
GEOPHYSICAL SURVEY AIRCRAFT

# CESSNA 404 TITAN

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| **Registration** | C-GBWE |
| **Serial #** | 404-0624 |

The model 404 Titan Courier is an all metal, low wing, twin-engine aircraft powered by two turbocharged engines that drive constant speed, fully feathering propellers. The aircraft has fully retractable tricycle landing gear, extendable flaps and manually adjustable trim tabs on the primary controls for all three flight axes. The aircraft is equipped with full de-icing equipment and sufficient avionics for instrument flying. Supplementary fuel can be added for transoceanic flight.

## GEOPHYSICAL SURVEYING

The aircraft has a rigid aluminum and composite material 2.5 m tail stinger designed to accommodate a magnetometer sensor and wiring. This tail 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 numerous other survey and navigation systems.

The airframe has been extensively modified to reduce the magnetic signature of the aircraft by replacing ferromagnetic parts with those made from special non-magnetic stainless steel or aluminum. Several wiring changes have also been made to the electrical system to reduce the magnetic field variations around the aircraft.

## CESSNA 404 TITAN SPECIFICATIONS

**Crew Capacity:**

- 2 pilots, 1 operator (optional)

**Fuselage:**

- semi-monocoque

**Wings:**

- cantilever, low wing
- outboard ailerons with trim tab
- single-slotted inboard flaps

**Tail:**

- conventional stabilizers
- elevator and rudder with trim tabs

**Power Plant::**

- 2 Teledyne Continental GTSIO-520-M, 375 hp, six cylinder, horizontally-opposed, air-cooled, fuel-injected, turbocharged, reciprocating engines, overhaul 1,600 hours
- 2 three blade, fully-feathering, constant-speed propellers, overhaul 2,000 or 10 years

**Systems:**

- dual flight controls with IFR instruments and avionics
- integrated flight control system with 3 axis autopilot
- full airframe and propeller de-icing
- weather radar

**Dimensions:**

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|---|---|---|
| Wing span | 52 ft 1in | 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 | 2011 l |

**Weights:**

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| Empty | 5,410 lb | 2,459 kg |
| Maximum take-off | 8,400 lb | 3,818 kg |

**Performance** (sea level, standard day, maximum take-off weight, no auxiliary or ferry fuel tanks):

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| Range at 65% power (plus reserve) | 1,380 nm | 2,550 km |
| Cruise speed at 65% power | 167 kt | 309 km/h |
| Fuel flow at 65% power | 38 US gal/h | 144 l/h |
| Stall airspeed | 70 kt | 130 km/h |
| Service ceiling | 25,000 ft | 7,625 m |
| Minimum required runway length | 3,500 ft | 1,067 m |
| Two engine rate of climb | 1,650 ft/min | 503 m/min |
| Maximum sustained climb gradient | 460 ft/nm | 76 m/km |
| Single engine rate of climb | 230 ft/min | 70 m/min |

**Type of Aviation Fuel:** 100LL Avgas

**Maximum Endurance:** 8 hours 25 minutes plus 45 minutes reserve at 65% power

## GEOPHYSICAL CAPABILITIES

**AIRGrav**, SGL airborne gravimeter

**Magnetic total field**

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

**SGMethane**, methane gas sensing

**Additional Features:**

- Tail stinger, 2.5 m long, 21 cm in diameter, capable of housing a 5.5 kg sensor
- HF radio
- Video camera mount with 8 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 inverter, 115 VAC - 400 Hz
- GPS receiver and antenna plus data link for real-time corrections