

Max landing weight: A, B 108,860 kg (240,000 lb)
 C, D 117,025 kg (258,000 lb)
 C (alternative), F (alternative) 124,740 kg (275,000 lb)
 E 113,400 kg (250,000 lb)
 F 118,840 kg (262,000 lb)
 Max wing loading: A 550.2 kg/m² (112.69 lb/sq ft)
 B, E 558.8 kg/m² (114.45 lb/sq ft)
 B (alternative), E (alternative) 583.8 kg/m² (119.58 lb/sq ft)
 C, F 592.1 kg/m² (121.28 lb/sq ft)

D 555.1 kg/m² (113.7 lb/sq ft)
 PERFORMANCE (at max T-O weight, with CFM56-2C1 engines):
 Max level speed, all versions 521 knots (965 km/h; 600 mph)
 Cruising speed at 10,670 m (35,000 ft):
 A, B, C Mach 0.80 (461 knots; 854 km/h; 531 mph)
 Initial cruising altitude: A 10,550 m (34,600 ft)

B 10,090 m (33,100 ft)
 C 10,000 m (32,800 ft)
 T-O field length: A 2,728 m (8,950 ft)
 B 2,957 m (9,700 ft)
 C 3,064 m (10,050 ft)
 Range with max passenger payload:
 A 4,040 nm (7,485 km; 4,650 miles)
 B 6,270 nm (11,620 km; 7,220 miles)
 C 4,830 nm (8,950 km; 5,560 miles)

CESSNA

CESSNA AIRCRAFT COMPANY

Wichita, Kansas 67201

Telephone: (316) 685 9111

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CHAIRMAN OF THE BOARD AND CHIEF

EXECUTIVE OFFICER: Russell W. Meyer Jr

PRESIDENT AND CHIEF OPERATING OFFICER:

R. W. Van Sant

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SECRETARY: David R. Edwards

Cessna Aircraft Company was founded by the late Clyde V. Cessna, a pioneer in US aviation in 1911, and was incorporated on 7 September 1927. Its former Pawnee and Wallace aircraft divisions in Wichita were consolidated as production facilities within the company's Aircraft Division in mid-1984.

In September 1985 an agreement was announced between General Dynamics Corporation and Cessna whereby General Dynamics will acquire the company as a wholly owned subsidiary.

Subsidiary companies owned by Cessna are the McCauley Accessory Division of Dayton, Ohio; Fluid Power Division of Hutchinson, Kansas; United Hydraulics Corporation of Hampton, Iowa; Cessna Fluid Power Ltd of Glenrothes, Fife, Scotland; Cessna Finance Corporation and Cessna International Finance Corporation in Wichita. It has a 49 per cent interest in Reims Aviation of France.

By 30 June 1985, the company had produced a total of 175,808 aircraft. During 1984, its sales totalled 978 aircraft, including units delivered by Reims Aviation of France (which see). Total employment within the company stood at 8,300 in June 1985.

CESSNA MODEL 152

A total of 7,382 standard Model 152s and Model 152 Aerobats had been built by 30 June 1985, including 576 built by Reims Aviation in France. Manufacture of the Aerobat has ended. Production of the standard Model 152 has been suspended. An abbreviated description of the Model 152 follows; full details can be found in the 1984-85 *Jane's*. TYPE: Two-seat cabin monoplane.

POWER PLANT: One 80.5 kW (108 hp) Avco Lycoming O-235-N2C flat-four engine, driving a McCauley Type 1A103/TCM6958 two-blade fixed-pitch metal propeller with spinner. Fuel tanks in wings, with total capacity of 98 litres (26 US gallons), of which 92.75 litres (24.5 US gallons) are usable. Optional long-range tanks have a total capacity of 147.5 litres (39 US gallons), of which 142 litres (37.5 US gallons) are usable. Refuelling points on upper surface of wing. Oil capacity 6.6 litres (1.75 US gallons).

