

GRAND CARAVAN



Specification & Description

July 2010
(G1000 equipped units 208B-2000 and on)



SPECIFICATION AND DESCRIPTION

EFFECTIVE WITH SERIAL NUMBER 208B-2160 AND ON

JULY 2010

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July 2010

INTRODUCTION

This "Specification and Description" is published for the purpose of providing general information for the evaluation of the design, performance and equipment of the Cessna Grand Caravan aircraft. Should more detailed data be required, it can be obtained by contacting:

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This document describes only the Cessna Model 208B Grand Caravan aircraft, Unit Serial Number 2160 and on, and its powerplant and equipment.

Also included is the Cessna warranty applicable to the Cessna Model 208B Grand Caravan aircraft and the Grand Caravan Crew Training Agreement. In the event of any conflict or discrepancy between this document and the basic purchase agreement to which it may be appended, terms specified in the basic purchase agreement govern.

Due to the time span between the date of this Specification and Description and the scheduled delivery date of the aircraft, Cessna reserves the right to revise the "Specification and Description" whenever occasioned.

WARNING: This product contains Halon 1211, Halon 1301, and also R-134A. Furthermore, the product was manufactured with CFC-12 and 1-1-1 Trichloroethane, substances which harm public health and environment by destroying ozone in the upper atmosphere.



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July 2010

MANUFACTURER _____ CESSNA AIRCRAFT COMPANY

MODEL _____ 208B

1. GENERAL DESCRIPTION _____

The Cessna Grand Caravan is an unpressurized single-engine high wing turboprop aircraft with fixed landing gear. The aircraft can accommodate up to 14 persons including a minimum crew of one. (Operations with more than nine passengers must be approved by the registering country's aviation authority.) Suitable allowance for luggage and optional equipment is also provided.

114A turboprop engine mounted in the nose of the aircraft fuselage.

Certification basis is to U.S. FAA FAR Part 23 Requirements—day, night, VFR, IFR and flight-into-icing conditions when equipped with the appropriate options. Export certification requirements may require additional equipment and charges.

The powerplant is a Pratt and Whitney of Canada PT6A-

POWERPLANTPratt & Whitney PT6A-114A 675 shp @ 1900 rpm

PROPELLERMcCauley, Anti-Ice, Constant Speed, Full Feathering, Reversible Pitch, 3 Blades, 106 in. Diameter

LOADING

Wing.....31.3 lb/ft²

Power13.0 lb/shp

APPROXIMATE DIMENSIONS

Overall Height14 ft 10 in

Overall Length41 ft 7 in

Wing

Span (overall)52 ft 1 in

Area279.40 ft²

Sweepback (at 50% chord)0 degrees

Dihedral+3 degrees

Taper Ratio0.586

Aspect Ratio9.555

Mean Aerodynamic Chord66.474 in

Horizontal Tail

Span (overall)20 ft 6 in

Area70.04 ft²

Sweepback0° at elevator hinge line

Aspect Ratio6.0

Mean Aerodynamic Chord41.984 in

Vertical Tail

Height (overall)8 ft 2 in

Area (including dorsal fin)39.92 ft²

Sweepback+9.437° at rudder hinge line

Cabin

Height (floorboard to headliner)4 ft 3 in

Length—Firewall to Aft Bulkhead (nominal)21 ft 4 in

Width (max.)5 ft 2 in

Landing Gear

Tread11.66 ft

Wheelbase13.29 ft

Tire Size—Main8.50 x 10, 8 ply

Tire Size—Nose22 x 8.00 x 8, 6 ply



1. GENERAL DESCRIPTION (Continued)

DESIGN WEIGHT AND CAPACITIES

| | |
|---|-----------------|
| Maximum Ramp Weight..... | 8785 lb |
| Maximum Take Off Weight..... | 8750 lb |
| Maximum Weight (Cargo Pod Installed—Flight into Icing)..... | 8550 lb |
| Maximum Landing Weight..... | 8500 lb |
| *Standard Empty Weight | 4514 Est. lb |
| Maximum Useful Load..... | 4271 Est. lb |
| Fuel Capacity (usable) @ 6.75 lb/gal..... | 332 gal/2224 lb |
| Oil..... | 14 qt |

*Approximate standard empty weight includes unusable fuel, full operating fluids and full engine oil.

2. PERFORMANCE

All performance data is based on a standard aircraft configuration in International Standard Atmosphere conditions. Takeoff and landing field lengths are based on level, hard

surface, dry runways with zero wind. Actual performance will vary with individual airplanes and other factors such as environmental conditions and aircraft configuration.

| | | |
|---------------------------|-------------------------------------|-----------------------------|
| Speed | Without cargo pod (8,750 lbs.)..... | With cargo pod (8,750 lbs.) |
| Cruise at 10,000 ft. | 184 kts..... | 175 kts |
| Cruise at 20,000 ft. | 174 kts..... | 164 kts |

RANGE (with 2224 pounds usable fuel and fuel allowance for engine start, taxi, takeoff, climb, descent and 45 minutes reserve)

| | | |
|--|---------------|---------|
| Maximum Cruise Power at 10,000 ft..... | 907 nm | 862 nm |
| Endurance | 5.1 hr | 5.1 hr |
| Maximum Cruise Power at 18,000 ft..... | 1109 nm | 1044 nm |
| Endurance | 6.6 hr | 6.6 hr |
| Maximum Range Power at 10,000 ft | 1026 nm | 963 nm |
| Endurance | 6.6 hr | 6.4 hr |
| Maximum Range Power at 18,000 ft..... | 1163 nm | 1076 nm |
| Endurance | 7.5 hr | 7.2 hr |

Rate of Climb at Sea Level.....975 fpm

Service Ceiling.....23,700 ft

Maximum Certified Altitude

Maximum Altitude in Icing Conditions.....20,000 ft

Takeoff Performance (sea level, 8750 lb)

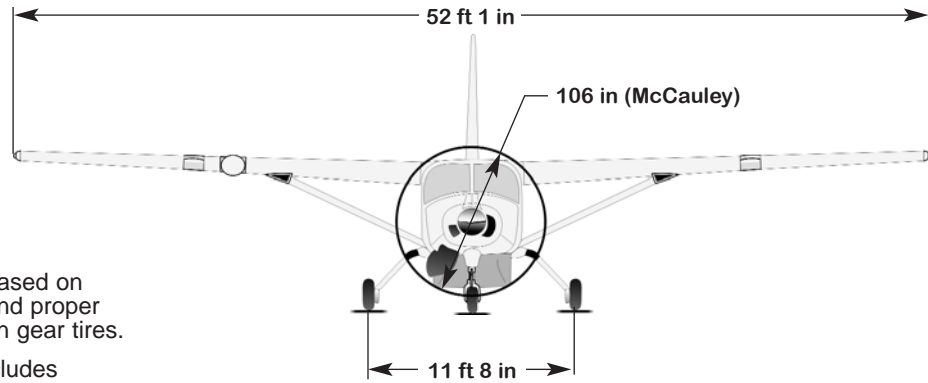
| | | |
|--|---------------|---------|
| Ground Roll..... | 1365 ft | 1405 ft |
| Total Distance Over 50 ft Obstacle | 2420 ft | 2500 ft |

Landing Performance (sea level, 8500 lb, no reverse)

| | | |
|---|---------------|---------|
| Ground Roll..... | 950 ft | 915 ft |
| Total Distance Over 50 ft. Obstacle | 1795 ft | 1740 ft |

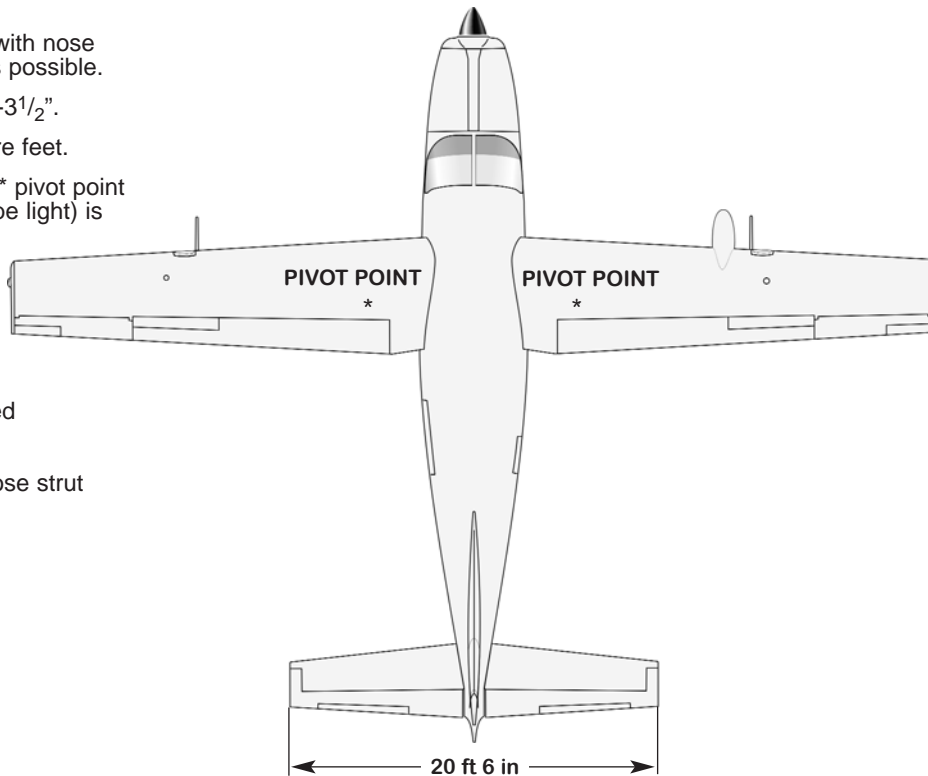
STALL Speed, CAS

| | | |
|------------------------------|-------------|--------|
| Flaps Up, Idle Power..... | 78 kts..... | 78 kts |
| Flaps Down, Idle Power | 61 kts..... | 61 kts |



