 1 kg sensor
- HF radio
- Video camera mount with 23 cm diameter glass covered opening in the belly of the aircraft
- Two instrument racks, standard 48 cm (19 in) width
- Radar altimeter, 0-750 m
- Electrical power capacity, 28 VDC at 200 amp
- Static inverters, 115 VAC - 400 Hz, 110 VAC - 60 Hz
- GPS receiver and antenna