DIMENSIONS, EXTERNAL:

Wing span: standard 9.97 m (32 ft 8 1/2 in)
 with optional conical wingtips 10.11 m (33 ft 2 in)
 Wing chord: at root 1.63 m (5 ft 4 in)
 at tip 1.13 m (3 ft 8 1/2 in)
 Wing aspect ratio 6.7
 Length overall 7.34 m (24 ft 1 in)
 Height overall 2.59 m (8 ft 6 in)
 Tailplane span 3.05 m (10 ft 0 in)
 Wheel track 2.32 m (7 ft 7 1/2 in)
 Wheelbase 1.47 m (4 ft 10 in)
 Propeller diameter 1.75 m (5 ft 9 in)
 Propeller ground clearance 0.305 m (1 ft 0 in)
 Passenger doors (each): Width 0.84 m (2 ft 9 1/2 in)
 Height 0.78 m (2 ft 6 1/2 in)

AREAS:

Wings, gross: standard 14.59 m² (157.0 sq ft)
 with optional conical wingtips 14.82 m² (159.5 sq ft)

WEIGHTS AND LOADINGS:

Weight empty 503 kg (1,109 lb)
 Max T-O and landing weight 757 kg (1,670 lb)
 Max ramp weight 760 kg (1,675 lb)



Cessna Model 152 (Avco Lycoming O-235-N2C engine)

Max wing loading 51.3 kg/m² (10.5 lb/sq ft)
 Max power loading 9.40 kg/kW (15.5 lb/hp)
 PERFORMANCE (at max T-O weight, ISA):
 Never-exceed speed 149 knots (276 km/h; 171 mph) IAS

*Max level speed at S/L 109 knots (202 km/h; 125 mph)

*Max cruising speed, 75% power at 2,440 m (8,000 ft) 106 knots (196 km/h; 122 mph)

Stalling speed, power off:

flaps up 48 knots (89 km/h; 55 mph) CAS

flaps down 43 knots (80 km/h; 49 mph) CAS

Max rate of climb at S/L 218 m (715 ft)/min

Service ceiling 4,480 m (14,700 ft)

T-O run 221 m (725 ft)

T-O to 15 m (50 ft) 408 m (1,340 ft)

Landing from 15 m (50 ft) 366 m (1,200 ft)

Landing run 145 m (475 ft)

Range, recommended lean mixture, with allowance for start, taxi, T-O, climb and 45 min reserves at 75% power:

standard fuel, 75% power at 2,440 m (8,000 ft) 315 nm (583 km; 362 miles)

max fuel, 75% power at 2,440 m (8,000 ft) 340 nm (621 miles)

Range, allowances as above, but with 45 min reserves at 45% power:

standard fuel, econ cruising power at 3,050 m (10,000 ft) 370 nm (685 km; 425 miles)

max fuel, econ cruising power at 3,050 m (10,000 ft) 625 nm (1,158 km; 719 miles)

*With wheel fairings which increase speeds by approximately 2 knots (3.7 km/h; 2.3 mph)

CESSNA MODEL 152 AEROBAT

Manufacture of this aircraft has ended. Full details can be found in the 1984-85 *Jane's*.

CESSNA SKYHAWK

The Skyhawk is certificated for operation as a floatplane, and can be fitted with skis. A version designated F 172 is produced in France by Reims Aviation.

The 1985 model of the Skyhawk introduced new optional equipment including an electrical standby vacuum pump, a new DME with continuous LCD readouts of distance, groundspeed and time-to-station information, and a 12 month limited airframe warranty and one year unlimited hours engine warranty.

A total of 35,545 commercial aircraft in the Model 172/ Skyhawk series had been built by 30 June 1985, including 2,124 F 172s built in France. In addition, 864 were built between 1966-1983 as T-41A, T-41B, T-41C and T-41D Mescalero military basic trainers.

The following description applies to the 1985 Model 172P:

TYPE: Four-seat cabin monoplane.