NOTES:

1. Dimensions shown are based on standard empty weight and proper inflation of nose and main gear tires.
2. Wing span dimension includes strobe lights.
3. Maximum height shown with nose gear depressed as far as possible.
4. Wheel base length is 13'-3¹/₂".
5. Wing area is 279.4 square feet.
6. Minimum turning radius (* pivot point to outboard wing tip strobe light) is 33'-8".



Nose tire inflated and nose gear barrel extended
3⁵/₈" : 14 3/4".

Nose tire deflated and nose strut fully compressed: 5 7/8".

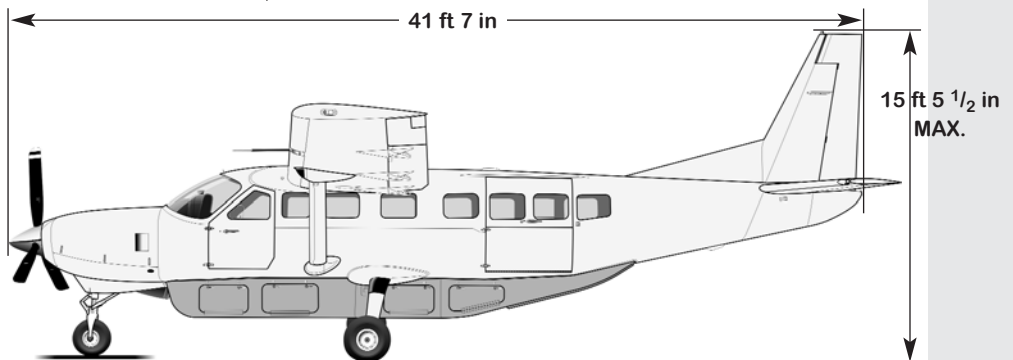
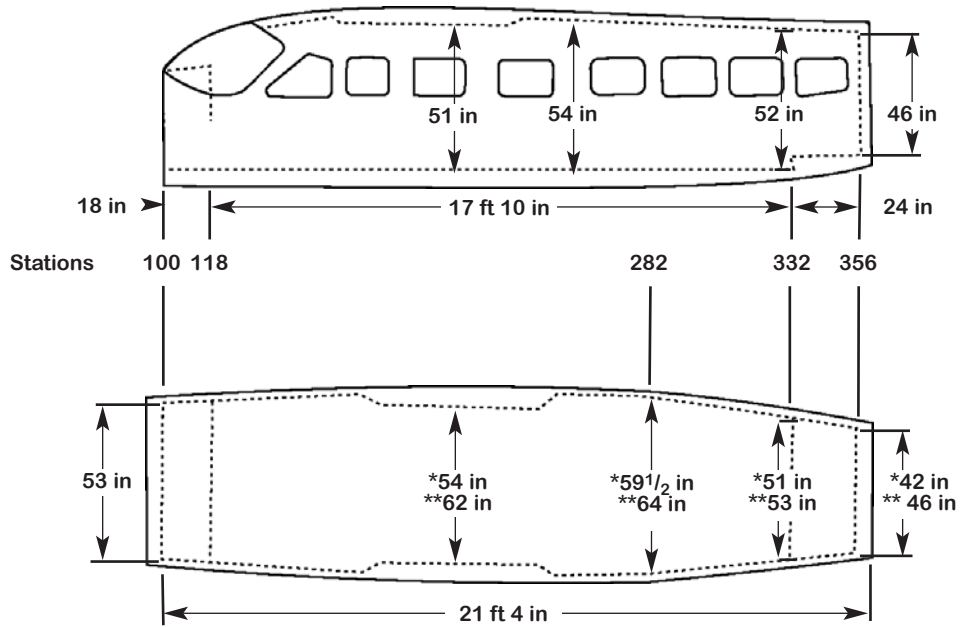


FIGURE I — GRAND CARAVAN EXTERIOR DIMENSIONS
(Shown with Optional Cargo Pod Installed)



GRAND CARAVAN CABIN DIMENSIONS

*Dimensions at cabin floor **Dimensions at lower window line

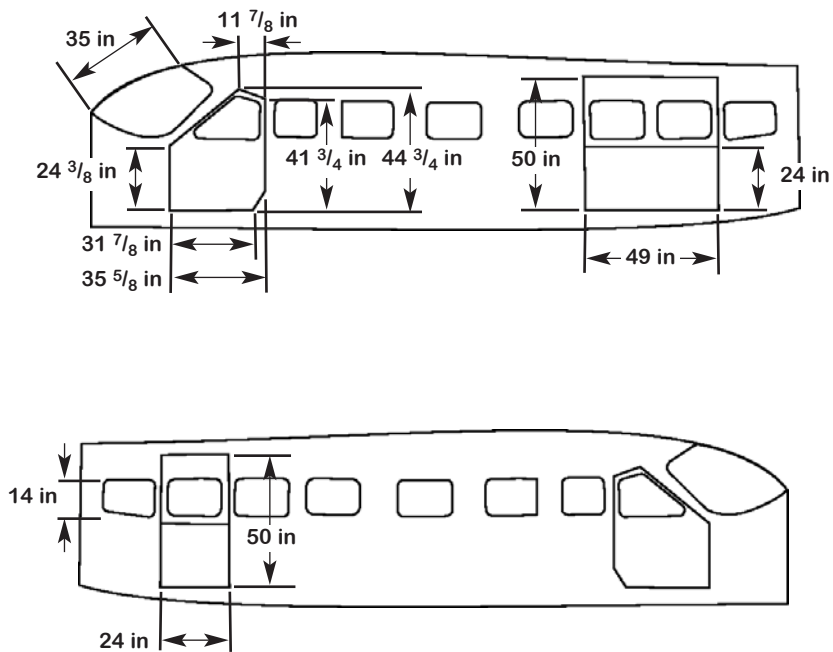


FIGURE II — GRAND CARAVAN DOORS AND WINDOWS DIMENSIONS



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3. STRUCTURAL DESIGN CRITERIA

The Grand Caravan certification basis is to FAR Part 23 normal category aircraft.

Design limit load factors are +3.8G, -1.52G at a maximum takeoff weight of 8,750 pounds. Ultimate loads are defined as 1.5 times the limit loads.

DESIGN SPEEDS

(All speeds are at maximum gross weight.)

| | |
|--|----------|
| Cruising Maximum Operating Limit (V_{MO})..... | 175 KCAS |
| Flap Extension Speeds (V_{FE}) | |
| 0° to 10° | 175 KCAS |
| 10° to 20° | 150 KCAS |
| 20° to 30° | 125 KCAS |
| Maneuvering Speed (V_A) | |
| 8750 pounds | 148 KCAS |
| 7500 pounds | 137 KCAS |
| 6250 pounds | 125 KCAS |
| 5000 pounds..... | 112 KCAS |

4. FUSELAGE GROUP

Construction of the fuselage is of conventional formed sheet metal bulkhead, stringer and skin design. Major elements of the structure are the front carry-through spar and bulkhead, the rear carry-through spar and landing gear bulkhead, and the forward doorpost. The front carry-through spar and bulkhead is an integral fail-safe structure with forgings at the top for attaching the front wing spar and forgings at the bottom for attaching the wing strut. The rear carry-through and landing gear bulkhead is an integral fail-safe structure with forgings at the top for attaching the rear wing spar and forgings at the bottom for attaching the main landing gear trunnions. The forward doorpost provides the load path for transferring the loads from the engine mount directly to the primary structure.

area is 427 cubic feet. Total volume aft of the pilot and front passenger seat locations is approximately 340 cubic feet.

