GEOPHYSICAL SURVEY AIRCRAFT

DIAMOND DA42 TWIN STAR

Registration	C-FSGM	C-FSGN	C-FSDK
Serial #	42-105	42-AC061	42-AC071

The DA42 Twin Star combines the benefits of outstanding safety and ideal flight characteristics. Ultra-light, high-strength composite materials are used throughout its construction.

The DA42 Twin Star uses Thielert Centurion 2.0 litre turbodiesel engines that can run on either diesel or Jet A1 fuel. With the standard tank (52 US gallons), the aircraft's sensationally efficient fuel consumption gives a maximum range of 900 nm, depending on power setting. With long range fuel tanks, range is increased to over 1300 nm.

Another groundbreaking innovation is the fully integrated DA42 Twin Star cockpit with its ultra-modern Garmin G1000 avionics system, which has at its heart, two large-format 38 cm colour TFT screens. The system is a modular design with open architecture.

GEOPHYSICAL SURVEYING

The airframe has been extensively modified to reduce the magnetic signature of the aircraft by replacing ferromagnetic parts with those made from advanced non-magnetic alloys. Several wiring changes have also been made to the electrical system to reduce the magnetic field variations around the aircraft. Two magnetometer sensors mounted in wingtip stingers provide measured horizontal gradient magnetic data in addition to individual total magnetic field measurements.

The fully equipped DA42 can operate at a wide range of speeds, varying from a minimum survey speed of 90 knots to a maximum of 150 knots (IAS). No other aircraft can match the flexibility of the turbo diesel-powered DA42.

DIAMOND AIRCRAFT DA42 TWIN STAR SPECIFICATIONS

Crew Capacity:

- 2 pilots or 1 pilot and 1 operator

Fuselage:

- semi-monocoque, all composite

Wings:

- cantilever, low wing
- outboard ailerons with trim tabs
- inboard split flap and outboard plain flap

Tail:

- T-tail configuration
- elevators and rudder with trim tabs

Power Plant:

- 2 Thielert Centurion 2.0 litre (135 hp) turbodiesel engines, overahul 1,000 hours
- 2 MT 3 blade constant speed, full feathering propellers, overhaul 1,500 hours

Dimensions:

Length	8.56 m	28 ft 1 in
Height	2.49 m	8 ft 2 in
Wing span	13.42 m	44 ft
Wing area	16.29 m^2	175.3 sq ft

Weights:

Empty	1,250 kg	2,756 lb
Maximum take-off weight (MTOW)	1,785 kg	3,935 lb
Payload	535 kg	1,179 lb

Airspeed, Fuel Capacity, Consumption and Range:

Maximum airspeed (IAS)	359 km/h	194 kt
Cruise speed at 80% and 10,000 ft (TAS)	319 km/h	172 kt
Fuel capacity standard	197 l	52 US gal
Fuel capacity long range tank	280 l	74 US gal
Fuel consumption at 80% and 10,000 ft	47.3 l/h	12.5 US gal/h
Range at 60% and 10,000 ft, standard tank	1,652 km	892 nm
Range at 60% and 10,000 ft, long range tank	2,091 km	1,129 nm

GEOPHYSICAL CAPABILITIES

AIRGrav, SGL airborne gravimeter
Magnetic total field
Horizontal magnetic gradient
SGMethane, methane gas sensing

Additional Features:

- Wingtip stingers
- VHF radio and satellite phone
- Optional downward looking video camera and laser altimeter
- Instrument rack, standard 48 cm (19 in) width
- Electrical power capacity, 28 VDC at 30 amp
- GPS receiver and antenna plus data link for real-time corrections
- Iridium tracking