WINGS: Braced high-wing monoplane. NACA 2412 wing section. Dihedral 1° 44'. Incidence 1° 30' at root, -1° 30' at tip. All-metal structure, except for conical camber glassfibre wingtips. Single bracing strut on each side. Modified Frise all-metal ailerons. Electrically controlled NACA all-metal single-slotted flaps inboard of ailerons. FUSELAGE: All-metal semi-monocoque structure.

TAIL UNIT: Cantilever all-metal structure. Sweepback on fin 35° at quarter-chord. Trim tab in starboard elevator. Ground adjustable tab in rudder, in-flight adjustable trim tab optional.

LANDING GEAR: Non-retractable tricycle type. Cessna Land-O-Matic cantilever main legs, each comprising a one-piece machined conically-tapered spring steel tube. Nosewheel is carried on an oleo-pneumatic shock strut and is steerable with rudder up to 10° and controllable up to 30° on either side. Cessna mainwheels with tubed tyres size 6-00-6, 4-ply rating, pressure 1-93 bars (28 lb/sq in). Nosewheel tyre size 5-00-5, 6-ply rating, pressure 2-34 bars (34 lb/sq in). Hydraulic disc brakes. Parking brake. Wheel fairings optional. Edo Model 89-2000 floats optional.

POWER PLANT: One 119 kW (160 hp) Avco Lycoming O-320-D2J flat-four engine, driving a McCauley Type 1C160/DTM7557 two-blade fixed-pitch metal propeller. (Optional floatplane version has a McCauley Type 1A175/ETM8042 propeller.) One fuel tank in each wing, total capacity 163 litres (43 US gallons). Usable fuel 151.4 litres (40 US gallons). Provision for long-range tanks, giving total capacity of 204 litres (54 US gallons), of which 189 litres (50 US gallons) are usable; or extra-long-range system, using integral tanks in wings to provide total capacity of 257 litres (68 US gallons), of which 234 litres (62 US gallons) are usable. Oil capacity 7.5 litres (2 US gallons). Oil cooler and full flow oil filter standard.

ACCOMMODATION: Cabin seats four in two pairs, with optional fully articulating front seats. Seat belts and shoulder restraint system on all seats standard. Dual controls standard. Baggage space aft of rear seats, capacity 54 kg (120 lb). An optional foldaway seat can be fitted in baggage space, for one or two children not exceeding 54 kg (120 lb) total weight. Door on each side of cabin, giving access to all seats, simplifies loading if rear seats are removed and cabin used for freight. Pilot's window opens; co-pilot's opening side window optional. Baggage door on port side. Combined heating and ventilation system; air-conditioning optional. Dual windshield defrosters. Glassfibre soundproofing. Overhead skylights and underwing courtesy lights optional.

SYSTEMS: Electrical system includes 28V 60A alternator, electric engine starter and 24V 12-75Ah battery. Heavy duty 24V 15-5Ah battery optional. Air-conditioning system of 14,000 BTU capacity optional. Vacuum system for blind-flying instruments. Standby electrically driven vacuum system optional.

AVIONICS AND EQUIPMENT: Optional avionics include Sperry Series 300 720-channel nav/com with remote VOR/LOC indicator, ADF and transponder. VOR/ILS indicator. Series 400 glideslope receiver, marker beacon receiver, transponder, altitude encoder, SDM-77A DME, intercom, 200A or 300A Nav-O-Matic single-axis autopilot. Standard equipment includes artificial horizon, directional gyro, electric clock, outside air temperature gauge, rate of climb indicator, sensitive altimeter, turn co-ordinator, sun visors, single-cylinder engine priming system, full flow oil filter, and towbar. Optional equipment includes true airspeed indicator, alternate static source, emergency locator transmitter, heated pilot, navigation light detectors, variable-intensity radio light, courtesy lights, and omni-flash beacon. Other optional equipment includes carburettor air tem-

perature gauge, economy mixture indicator, flight hour recorder, quartz clock, all-purpose control wheel, reclining and vertically adjustable front seats, inertia reel shoulder harness, headrests, overhead skylights, starboard side storm window, glareshield, fire extinguisher, rear seats with individual reclining backs, internal corrosion proofing, rear seat ventilation system, tinted windows, ventilation fan, control wheel map light, map and instrument panel lights, wingtip strobe lights, anti-precipitation static kit, floatplane kit, glider tow hook, external power socket, quick drain oil valve, tailplane abrasion boots, wing strut and fuselage steps and handles for refuelling, and winterisation kit.