The large cabin area provides comfortable space for a pilot and up to thirteen passengers. (Operations with more than nine passengers are limited to countries that issue approval.) Inside cabin dimensions are 51" high and 62" wide at the front and rear spar bulkhead locations. The cabin narrows slightly toward the tailcone to 52" high and 53" wide just aft of the cargo door. Total length of the cabin from the firewall to the aft bulkhead is 21 ft. 4 in. The cabin floor is flat with the exception of two feet in the aft cabin which is five inches above the main floor and makes up the aft cabin baggage area.

Entry to, and exit from the airplane is accomplished through an entry door on each side of the cabin at the pilot and front passenger seat location and through a two piece airstair-type door on the right side of the airplane just aft of the wing. A large cargo door is also provided on the left side of the airplane directly across from the airstair door. All doors can be opened with the flaps up or down.

The left crew entry door incorporates a conventional door handle, key-operated Medco door lock, conventional interior door handle and window with a small triangular foul weather window. The foul weather window may be opened for additional ground ventilation. The right crew entry door incorporates a conventional outside and inside door handle and a manually operated inside door lock. A 4 inch deep x 5 1/2 inch Kydex storage area is incorporated into the interior width of both the left and right crew doors. Both doors have a maximum width of 35.65 inches and a maximum height of 44.75 inches and will open 180 degrees forward to latch against the side of the fuselage.

Cabin volume, including the pilot and aft cabin baggage

The passenger entry door consists of an upper and lower section. When opened, the upper section swings upward and the lower section drops down providing integral steps to aid in boarding or exiting the airplane. The door opening is approximately 24 inches wide and 50 inches high.



4. FUSELAGE GROUP (Continued)

The primary opening is the two-piece cargo door installed on the left side of the airplane aft of the wing trailing edge. The cargo door is divided into an upper and lower section. When opened, the upper section swings upward and the lower section opens 180 degrees forward providing a large 49 inch wide by 50 inch high opening in the side of the fuselage which facilitates the loading of bulky cargo into the cabin. The door opening is flush with the floor and has square corners for maximum cargo loading capability.

5. WING GROUP

The Grand Caravan utilizes conventional wings with NACA 23000 Series Airfoils. The externally braced, fail-safe wings are constructed of front and rear spars with formed sheet metal ribs, doublers and stringers. The entire structure is covered with aluminum skin.

6. EMPENNAGE GROUP

The empennage consists of a conventional vertical stabilizer, rudder, horizontal stabilizer and elevator, all of which are constructed of a forward and aft spar with formed sheet metal ribs and aluminum skin panels. The horizontal stabilizer contains dual jack screw type actuators for

7. LANDING GEAR

The landing gear is of the non-retracting, tricycle type with a steerable nose wheel and two main wheels. Shock absorption is provided by the tubular spring steel main landing gear struts with an inter-tube connecting the two outer tubes. The tires are tube type; standard nose tire is 22 x 8.00 x 8, 6 ply and main gear tires are 8.50 x 10, 8 ply. The nose gear tire is mounted on an extended nose gear strut providing 14 3/4 in. ground clearance. The nose gear shock absorption is provided by the oil snubber combined with a drag link spring pro-

8. PROPULSION

8.1 Powerplant

The propulsion system consists of a single fuselage mounted Pratt and Whitney PT6A-114A turboprop engine. The PT6A-114A is flat rated to 675 shp at 1900 rpm. Time between overhaul for this engine is 3600 hours.

Conventional turboprop controls are used to operate the engine and propeller. They consist of a power lever, emergency power lever, propeller control lever and a fuel condition lever. The power and fuel condition levers are engine controls while the propeller control lever controls

The airplane is equipped with a two-piece plexiglass windshield reinforced with a metal center strip. Sixteen side windows of the fixed type are installed in the cabin sides including one each in the two crew entry doors, two windows in the upper section of the cargo door and one window in the upper section of the passenger entry door. The windshield and forward crew door windows are 5/16 inch and 1/4 inch thick respectively. All other windows are 3/16 inch thick tinted plexiglass.

The primary wing spars, wing carry-through spars in the fuselage and attaching structure are of fail-safe construction for limit flight loads. Fail-safe construction assures that the structure is designed and built in such a way that should any single structural component fail, the remaining structure is capable of carrying certified limit flight loads.

operating the elevator trim tabs. An elevator trim tab is attached to each elevator by full length piano-type hinges. Stabilizer abrasion boots are installed along the leading edge of the horizontal stabilizer.

viding vertical and aft displacement restraint. Each main gear wheel is equipped with a hydraulically actuated four piston brake.

Nose gear steering is accomplished by using the rudder pedals which turns the nose wheel through an arc of approximately 15° each side of center. By applying either left or right brake, the degree of turn may be increased up to 51.5° each side of center. The minimum turning radius of the airplane, using differential braking and nose wheel steering during taxiing, is 33 feet 8 inches.

propeller speed. An emergency power lever is provided to manually control fuel supply to the engine should a malfunction occur in the fuel control unit.

Engine operation is monitored by the engine indication system (EIS) which shows numeric readouts of critical engine, fuel and electrical indications for the following: torque, propeller speed, interstage temperature (ITT), gas generator % RPM (Ng), fuel flow, oil pressure and oil temperature. A wet type standby engine torque gauge is also installed.



8. PROPULSION (Continued)

An inertial separator system is built into the engine air inlet duct to prevent moisture particles from entering the engine inlet plenum. The inertial separator system is mechanically controlled by a push-pull handle located on the left side of the instrument panel.

Engine ignition is provided by two igniters that are energized by the ignition exciter mounted on the right side of the engine compartment. Mounting provisions are provided for a standby ignition exciter unit.

An Altair Digital ADAS-Engine Trend Monitor is an engine trend recording device and an engine parameter exceedance monitor which will allow operators to monitor the health of the engine through periodic sampling of engine parameters. The engine trend monitor contains logic to determine when the aircraft is in a stable cruise flight regime before automatically taking a trend sample.

9. SYSTEMS

9.1 Flight Controls

The Grand Caravan's flight control system consists of conventional aileron, elevator and rudder control surfaces. In addition, a pair of slot lip spoilers are mounted above the outboard ends of the flaps. The control surfaces are manually operated through mechanical linkage using a control wheel for the ailerons, spoilers and elevator and rudder/brake pedals for the rudder.

The rudder control utilizes a rudder pedal cable system driving the rudder. The floor mounted rudder bars are gear interconnected to maintain cable tension. Conventional design of inner torque tubes serve to allow co-pilot operation of the left-hand mounted brake cylinders. The brake cylinders have a remote reservoir mounted on the forward side of the engine firewall for convenient access.

Rudder trim system consists of a trim wheel driving a flex shaft which, in turn, adjusts rudder pressure.

The elevator control system features a conventional cable drive system. The elevator is connected to the cables by a bellcrank and push-pull rod.

Elevator trim is accomplished through two elevator trim tabs by utilizing the vertically mounted trim control wheel on the control pedestal. An electric elevator trim system is available with an optional autopilot installation.

The aileron control system is a combination of cables, quadrants, bellcranks and push-pull rods. A push-pull rod drives the ailerons.

This is an advisory system only. The airplane's engine indication system is still the primary source of detecting and correcting conditions where engine limitations are exceeded. There are no additional aircraft limitations and no performance change with the Altair Engine Trend Monitor installed.

8.2 Propeller

The Grand Caravan is equipped with a 106 inch diameter metal propeller. The three-blade, anti-ice, constant speed, full feathering, single acting, reversible pitch propeller is manufactured by McCauley, model 3GFR34C703. The propeller is controlled by a propeller governor and an overspeed governor mounted on and driven by the reduction gear-box. The overspeed governor acts as a safeguard against propeller overspeed should the primary propeller governor fail.

An aileron trim system consists of a pedestal mounted control knob, cables, fail-safe actuator, pushrods and trim tabs. The left aileron incorporates a servo tab while the right aileron incorporates a trimmable servo tab.

A pair of slot lip spoilers mounted above the outboard ends of the flaps are incorporated to improve low speed roll control. The spoilers are interconnected with the aileron system through a pushrod mounted to an arm on the aileron bellcrank. Spoiler travel is proportional to aileron up travel.

The single slotted, semi-fowler flaps are electrically driven and incorporate a trailing edge angle with leading edge vortex generators to reduce stall speed and provide enhanced lateral stability. A selector and mechanical type follow-up indicator is provided in the control pedestal. The flap system consists of an electrically driven screwjack actuator, a primary and standby motor, and a system of cables, bellcranks and pushrods connected to the flaps. The standby electric drive motor provides a back-up flap actuation system in the event of failure of the primary motor.

9.2 Fuel System

The Grand Caravan fuel system consists of two vented integral fuel tanks (one in each wing formed by the front and rear spars), a fuel reservoir, engine fuel system, quantity and flow instrumentation, and the necessary lines, controls, valves and pumps to complete the system. Fuel system capacity is 335.6 U.S. gallons (332 gallons usable). Filling the fuel tanks is accomplished through filler caps in each wing.



9. SYSTEMS (Continued)

Normal operation is with both tanks on. The pilot can mechanically select fuel from either left or right fuel tanks or both at the same time.