DIMENSIONS, EXTERNAL (L: landplane; F: floatplane):

Wing span	10.92 m (35 ft 10 in)
Wing chord: at root	1.63 m (5 ft 4 in)
at tip	1.12 m (3 ft 8 1/2 in)
Wing aspect ratio	7.52
Length overall: L	8.20 m (26 ft 11 in)
F	8.13 m (26 ft 8 in)
Height overall: L	2.68 m (8 ft 9 1/2 in)
F	3.63 m (11 ft 11 in)
Tailplane span	3.43 m (11 ft 3 in)
Wheel track: L	2.53 m (8 ft 3 1/2 in)
Wheelbase: L	1.63 m (5 ft 4 in)
Propeller diameter: L	1.91 m (6 ft 3 in)
F	2.03 m (6 ft 8 in)
Passenger doors (each): Height	1.01 m (3 ft 3 1/2 in)
Width	0.89 m (2 ft 11 in)

AREAS:

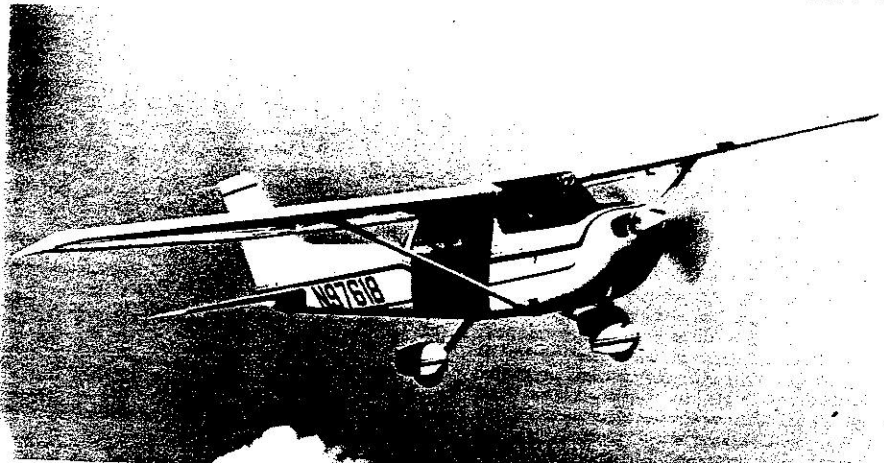
Wings, gross	16.17 m ² (174 sq ft)
Ailerons (total)	1.70 m ² (18.3 sq ft)
Trailing-edge flaps (total)	1.97 m ² (21.20 sq ft)
Fin	1.04 m ² (11.24 sq ft)
Rudder, incl tab	0.69 m ² (7.43 sq ft)
Tailplane	2.00 m ² (21.56 sq ft)
Elevators, incl tab	1.35 m ² (14.53 sq ft)

WEIGHTS AND LOADINGS (L: landplane; F: floatplane):

Weight empty, equipped: L	650 kg (1,433 lb)
F	733 kg (1,615 lb)
Max T-O and landing weight: L	1,089 kg (2,400 lb)
F	1,007 kg (2,220 lb)
Max ramp weight: L	1,092 kg (2,407 lb)
F	1,010 kg (2,227 lb)
Max wing loading: L	67.3 kg/m ² (13.8 lb/sq ft)
F	62.0 kg/m ² (12.7 lb/sq ft)
Max power loading: L	9.15 kg/kW (15.0 lb/hp)
F	8.44 kg/kW (13.9 lb/hp)

PERFORMANCE (L: landplane; F: floatplane, at max T-O weight, ISA):

Never-exceed speed:	L, F 158 knots (292 km/h; 181 mph) IAS
Max level speed at S/L:	L 123 knots (228 km/h; 141 mph)
F	96 knots (178 km/h; 111 mph)
Max cruising speed (75% power):	L at 2,440 m (8,000 ft) 120 knots (222 km/h; 138 mph)
F at 1,220 m (4,000 ft)	95 knots (176 km/h; 109 mph)
Stalling speed, flaps up:	L 51 knots (95 km/h; 59 mph) CAS
F	48 knots (89 km/h; 55 mph) CAS
Stalling speed, flaps down:	L 46 knots (85 km/h; 53 mph)
F	44 knots (82 km/h; 51 mph) CAS
Max rate of climb at S/L: L	213 m (700 ft)/min
F	226 m (740 ft)/min
Service ceiling: L	3,960 m (13,000 ft)
F	4,570 m (15,000 ft)
T-O run: L	272 m (890 ft)
F	427 m (1,400 ft)
T-O to 15 m (50 ft): L	495 m (1,625 ft)
F	658 m (2,160 ft)
Landing from 15 m (50 ft): L	390 m (1,280 ft)
F	410 m (1,345 ft)
Landing run: L	165 m (540 ft)
F	180 m (590 ft)



Cessna Skyhawk four-seat lightplane (Avco Lycoming O-320-D2J engine)

Range, at recommended lean mixture, with allowances for engine start, taxi, T-O, climb and 45 min reserves at 75% power:

max cruising speed:	
L, standard fuel	440 nm (815 km; 506 miles)
F, standard fuel	360 nm (666 km; 414 miles)
L, 62 US gallons fuel	755 nm (1,399 km; 869 miles)
F, 50 US gallons fuel	475 nm (879 km; 546 miles)

Range, allowances as above, but with 45 min reserves at 45% power:

econ cruising speed at 3,050 m (10,000 ft):	
L, standard fuel	520 nm (963 km; 598 miles)
F, standard fuel	435 nm (806 km; 501 miles)
L, 62 US gallons fuel	875 nm (1,620 km; 1,007 miles)
F, 50 US gallons fuel	565 nm (1,046 km; 650 miles)

CESSNA CUTLASS

Manufacture of the Cutlass has ended after completion of 36 aircraft. Full details can be found in the 1984-85 *Jane's*.

CESSNA CUTLASS RG

Announced on 15 August 1979, the Cutlass RG combines the airframe of the Model 172 Skyhawk with the retractable landing gear developed for the Skylane RG. Power is provided by a 134 kW (180 hp) Avco Lycoming O-360-F1A6 flat-four engine, driving a McCauley Type B2D34C220/80VHA-3-5 two-blade constant-speed metal propeller. Two fuel tanks, one in each wing, have a combined capacity of 250 litres (66 US gallons), of which 235 litres (62 US gallons) are usable. Oil capacity is 8.5 litres (2.25 US gallons).

Standard and optional items of avionics and equipment are generally as detailed for the Skyhawk.

A total of 1,150 Cutlass RGs had been sold by 30 June 1985. Production is now suspended.

LANDING GEAR: As for Skylane RG, except mainwheel tyre pressure 4.14-4.69 bars (60-68 lb/sq in); nosewheel tyre pressure 2.76-3.45 bars (40-50 lb/sq in).

DIMENSIONS, EXTERNAL: As for Skyhawk except:

Length overall	8.36 m (27 ft 5 in)
Wheel track	2.59 m (8 ft 6 in)
Propeller diameter	1.93 m (6 ft 4 in)
Propeller ground clearance	0.27 m (10 1/2 in)

WEIGHTS AND LOADINGS:

Weight empty	726 kg (1,600 lb)
Max T-O and landing weight	1,202 kg (2,650 lb)
Max ramp weight	1,206 kg (2,658 lb)
Max wing loading	74.4 kg/m ² (15.2 lb/sq ft)
Max power loading	8.97 kg/kW (14.7 lb/hp)