Fuel quantity is measured by four fuel level probes (two in each wing tank) and indicated on the engine indication system (EIS). The fuel quantity system is calibrated in gallons based on 6.7 pounds per gallon. Fuel quantity indications are displayed in pounds. Wing fuel level caution advisories, one for each wing tank, are provided through the crew advisory system (CAS). The appropriate FUEL LOW (CAS) message will illuminate when the fuel in the respective tank is approximately 25 gallons or less. A warning advisory is also provided to indicate a low fuel level in the fuel reservoir tank.

9.3 Electrical System

The Grand Caravan is equipped with a 28-volt, direct-current electrical system. The system uses a 24-volt, 38 ampere-hour sealed lead acid battery as a source of electrical energy and a 200-amp engine-driven starter generator. (An optional 300-amp engine-driven starter generator is available.) Power is supplied to most general electrical and all avionics circuits through two general buses, two avionics buses and a battery bus. The battery bus is energized continuously for ELT reset, clock, cabin/courtesy light functions and engine trend monitor processor.

A generator control unit provides the electrical control function necessary for the operation of the starter-generator.

Electrical system operation can be monitored on the Engine Indication System (EIS) display on the MFD (in normal mode). Battery Amps and Battery Volts can be viewed on either EIS page (Engine or System). Generator and (Standby) Alternator Amps can be viewed on the EIS System page. The Crew Alerting System (CAS) Annunciation Window is located on each Primary Flight Display (PFD) and can present appropriate messages (i.e. warning, caution and advisory) pertaining to various engine and aircraft systems as may be applicable.

A standard ground service plug receptacle permits the use of an external power source for cold weather starting or during maintenance work. Ground service circuitry is provided to prevent the external power and the battery from being connected together during starting, and incorporates polarity reversal and overvoltage protection. The external power receptacle is installed on the left side of the engine compartment near the firewall.

A standby electrical system is installed for use as a standby power source in the event the main generator system malfunctions in flight. The system includes a belt-driven alternator operated at a 75-amp capacity rating.

One automotive-style 12-volt power outlet is located in the cockpit. Two cabin power outlets in the passenger area are available as an option.

9.4 Lighting System

Exterior lighting consists of three navigation lights, two landing lights, two taxi/recognition lights, two strobe lights, a flashing beacon and two underwing courtesy lights. All exterior lights are controlled by toggle switches located on the lighting control panel on the left side of the instrument panel.

The G1000 instrument panel incorporates LED backlighting controlled manually through the instrument panel dimmer bus. When the dimmer bus is not used, photo-cell technology automatically controls backlight adjustments to optimize display appearance through a broad range of cockpit lighting conditions. Other miscellaneous lighting provided include pilot and co-pilot control wheel map lights, cabin/courtesy lights, passenger reading lights and a no smoking/seat belt advisory sign.

9.5 Environmental System

The temperature and volume of airflow to the cabin is regulated by the cabin heating, ventilating and defrosting system. In the heating system, hot engine compressor outlet air is routed through system components to obtain the correct air temperature before air is routed to the cabin air distribution system. Controls are provided to direct the heated air to the forward and/or aft portions of the cabin for heating and to the windshield for defrosting.

Outside ventilating air is obtained from an inlet on each side of the forward fuselage and through two ram air inlets, one on each wing at the upper end of the wing struts. The wing ventilating air is routed through the wing into a plenum chamber located in the center of the cabin top. The plenum distributes the ventilating air to individual overhead outlets at each seat position. The forward fuselage ram air inlets provide ventilation through panel outlets to the flight deck.

A fan driven ventilation system provides supplemental cabin ventilation through two overhead mounted ventilators. An optional air conditioning system is available that provides comfortable cabin temperatures during hot weather operations, both on the ground or in flight.



9. SYSTEMS (Continued)

Optional seventeen and ten port oxygen systems are available.

9.6 Pitot-Static System

The left hand pitot-static system supplies ram air and static pressure to the number one AHRS (Attitude Heading Reference system) and to the standby airspeed indicator. It also provides static pressure to the standby altimeter. The system is composed of a heated pitot-static tube mounted on the leading edge of the left wing, a static pressure alternate source valve, a drain valve located behind the instrument panel and the associated plumbing necessary to connect the instruments and sources.

The right hand pitot-static system supplies ram air and static pressure to the number two AHRS. The system is composed of a heated pitot-static tube mounted on the leading edge of the right wing, a drain valve located behind the instrument panel, and associated plumbing.

9.7 Vacuum System

A vacuum system provides the suction necessary to operate the standby attitude indication. Vacuum is obtained by passing regulated compressor bleed air through a vacuum ejector. The vacuum system consists of the bleed air pressure regulator, a vacuum ejector, a vacuum relief valve, and a vacuum system air filter. The system is monitored via a warning flag on the standby

10. CORROSION PROOFING

The Grand Caravan includes corrosion proofing as standard equipment. Detail parts receive a chemical film conversion coating and are epoxy primed.

Interior surfaces of integral wing fuel bays are primed with a fuel resistant epoxy primer for corrosion protection.

Steel parts in contact with aluminum structure, in general, are cadmium-plated with a chromate dip. Fasteners

attitude indicator.

9.8 Garmin G1000 Avionics System

The integrated avionics system incorporates 3 ten-inch displays; the pilot's primary flight display (PFD), the multifunction display (MFD) and the co-pilot's PFD. The system includes a single audio system control panel and a separate autopilot controller.

The fully integrated Garmin G1000 system will provide the following communication/navigation/surveillance (CNS) functions: Dual VHF NAV/Glideslope/Localizer receivers, dual VHF com transceivers, dual WAAS GPS receivers and Mode S Transponder. The KN-63 DME is an integrated display and offers Nav1/NAV2 switching. Crew alerts are displayed on the PFD.

The automatic flight control system (AFCS) incorporates a GFC-700 three-axis autopilot with pitch trim and GFC-710 autopilot controller.

Avionics cooling is provided by two cowl deck fans and three display fans. The cowl deck fans are powered from the electrical bus. The display fans provide cooling air to each of the three display units and are powered from the display power circuits.

Avionic circuit breakers are located on an exclusive panel located on the lower left-hand instrument panel.

utilized in the joining process of the steel to aluminum assemblies are installed wet primed for improved corrosion protection.

The engine mount structure receives a heat resistant enamel finish providing protection in thermal environments up to 400° F.

Polyurethane paint is included as standard exterior paint.



Standard Garmin G1000 Avionics Package (Options also pictured)



FIGURE III — GRAND CARAVAN FLIGHT DECK

11. STANDARD GRAND CARAVAN EQUIPMENT

11.1 AVIONICS

- Standard Avionics Kit (includes Two Headsets)
- Garmin G1000 System includes:
 - GDU 1040A Pilot & Co-Pilot Primary Flight Display (PFD)
 - GDU 1040A Multi Function Display (MFD)
 - GDC 74A Dual Air Data Computer (ADC)
 - GEA 71 Engine/Airframe Unit
 - GRS 77 Dual Attitude and Heading Reference System (AHRS)
 - GMA 1347 Single Audio System with Integrated Marker Beacon Receiver
 - GTX 33 Mode S Transponder
 - Garmin Relative Terrain/Obstacles
 - Garmin Flight Charts Capable
 - Garmin Safe Taxi Capable
 - KN-63 DME
 - Switch, Avionics Power (Two) (On-Off)
 - Arteson ME-406 2-Frequency (Non -Nav Interfaced) ELT with Remote Switch and Monitor Light (Dorsal Fin Installation)

- Avionics Cooling, (2) cowl deck fans and (3) display fans
- PA System with Aft Cabin Speakers

11.2 ENGINE INDICATION SYSTEM (EIS)

Displayed on MFD During Normal Operations:

Engine and System Displays - Show numeric readouts of critical engine, fuel and electrical indications and calculations for the following:

- Torque
- Interstage Turbine Temperature
- Gas Generator Speed
- Propeller Speed
- Oil Pressure
- Oil Temperature
- Fuel Quantity
- Fuel Flow
- Ammeter/Voltmeter
- Standby Engine Instrument
 - Engine Torque Gauge, Wet Type
- Altair Digital ADAS Engine Trend Monitoring System



11. STANDARD GRAND CARAVAN EQUIPMENT (Continued)

11.3 FLIGHT INSTRUMENTS

Indications Displayed on each PFD:

- Airspeed
- Attitude with Slip/Skid Indication
- Altitude
- Vertical Deviation, Glideslope and Glidepath
- Vertical Speed
- Horizontal Situation Indication
- Outside Air Temperature
- System Time
- Generic Timer
- Wind Data
- Standby Flight Instruments:
 - Airspeed Indicator
 - Attitude Gyro
 - Altimeter
- Magnetic Compass,
- Heated Pitot System, Pilot & Co-Pilot
- Alternate Static Source
- Static Source Drains
- Instrument Static System
- Second Independent Pitot-Static System

11.4 FLIGHT CONTROLS

- Brake, Parking
- Brakes, Hydraulic, Toe-Operated
- Control Cables — Corrosion Resistant Steel
- Control Lock, Ailerons and Elevator
- Flight Control System, Pilot & Co-Pilot (Includes All-Purpose Control Wheel, Pedals and Toe Brakes)
- Friction Lock, Engine Controls
- Powerplant, Quadrant Type Controls:
 - Condition Lever
 - Primary Engine Power
 - Back-Up Engine Power, (Emergency Power Lever)
- Propeller, Speed and Feather
- Rudder Gust Lock
- Trim System (Aileron/Rudder (Manual), Elevator (Manual & Electric Pilot & Co-Pilot)
- Wing Flaps, Electric Pre-Select with Standby Motor

11.5 ENVIRONMENTAL

- Defroster, Windshield (Pilot and Copilot)
- Heating System, Cabin (Bleed Air Type)
- Soundproofing
- Ventilation System, Cockpit (Ram Air)
- Ventilator, Adjustable, Cabin Air
- Ventilation System, Fan Driven

11.6 ELECTRICAL POWER

- Battery, 24 Volt, 38 Amp/Hr, Sealed Lead-Acid
- Battery Switch (On-Off)
- Circuit Breakers, Electrical

- Generator Control Unit
- Generator Switch (Trip-On-Reset)
- Ground Service Plug Receptacle
- Starter/Generator, 200 Amp
- Generator Control Unit Mounting (Provisions for Mounting Standby Unit)
- Power Outlet, 12V Cockpit
- Standby Electrical System, 75 amp

11.7 EXTERIOR LIGHTS

- Beacon – Omni Flash (Red)
- Courtesy, Under Wing
- Landing, L.H. and R.H. (Wing Leading Edge-Outboard)
- Navigation (3)
- Strobe (2) Wing Tip Mounted
- Taxi, L.H. and R.H. (Wing Leading Edge-Inboard)
- Ice Detection

11.8 INTERIOR LIGHTS

- LED Backlit Instrument Panel Lighting
- Map Light, Control Wheel Mounted, Pilot & Co-Pilot (Variable Intensity)
- Overhead Courtesy (3) (Aisle, Aft Cargo Area and Passenger Door)
- Overhead Flood (Pilot and Copilot) (3)
- Passenger Reading Lights (11)
- Dimming Controls, Switch Panel, Avionics Circuit Breaker Panel, Left Hand Panel & Environmental Panel

11.9 POWERPLANT

- Chip Detector Installation
- Cowling, Rigid-Mounted (Quick Removable) Lower and Easily Openable Upper Sides
- Cowl Locks, Medco
- Engine Inlet Cover (2) and Propeller Tie-Down Sleeve
- Engine, Turboprop PT6A-114A, 675 SHP, 3600 TBO
- Engine Wash Ring (Integral)
- Engine Support, Vibration Isolation
- Filter, Integral, Full Flow Oil
- Fire Detection System, Engine Compartment
- Ignition System Excitor Unit Mounting (Provisions for Mounting Standby Unit)
- Ignition System (Dual Ignitors)
- Intake Inertial Separator (Manual)
- Oil Cooler, High Capacity
- Overspeed Governor
- Propeller, Anti-Ice, 3 Blade Aluminum, Constant Speed, Full Feathering, Reversible – McCauley
- Propeller Governor
- Propeller Spinner (Polished)
- Shielding, Engine Ignition
- Shutdown Fuel Collector, Engine
- Valve, Oil Quick Drain



11. STANDARD GRAND CARAVAN EQUIPMENT (Continued)

11.10 FUEL SYSTEM

- Fuel Boost Switch, Auxiliary
- Fuel Caps with Anti-Siphon Doors
- Fuel Control Heater, Engine
- Fuel Filter with Quick Drain
- Fuel Low Level Warning System
- Fuel Pump, Auxiliary (Electric)
- Fuel Pump, Engine
- Fuel Reservoir with Quick Drain
- Fuel Selector Valves
- Fuel Shutoff Valve
- Fuel Tanks, 332 Gallons Usable
- Fuel Valves, Quick Drain (8)
- Fuel Vents, Non-Icing
- Fuel Sampler Cup

11.11 INTERIOR

- Aircraft Keys
- Approach Plate Holder, L.H. & R.H.
- Baggage Area Partition Net
- Baggage Tie-Down Straps (4)
- Beverage Cup Holders (Pilot and Copilot)
- Cargo Tie-Down Fittings Provisions
- Cargo Tie-Down Fittings (Baggage Area)
- Checklist, Pilot's (Laminated)
- Corrosion Proofing, Internal
- Crew Door Storage Area RH, LH
- De-Ice Partial Plumbing (Wing & Stabilizers) (Consists of Difficult to Install Plumbing)
- Fire Extinguisher Cabin— Hand Type
- Floor Covering, Lightweight Vinyl
- Glareshield, Padded
- Handbook, Customer Care, Includes Engine/Flight Logs, Warranty, Etc.
- Handbook, Pilot's Operating
- Headliner – Vinyl
- Hooks, Clothes Hanger
- Instrument Panel – Metal
- Map/Glove Compartment
- Oxygen System, Partial Installation (Consists of Difficult to Install Plumbing)
- Pilot and Co-pilot Restraint – Integral 5 Point Lap and Shoulder Harness with Inertial Reel
- Pilot's LH Pre-Flight Assist Handle
- Plotter, Weight & Balance (Cargo & Passengers)
- Pockets, Map and Storage
- Recorder, Flight Hour
- Seats, Pilot & Copilot, Adjustable Fore, Aft and Vertical with Articulating Recline and Arm Rest
- Sign, Fasten Seat Belts & No Smoking
- Step, Cabin Entrance, Retractable (RH & LH Crew Entry Doors)
- Sunvisors, Rosen
- Window, Foul Weather, Pilot Door
- Windows Tinted All-Around

11.12 EXTERIOR

- Anti-Precipitation Static Kit
- Bonding Straps, Control Surface (Aileron, Elevator and Rudder)
- Cargo Pod Provisions with Twisted Stack
- Corrosion Proofing, External
- Door, Cargo, Two-Piece (Left Side of Aircraft, with Upper Door Unlocked Annunciator Light)
- Door, Copilot (Full Opening)
- Door, Pilot (Full Opening)
- Door, Passenger with Airstair Feature (Right Side of Aircraft with Upper Door Unlocked Annunciator Light)
- Jack Points (Fuselage and Main Landing Gear)
- Landing Gear, Fixed, Nose, Steerable
- Landing Gear, Fixed, Main
- Lock, Key-Operated (One Key Fits All Doors)
- Paint, All Over (Modified Polyurethane)
- Stabilizer Abrasion Boots
- Stall Warning System, Heated
- Tires, Tube Type, with Extended Nose Gear Fork, Main 8.50 x 10, 8 ply
- Tie-Down Rings, Aircraft
- Tow Bar



12. DOCUMENTATION AND TECHNICAL PUBLICATIONS

U.S. Standard Airworthiness Certificate, FAA8100-2; Export Certificate of Airworthiness, FAA8130-4 or Special Airworthiness Certificate FAA8130-7 as appropriate;

- Equipment List
- Weight and Balance Report
- Pilot's Operating Manual
- Abbreviated Procedures Checklist
- Log Books (Aircraft and Engines)

Additional Miscellaneous Information Concerning Engine and Airframe Support

- Passenger Briefing Cards
- Cessna CESCO Instruction Manual

CESSNA TECHNICAL INFORMATION

Cessna makes available a complete system of manuals and catalogs for the operation and maintenance of the Caravan. All Cessna and related technical information is listed in the Cessna Customer Care Supplies and Publications Catalog.

Cessna manuals are kept current through periodic revisions. Aircraft operators and designated maintenance facilities can receive these revisions by mail through a subscription service. The subscription is free for the first year to owners of new aircraft. A subscription fee is charged thereafter.

The following manuals are provided on CD-ROM with the purchase of a new Caravan:

- Service Maintenance Manual
- Illustrated Parts Catalog
- Wiring Diagram Manual
- Structural Repair Manual
- Service Bulletins
- Avionics Wiring Diagram (custom diagram of the actual avionic installation)

13. MAINTENANCE PROGRAMS

CESCOM

Cessna will provide a computerized maintenance record service for one (1) full year from the date of delivery of a Cessna Caravan to the purchaser.

This service will provide owners and operators with the reports necessary for the efficient control of maintenance activities. It will provide an accurate and simple method of keeping up with aircraft components, inspections, service

The following materials are provided by Pratt & Whitney Canada:

- Combined Engine Maintenance Manual & Illustrated Parts Catalog CD
- One set Engine Service Bulletins Including Spare Parts Bulletins and Service Information Letters (Paper)
- Free revision coverage for one year
- Service Bulletins are also available by on-line or e-mail subscription at www.pwc.ca or through the Pratt and Whitney Help Desk at (800) 268-8000.