PERFORMANCE (at max T-O weight, ISA):

Never-exceed speed	164 knots (304 km/h; 189 mph) IAS
Max level speed at S/L	145 knots (269 km/h; 167 mph)
Max cruising speed (75% power) at 2,740 m (9,000 ft)	140 knots (259 km/h; 161 mph)

Stalling speed, power off:

flaps up	54 knots (100 km/h; 62 mph) CAS
flaps down	50 knots (93 km/h; 58 mph) CAS
Max rate of climb at S/L	244 m (800 ft)/min
Service ceiling	5,120 m (16,800 ft)
T-O run	323 m (1,060 ft)
T-O to 15 m (50 ft)	541 m (1,775 ft)
Landing from 15 m (50 ft)	408 m (1,340 ft)
Landing run	191 m (625 ft)

Range with max fuel at max cruising speed, recommended lean mixture, with allowances for engine start, taxi, T-O, climb and 45 min reserves

	720 nm (1,333 km; 828 miles)
Range with max fuel at econ cruising speed, allowances as above	840 nm (1,556 km; 966 miles)

CESSNA SKYLANE

A total of 19,720 Model 182/Skylanes of various models had been built by 30 June 1985, including 169 F 182s built by Reims Aviation. Only the basic Model 182R, to which the following details apply, remained in production in 1985: Type: Four-seat cabin monoplane.

WINGS: Braced high-wing monoplane. Wing section NACA 2412, modified. Incidence at root 0° 47', at tip -2° 50'. Dihedral 1° 44'. Wing structure similar to Skyhawk, except metal-to-metal bonded leading-edge.

FUSELAGE: All-metal semi-monocoque structure.

TAIL UNIT: Cantilever all-metal structure with swept fin and rudder. Trim tab in starboard elevator. Electrically operated elevator trim optional.

LANDING GEAR: Non-retractable tricycle type. Land-O-Matic cantilever main legs, each comprising a one-piece machined conically tapered spring steel tube. Steerable nosewheel with oleo-pneumatic shock absorption. Cessna mainwheels and tyres size 6-00-6 (6-ply rating), pressure 2.90 bars (42 lb/sq in). Cessna nosewheel and tyre size 5-00-5 (6-ply rating), pressure 3.38 bars (49 lb/sq in). Cessna hydraulic disc brakes. Parking brake. Optional wheel fairings.

POWER PLANT: One 171.5 kW (230 hp) Continental O-470-U flat-six engine, driving a McCauley Type C2A34C204/90DCB-8 two-blade constant-speed metal propeller. Standard fuel capacity 348 litres (92 US gallons), of which 333 litres (88 US gallons) are usable. Refuelling point on upper surface of each wing. Oil capacity 11.5 litres (3 US gallons).

ACCOMMODATION: Generally similar to Skyhawk, with standard seating for four; four seat belts and shoulder restraints standard. Optional child's seat. Baggage space aft of rear seats and hatshelf with total capacity of 91 kg (200 lb), with external baggage door. Cargo tiedown net standard. Inertia reel shoulder harnesses, air vent for rear seat passengers, and openable starboard window optional. Dual controls standard. Heating, ventilation and windscreen defrosters standard.

SYSTEMS: Electrical system powered by 28V 60A engine driven alternator. 24V 12.75Ah battery standard, 24V 15.5Ah heavy duty battery optional. Hydraulic system for brakes only. Vacuum system standard. Standby electrically operated vacuum system optional. Oxygen system of 1.36 m³ (48 cu ft) capacity optional.