CESSNA REVISION STATUS CHECKLIST

The Revision Status Checklist is used to verify that only the most current Cessna maintenance and aircraft operation publications are in use. The checklist is available by subscription and is revised every 90 days.

CESSNA OWNER ADVISORY

Cessna Owner Advisories provide owners of Cessna aircraft up-to-the-minute information about mandatory and beneficial service requirements and the latest in product improvements. Owner Advisories summarize new Service Bulletins or Service Newsletters and indicate any action required by the owner, the time required for the owner to comply, and the existence of any associated "credit allowances."

Cessna Owner Advisories are mailed automatically to owners of U.S. registered Cessna aircraft using the latest name and address provided to the FAA. Owner Advisories can be mailed to a different address by request, provided the subject aircraft is still covered by Cessna warranty. International owners of Cessna aircraft covered by Cessna warranty receive Owner Advisories through a complimentary subscription. After warranty expiration, international subscriptions are available, although a subscription fee will be charged. Revisions for the Pilot's Operating Handbook and Pilot's Abbreviated Checklist and/or Log of Approved Supplements are included with the Owner Advisory when applicable.

bulletins and airworthiness directives while providing permanent aircraft records of maintenance performed.

Reports will be available which reflect the aircraft status, upcoming scheduled maintenance and a recap of the previous month's reported maintenance activity. Semi-annual reports concerning projected annual maintenance requirements, component removal history and fleet-wide component reliability will also be available.



13. MAINTENANCE PROGRAMS (Continued)

The on-line system is the standard service, however, a paper service is available at an additional charge. The on-line system is accessible using a local computer with Internet capability. Data is electronically transferred through Internet connections between the customer and Cessna on a regular basis to keep information up-to-date at both locations. In addition to the standard CESCO reports, customer specific reports and maintenance records can be generated at the local computer whenever the customer wishes.

CARAVAN PHASE CARD INSPECTION PROGRAM

The Caravan Phase Card Inspection Program is designed specifically for operators engaged in CFR 14, Part 135 and other high-use operations (minimum of 400 hours per year). Actual field experience demonstrates an average 30 percent reduction in scheduled maintenance labor hours over "progressive" or "periodic" inspection programs.

The Phase Card Program is accomplished using "work cards" which list specific tasks to achieve during each inspection. The work cards provide the mechanic with step-by-step, easy-to-follow instructions, service manual chapter references, special diagrams and applicable notes, cautions and warnings. The program is completed through twelve phases scheduled every 200 hours. A "mini-check" is performed at 100-hour intervals. This carefully scheduled and specifically planned program ensures a safer and more reliable aircraft through inspections conducted in a thorough, systematic, and deliberate manner.

ALTAIR DATA ACQUISITION SYSTEM & TURBINE TRACKER

Cessna has chosen the Altair ADAS system as standard equipment on the Caravan to allow operators to easily monitor and maintain the aircraft engine.

The ADAS system records engine parameters, indicated airspeed, pressure altitude, outside air temperature, flight hour meter, battery voltage, and the positions of the particle separator, emergency power lever and bleed air cabin heat switch.

Data retrieval is handled using a special software program installed on a laptop. Data delivery is handled using the computer to transfer the aircraft data to the Turbine Tracker (tm) website. The Turbine Tracker (tm) website formats the data into customized reports for use as analysis tools.

ENGINE CONDITION TREND MONITORING

Pratt & Whitney Canada developed this program for use with the PT6A-114 engines installed in Caravan aircraft. This is a system of calculating and graphically presenting recorded engine instruction indications. The recorded indications are then mathematically adjusted for comparison of actual engine performance to typical engine performance characteristics.

Two important features are available to owners and operators using engine trend monitoring:

1. It allows for early detection of compressor and/or turbine deterioration, thereby minimizing secondary problems and overall repair costs.
2. It allows for hot section inspections to be accomplished on an "on condition" basis instead of at a scheduled recommended 1800-hour interval provided the following requirements are met:

*Monitoring is implemented within the first 100 hours in service or after completion of the hot section inspection

*Certain other requirements are met as stipulated by Pratt & Whitney

"On condition" hot sections are hot sections accomplished only when necessary, which results in significantly reduced operating costs.

Open Account Information

With an active open account, Caravan owners are able to purchase spare parts at the current published list price directly from Cessna Parts Distribution. The open account can also be used to purchase Cessna publications and other items.

PRATT & WHITNEY ENGINE MAINTENANCE PROGRAMS

Fleet Services

The Fleet Services business unit offers "pay-by-the-hour" programs for both the airline and corporate markets. The airline program is entitled Fleet Management Program (FMP®) while the corporate program is entitled Eagle Service Plan (ESP®). The objective of these programs is to establish a stable, simplified engine management and financial planning tool, which will guarantee operating costs tailored to suit individual requirements.

These programs provide predictability of costs associated



13. MAINTENANCE PROGRAMS (Continued)

with engine maintenance and minimize the effort required for the operator to effectively manage its engines. These plans eliminate the risk of high cost surprises.

The programs currently offered include:

Term Cost Plan (TCP®)

Under the TCP® the operator pays a guaranteed hourly rate on a monthly basis per engine flying hour. The rate is based on support services selected from a comprehensive menu of options.

Event Cost Plan (ECP®)

As with the TCP®, the operator pays a guaranteed hourly rate per engine flying hour. The payment occurs for each individual engine at the time of its shop visit, where the charge is based upon the total engine hours flown by the engine since its last shop visit.

Maintenance Cost Guarantee Plan (MCG®) - Airline

The MCG® is a not to exceed cost guarantee. No monthly

payments are due. The operator covers the maintenance expenses as they occur and account reconciliation takes place at agreed intervals. If the agreed hourly rate is exceeded, the over run costs are settled in accordance with the terms of the agreement. The operator retains the full benefit of any cost under runs.

Eagle Service Plan (ESP®)

Four plans are available for the corporate operator depending on the level of coverage selected. P&WC provides the operator with coverage of specified engine maintenance expenses in return for a monthly payment based on an established rate per engine operating hour.

Once signed on, you will benefit from having a P&WC representative dedicated to providing the essential coordination and support you expect.

Telephone Number: (450) 468-7681

Fax Number (450) 468-3772

14. LIMITED WARRANTIES

14.1 CESSNA'S LIMITED WARRANTY (MODEL CESSNA GRAND CARAVAN)

Cessna warrants each new model Cessna Caravan Aircraft manufactured by it, including factory installed aircraft equipment and accessories except as noted below, to be free from defects in material and workmanship under normal use and service for the following period from the Warranty Start Date.

One year on all Cessna and non-Cessna interior furnishings, exterior paint, and non-Cessna manufactured airframe components excluding avionics, P&WC engine and accessories, and McCauley propeller systems.

One (1) year unlimited hours OR two (2) years 1000 hour limit on all Cessna manufactured airframe components.

Note: Cessna demonstrator aircraft and distributor inventory warranty begins at 100 hours, six (6) months or retail sale, whichever occurs first.

Engine and engine accessories supplied by Pratt & Whitney Aircraft of Canada Limited ("Pratt and Whitney"), avionics supplied by Honeywell (Bendix/King), Garmin International Avionics, Goodrich Avionics Systems, and propellers and governors manufactured by McCauley Propeller Systems are specifically excluded from this warranty and are covered by their respective manufacturer's separate warranty.

New spare service parts sold by Cessna (exclusive of products supplied by Pratt & Whitney, Honeywell Bendix/King, Garmin International Avionics, Goodrich Avionics Systems, and McCauley propellers and governors which are covered by their separate warranties are warranted for a period of six (6) months after installation on the same terms, conditions and limitations of liability as other items covered by this warranty.

Cessna's obligation under this warranty is limited to repairing or replacing, at its option, with exchange, overhauled, or new parts, items which within the applicable warranty periods set forth above are returned at the owner's expense to (i) any Cessna Service Facility authorized by its appointment to service the aircraft and sell such equipment, accessories and service parts, or (ii) other location designated by Cessna and are determined to be defective. A new warranty period is not established for replacements. Replacements are warranted for the remainder of the applicable original warranty period. (Location of Cessna Service Facilities will be furnished by Cessna on request.)

The repair or replacement of defective parts under this warranty will be made without charge to the owner for parts or labor for removal, installation and/or actual repair of such defective parts, except import duties, sales or use taxes, if any, on replacements and warranty repairs which are the owner's responsibility.



14. LIMITED WARRANTIES (Continued)

The provisions of this warranty do not apply to any warranted aircraft, equipment, accessories or service parts manufactured or sold by Cessna which have been subject to misuse, negligence or accident or which shall have been repaired or altered outside of Cessna's factory in any way so as in the judgment of Cessna to affect adversely its performance, stability or reliability, or to normal maintenance services (such as cleaning, control rigging, brake and other mechanical adjustments and maintenance inspections) or replacement of service items (such as light bulbs, brake linings, filters, hoses and tires) made in connection with such services or required as maintenance, or to normal deterioration of soft trim and appearance items (such as paint, upholstery and rubber-like items) due to wear and exposure, or to aircraft equipment, accessories or service parts sold separately which have been improperly installed.

WITH THE EXCEPTION OF THE WARRANTY OF TITLE, TO THE EXTENT ALLOWED BY APPLICABLE LAW, THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED IN FACT OR BY LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES OF REPAIR OR REPLACEMENT AS ABOVE SET FORTH ARE THE ONLY REMEDIES UNDER THIS WARRANTY. CESSNA DISCLAIMS ANY OBLIGATION OR LIABILITY WHETHER IN CONTRACT OR IN TORT (AND WHETHER FOR NEGLIGENCE, STRICT LIABILITY, PRODUCT LIABILITY OR OTHERWISE), INCLUDING LOSS OF USE OF THE PRODUCT WARRANTED, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS OR ANY OTHER DIRECT, CONSEQUENTIAL, SPECIAL OR INCIDENTAL DAMAGES. THIS WARRANTY IS IN LIEU OF ANY OTHER OBLIGATION OR LIABILITY OF CESSNA OF ANY NATURE WHATSOEVER BY REASON OF THE MANUFACTURE, SALE OR LEASE OF SUCH AIRCRAFT PRODUCTS AND CESSNA NEITHER ASSUMES NOR AUTHORIZES ANYONE TO ASSUME FOR IT ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH AIRCRAFT PRODUCTS.

Aircraft Paint - Caravan Aircraft

Cessna endeavors to select and use high quality polyurethane paints from the leading manufacturers. Polyurethane paints are used because of their high gloss characteristics and ability to withstand dramatic tempera-

ture and pressure changes. The paint on your new aircraft will maintain its high gloss characteristics for an extended period of time provided it is cared for properly.

The painted exterior surfaces require an initial curing period which may be as long as ninety (90) days after the finish is applied. During this curing period, some precautions should be taken to avoid damaging the finish or interfering with the curing process. The finish should be cleaned only by washing with clean water and mild soap, followed by a water rinse and drying with a cloth or chamois. Do not use polish or wax, which would exclude air from the surface, during this ninety (90) day curing period. Once the finish has cured completely, it may be waxed with a good automotive wax, but power buffing should be avoided to prevent damage to the paint surface.

Normal paint maintenance will include but is not limited to; touchup of abrasion and wear of the paint on screw heads, around access panels, the radome, wing leading edges, vertical and horizontal stabilizer leading edges, windshield retainers and other leading edge surfaces including parts on the landing gear subject to damage or erosion from airborne particles. Proper maintenance includes keeping surfaces clean, polished, and touching up chipped or eroded areas to prevent further damage and corrosion.

Paint warranty applies only to defects in material and workmanship for a period of one (1) year from Warranty Start Date. Paint deterioration due to normal wear, exposure, or improper care is not covered by the warranty. If proper paint maintenance procedures have been followed and paint peeling, blistering or cracking is evident in areas other than immediate leading edge surfaces, warranty consideration may be requested through a Cessna Service Station.

Generally speaking, warranty repair of paint is confined to a limited surface area. Workmanship or material defects can usually be identified to localized surface areas that were improperly prepared prior to paint application, or to areas where the paint or subsurface primer has been improperly applied.

Complete strip and repaint of an entire airplane can ONLY be authorized if there is evidence of paint defects on several major surface areas of the aircraft. Contact your Cessna Field Service Engineer concerning paint defects on any major surface of an aircraft.



14. LIMITED WARRANTIES (Continued)

14.2 PRATT & WHITNEY CANADA INC.

(New Engine Warranty)

Pratt & Whitney Canada Inc. (P&WC) warrants that each new PT6A-114A engine complete with installed accessories at time of delivery will be free from defects in material and manufacture. P&WC's liability and purchaser's remedy under this warranty are limited to the repair or replacement at P&WC's option of goods returned to P&WC or to a location designated by P&WC which are shown to P&WC's reasonable satisfaction to have been defective, provided that written notice of defect shall have been given by Purchaser to P&WC or its designee within one thousand (1,000) flying hours after delivery of the engine to the first user. The repair or replacement of defective goods under the Warranty will be made by P&WC or its designee without charge for parts or labor for removal, installation and/or actual repair of such defective goods, except import duties, sales or use taxes, if any, on replacement. Transportation charges for the return of defective goods to P&WC or its designee and their reshipment to Purchaser and the risk of loss thereof will be borne by P&WC.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND ARE GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTY OF MERCHANTABILITY AND ANY OBLIGATION, LIABILITY, RIGHT, CLAIM OR REMEDY IN CONTRACT OR TORT WHETHER OR NOT ARISING FROM P&WC'S NEGLIGENCE, ACTUAL OR IMPUTED. THE REMEDIES OF THE PURCHASER FOR ANY BREACH OF WARRANTY SHALL BE LIMITED TO THOSE PROVIDED HEREIN TO THE EXCLUSION OF ANY AND ALL OTHER REMEDIES INCLUDING, WITHOUT LIMITATION, INCIDENTAL OR CONSEQUENTIAL DAMAGES. NO VARIATION OR EXTENSION OF THE FOREGOING WARRANTIES, REMEDIES OR THIS LIMITATION WILL BE BINDING UPON P&WC UNLESS APPROVED IN WRITING BY A DULY AUTHORIZED OFFICER OF P&WC.

14.3 McCAULEY LIMITED WARRANTY

Cessna Aircraft Company, McCauley Accessory Division, Wichita, Kansas, U.S.A. "McCAULEY," expressly warrants its new or remanufactured products therefore sold by McCauley to be free from defects in material and workmanship under normal use and service for a period of thirty six (36) months after delivery to the original retail purchaser.

McCauley's obligation under this warranty is limited to repairing or replacing, at its option, any part or parts which, within the thirty six (36) month period as above set forth shall be returned transportation charges pre-paid to McCauley at Wichita, Kansas or to any McCauley appointed Service Facility authorized by such appointment to service the McCauley product of the type involved and which upon examination shall disclose to McCauley's satisfaction to have been thus defective.

The repair or replacement of defective parts under this warranty will be made by McCauley or its authorized Service Facilities without charge for parts or labor for the actual repair of such defective parts, except import duties, sales or use taxes, if any, on replacements.

The provisions of this warranty do not apply to any McCauley products or service parts therefor which have been subject to misuse, negligence or accident or which shall have been repaired or altered outside of McCauley's factory in any way so as in the judgment of McCauley to affect adversely its performance, stability or reliability nor to normal maintenance service.

To the extent allowed by applicable law, THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED IN FACT OR BY LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES OF REPAIR OR REPLACEMENT AS ABOVE SET FORTH ARE THE ONLY REMEDIES UNDER THIS WARRANTY. McCAULEY DISCLAIMS ANY OBLIGATION OR LIABILITY WHETHER IN CONTRACT OR IN TORT (AND WHETHER FOR NEGLIGENCE, STRICT LIABILITY, PRODUCT LIABILITY OR OTHERWISE), INCLUDING LOSS OF USE OF THE PRODUCT WARRANTED, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS OR ANY OTHER DIRECT, CONSEQUENTIAL, SPECIAL OR INCIDENTAL DAMAGES. THIS WARRANTY IS IN LIEU OF ANY OTHER OBLIGATION OR LIABILITY ON THE PART OF McCAULEY TO ANYONE OF ANY NATURE WHATSOEVER by reason of the manufacture, sale, lease or use of the warranted products and McCauley neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with such warranted products.

14.4 Honeywell/Bendix/King WARRANTY

A. General Aviation Avionic products manufactured by Honeywell/Bendix/King, General Aviation Division (collectively referred to herein as "Honeywell/Bendix/King")



14. LIMITED WARRANTIES (Continued)

are warranted against defects in design, material or workmanship caused by Honeywell/Bendix/King or its authorized agent(s) for the Warranty Period as defined in Paragraph (B) of this statement which occur under normal and intended use and service, subject to all of the qualifications and conditions hereinafter stated.

1. Warranty coverage is only offered to purchasers who make warranty registrations within eighteen (18) months of the product's factory shipping date. Demonstration or stock aircraft usage is restricted to 100 hours service prior to warranty registration. Warranty coverage, therefore, may be unavailable or limited, depending upon the usage or time the product in question may have remained unsold in the custody of the O.E.M. (Original Equipment Manufacturer), his agent, or the retail dealer, a matter as to which the seller is expected to maintain accurate records and provide same, upon demand, to any purchaser or Honeywell/Bendix/King.
2. Warranty coverage for products otherwise not eligible by reason of expiration of the eighteen (18) month period specified above may again become eligible for warranty protection, provided (a) that warranty registration occurs within thirty (30) months of the product's factory shipping date and (b) that the products are submitted to Honeywell/Bendix/King for inspection and certification and then the promulgated HONEYWELL/BENDIX/ KING certification fee is paid.