AVIONICS AND EQUIPMENT: Optional avionics include Series 300 nav/com, 200A and 300A Nav-O-Matic single-axis autopilots, Series 300 VOR/LOC indicator, Series 400 nav/com, ADF, glideslope receiver, marker beacon receiver, transponder, encoding altimeter, SDM-77A DME, area nav system, Series 300 VOR/ILS indicator, altitude encoder and intercom system. Standard equipment in-



Cessna Cutlass RG four-seat lightplane with retractable landing gear

ME
2

directional gyro, outside air temperature gauge, turn co-ordinator, rate of climb indicator, cylinder head temperature gauge, recording tachometer, audible stall warning system, control locks, instrument panel flood and map lights, pilot and co-pilot individual seats with fore and aft adjustment and reclining backs, seat belts, shoulder restraint system, armrests, rear bench seat with individual reclining backs, glareshield, sun visors, map/glove compartment, soundproofing, tinted windows, hinged storm window (port), cabin dome light, navigation lights, landing and taxi lights, full flow oil filter, quick drain fuel valves, priming system, cabin entrance steps, jack pads, towbar and tie-down rings. Optional equipment includes quartz clock, flight hour recorder, true airspeed indicator, all-purpose control wheel, electric trim system, six-cylinder priming system, electroluminescent instrument panel lights, instrument post lights, microphone/headset system, stereo installation, vertically adjustable pilot and co-pilot seats, inertia reel shoulder harness, headrests, cabin fire extinguisher, writing table, co-pilot's storm window, tinted skylights, rear seat ventilation system, corrosion proofing, tailcone lift handles, strobe lights, ice detection light, tailplane abrasion boots, anti-precipitation static kit, refuelling steps and handles, and engine winterisation kit.

DIMENSIONS, EXTERNAL:

Wing span	10.92 m (35 ft 10 in)
Wing chord: at root	1.63 m (5 ft 4 in)
at tip	1.09 m (3 ft 7 in)
Length overall	8.53 m (28 ft 0 in)
Height overall	2.82 m (9 ft 3 in)
Tailplane span	3.55 m (11 ft 8 in)
Wheel track	2.74 m (9 ft 0 in)
Wheelbase	1.69 m (5 ft 6 1/2 in)
Propeller diameter:	
two-blade	2.08 m (6 ft 10 in)
three-blade	2.01 m (6 ft 7 in)
Passenger doors (each): Height	1.02 m (3 ft 4 1/4 in)
Width	0.90 m (2 ft 11 1/4 in)

AREAS:

Wings, gross	16.16 m ² (174 sq ft)
Ailerons (total)	1.70 m ² (18.3 sq ft)
Trailing-edge flaps (total)	1.97 m ² (21.20 sq ft)
Fin	1.08 m ² (11.62 sq ft)
Rudder	0.65 m ² (6.95 sq ft)
Tailplane	2.13 m ² (22.96 sq ft)
Elevators	1.47 m ² (15.85 sq ft)

WEIGHTS AND LOADINGS:

Weight empty, equipped	786 kg (1,733 lb)
Max T-O weight	1,406 kg (3,100 lb)
Max landing weight	1,338 kg (2,950 lb)
Max ramp weight	1,410 kg (3,110 lb)
Max wing loading	86.9 kg/m ² (17.8 lb/sq ft)
Max power loading	8.20 kg/kW (13.5 lb/hp)

PERFORMANCE (at max T-O weight, ISA):

Never-exceed speed 179 knots (332 km/h; 206 mph) IAS

*Max level speed at S/L 146 knots (270 km/h; 168 mph)

*Cruising speed, 75% power at 2,440 m (8,000 ft) 142 knots (263 km/h; 163 mph)

Stalling speed, power off:

flaps up 54 knots (100 km/h; 63 mph) CAS

flaps down 49 knots (91 km/h; 57 mph) CAS

Max rate of climb at S/L 264 m (865 ft)/min

Service ceiling 4,540 m (14,900 ft)

T-O run 245 m (805 ft)

T-O to 15 m (50 ft) 462 m (1,515 ft)

Landing from 15 m (50 ft) 411 m (1,350 ft)

Landing run 180 m (590 ft)

Range with max fuel, recommended lean mixture, with

allowances for start, taxi, T-O, climb and 45 min

reserves at 45% power:

75% power at 2,440 m (8,000 ft):

820 nm (1,519 km; 943 miles)

econ. cruising power at 3,050 m (10,000 ft):