B. The Warranty Period for products shall begin upon the date of delivery of the product to the purchaser and shall end two years thereafter.

C. Any product Honeywell/Bendix/King finds to be in violation of the warranty as set out in Paragraph (a) hereof, at the option of Honeywell/Bendix/King, shall be repaired, replaced, or exchanged, in accordance with the following procedures:

1. Products shall be returned to an authorized Honeywell/Bendix/King Service Center or Honeywell/ Bendix/King Regional Product Support Repair/ Overhaul Facility, with transportation charges prepaid.
2. After correction, the products shall be returned to the purchaser with surface transportation charges prepaid, except for returns to purchasers in foreign countries.
3. The risk of loss or damage to all products in transit shall be borne by the party initiating the transportation of such products unless the purchaser

makes a request for a specific mode of transportation. In such case, the risk of loss and the cost of shipment shall be borne by the purchaser. All items repaired or replaced hereunder shall be warranted for the unexpired portion of the original Warranty Period.

D. This warranty specifically excludes defects which Honeywell/Bendix/King determines to be the result of:

1. Abuse, accident, or misuse;
2. Contamination, negligence, tampering, or improper storage or maintenance;
3. Repair or attempted repair by unauthorized persons or use of non-Honeywell/Bendix/King or unauthorized repair or replacement parts; or
4. Products not installed by an authorized Honeywell/Bendix/King Installation Facility in accordance with the appropriate installation manual.

E. The Warranty as set out in paragraph (a) is the only warranty for Honeywell/Bendix/King General Aviation Avionics Products and is in lieu of all other warranties express or implied, including the implied warranties of merchantability and fitness for a particular purpose which are herewith expressly excluded and disclaimed.

F. The remedies as set out in Paragraph (c) hereof state the entire liability of Honeywell/Bendix/King and constitute the sole and exclusive remedy of the purchaser. HONEYWELL/Bendix/King shall not be liable for any other claim, loss, or damage, including, but not limited to incidental, consequential, or other kinds of damages whether based on contract, tort, negligence, or other theory of product liability.

G. Honeywell/Bendix/King reserves the right to make design changes, additions to, and improvements in its products without the obligation to install same in products previously manufactured.

THIS IS A LIMITED WARRANTY

14.5 GARMIN WARRANTY

Aircraft OEM-Installed Avionics 2-Year Limited Warranty Policy

This GARMIN Product is warranted to be free from defects in materials or workmanship for two years from the date of warranty activation. Within this period, GARMIN International, Inc. will at its sole option, repair or replace any components which fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer



14. LIMITED WARRANTIES (Continued)

shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL GARMIN BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

GARMIN retains the exclusive right to repair or replace the product or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

To obtain warranty service, contact your local GARMIN authorized Service Center. For assistance in locating a Service Center near you, call GARMIN Customer Service at one of the numbers shown below.

GARMIN International
1200 East 151st Street
Olathe, Kansas 66062, U.S.A.
Toll free: 1-800-800-1020

Phone: 1-913-397-8200 FAX: 1-913-397-0836

GARMIN (Europe) Ltd.
Unit 5, The Quadrangle
Abbey Park Industrial Estate
Romsey, SO51 9AQ, U.K.

Phone: 44-1794-519944 FAX: 44-1794-519222

Visit our web site at:
www.garmin.com

14.6 GOODRICH AVIONICS SYSTEMS LIMITED WARRANTY

Goodrich Avionics Systems (hereinafter called Goodrich) warrants each item of new J.E.T. and Goodrich

FlightSystems brand equipment manufactured or sold by Goodrich to be free from defects in material and workmanship, under normal use as intended, for a period of thirty (30) months from date of shipment by Goodrich to an authorized facility, or twenty-four (24) months from date of installation by an authorized facility, whichever occurs first. Goodrich warrants each item of new AIM brand equipment manufactured or sold by Goodrich to be free from defects in material and workmanship, under normal use as intended, for a period of eighteen (18) months from date of shipment by Goodrich to an authorized facility, or twelve (12) months from date of installation by an authorized facility, whichever occurs first. No claim for breach of warranties will be allowed unless Goodrich is notified thereof, in writing, within thirty (30) days after the material or workmanship defect is found.

The obligation of Goodrich shall be limited to replacing or repairing at its factory the equipment found defective under terms of this warranty certificate; providing that such equipment is returned in an approved shipping container, transportation charges prepaid, to Goodrich, Grand Rapids, Michigan, or such other location as Goodrich may authorize. Goodrich reserves the right to have necessary repairs performed by an authorized agency.

This warranty shall not apply to any unit or part thereof which has not been operated, installed or maintained in accordance with Goodrich instructions, or has been repaired or altered in any way so as to adversely affect its performance or reliability, or which has been subjected to mishandling, misuse, negligence, or accident.

THIS WARRANTY IS EXCLUSIVE AND IS ACCEPTED BY BUYER IN LIEU OF ALL OTHER GUARANTEES OR WARRANTIES EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Buyer agrees that in no event will Goodrich's liability for all losses from any cause, whether based in contract, negligence, strict liability, other tort or otherwise, exceed buyer's net purchase price, nor will Goodrich be liable for any special, incidental, consequential or exemplary damages.

Goodrich reserves the right to make changes in design, or additions to, or improvements in its equipment without obligation to install such additions or improvements in equipment theretofore manufactured.

A subsidiary of the Goodrich Corporation. (Rev. 08/01)



15. GRAND CARAVAN CREW TRAINING AGREEMENT

Training for one (1) Caravan Crew will be furnished to First Retail Purchaser (hereinafter called the "Purchaser"), subject to the following:

1. A crew shall consist of up to two (2) licensed pilots with current experience for the training sought and one (1) mechanic with A&P licenses or equivalent experience.
 2. Training shall be conducted by Cessna or by its designated training organization.
 - a. A simulator shall be utilized which is FAA certified to provide training to proficiency in accordance with trainer's standards.
 - b. In lieu of a model specific simulator, training will be provided in the most appropriate type simulator available.
 - c. Location of training to be Wichita, Kansas, unless mutually agreed otherwise. The organization conducting the training is hereinafter called the "Trainer."
 3. Training furnished shall consist of the following:
 - a. Flight simulation training to simulator proficiency in accordance with Trainer's standards but not to exceed seven and one half (7.5) total hours for each pilot.
 - b. Ground School training for each pilot and classroom instruction for each mechanic in accordance with Trainer's standards.
 - c. Flight training to flight proficiency in accordance with Trainer's standards not to exceed five (5) total hours per pilot, shall be conducted in the customer's aircraft.
 4. Purchaser shall be responsible for:
 - a. Transportation of crew to and from training site and for living expenses during training.
 - b. Providing an interpreter during the course of training for any of Purchaser's crew not conversant with the English language.
 - c. Payment to Trainer for additional simulator or flight training beyond that required to attain proficiency in accordance with Trainer's standards for the course in which the pilot is enrolled.
 - d. All aircraft for flight training as well as all landing fees, fuel costs, aircraft maintenance and insurance and all other direct costs of operation, including applicable taxes required in connection with the operation of said aircraft during such flight training.
 - e. Extra charges, if any, for scheduling pilots in separate training classes.
 - f. Reimbursing to Cessna the retail rate for training in the event of training before actual sale/delivery, if sale/delivery is cancelled.
5. Seller or Trainer shall schedule all training, furnish Purchaser schedules of training and endeavor to schedule training at a convenient time for Purchaser. A cancellation fee of Two Hundred Dollars (\$200) will be paid by Purchaser if crew fails to appear for scheduled training, except for reasons beyond its reasonable control, unless Purchaser gives Seller written notice of cancellation received at Wichita, Kansas, at least seven (7) days prior to scheduled training. In the event of such cancellation Seller shall reschedule training for the next available class.
6. Neither Seller nor Trainer shall be responsible for the competency of Purchaser's crew during and after training. Trainer will make the same efforts to qualify Purchaser's crew as it makes in training of other Caravan crews; however, Seller and Trainer cannot guarantee Purchaser's crew shall qualify for any license, certificate or rating.
7. Neither Seller nor Trainer shall be responsible for any delay in providing training due to causes beyond its or their reasonable control.
8. All Training furnished to Purchaser under the Agreement will be scheduled to commence no earlier than three (3) months prior to delivery and will be completed within twelve (12) months after delivery of the aircraft unless mutually agreed otherwise.

Signature of the Purchaser to the Purchase Agreement to which this Training Agreement is attached as a part of the Specification and Description shall constitute acceptance by Purchaser of the foregoing terms and conditions relative to training to be furnished by Seller.

Purchaser agrees that Cessna may provide names, addresses and contact information to Trainer for the purpose of class enrollment.