1,025 nm (1,898 km; 1,179 miles)

* With wheel fairings which increase speeds by approximately 3 knots (6 km/h; 3.5 mph)

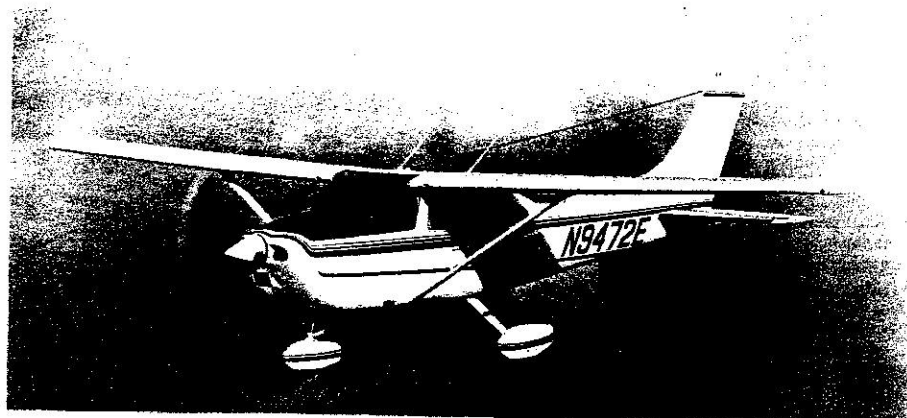
CESSNA SKYLANE RG and TURBO SKYLANE RG

Introduced in late 1977, the retractable landing gear version of the Skylane is available in two models:

Skylane RG. Standard version, powered by Avco Lycoming O-540-J3C5D flat-six engine, derated to 175 kW (235 hp) and driving a McCauley Type B2D34C218/90DHB-8 two-blade or optional three-blade Type B3D32C407/82NDA-3 constant-speed metal propeller with spinner.

Turbo Skylane RG. Generally similar to Skylane RG, but powered by a 175 kW (235 hp) Avco Lycoming O-540-L3C5D flat-six engine with turbocharger, driving a McCauley Type B2D34C219/90DHB-8 two-blade or optional three-blade Type B3D32C407/82NDA-3 constant-speed metal propeller with spinner.

By 30 June 1985 a total of 2,068 Skylane RGs had been built, including 73 assembled by Reims Aviation in France as Reims 182 Skylane RGs.



Cessna Skylane four-seat cabin monoplane (Continental O-470-U engine)

The description of the Cessna Skylane applies also to the Skylane RG and Turbo Skylane RG, except as follows:

LANDING GEAR: Hydraulically retractable tricycle type. Tubular spring steel main-gear struts, retracting rearward into fuselage. Nosewheel, which retracts forward, is carried on a short stroke oleo-pneumatic shock absorber with hydraulic damper, and is steerable. Nosewheel enclosed by doors when retracted. McCauley mainwheels with tubed tyres size 15 x 6-00-6, 6-ply rating, pressure 4-69 bars (68 lb/sq in). Cessna or Cleveland nosewheel with tubed tyre size 5-00-5, 6-ply rated, pressure 3-45 bars (50 lb/sq in). Hydraulic brakes. Parking brake.

POWER PLANT: One Avco Lycoming flat-six engine, as detailed in model listings. Standard fuel capacity 348 litres (92 US gallons), of which 333 litres (88 US gallons) are usable. Refuelling point on upper surface of each wing. Oil capacity 8.5 litres (2.25 US gallons).

SYSTEMS: As described for Skylane, except self-contained electro-hydraulic system for operation of landing gear and brakes, plus optional air-conditioning system for all versions, and anti-icing system for Turbo Skylane RG versions.

AVIONICS: As described for Skylane, except Cessna 400B Nav-O-Matic two-axis autopilot is available optionally for Skylane RG versions. This installation includes elevator electric trim and heavy duty battery, and requires also optional all-purpose control wheel.

DIMENSIONS, EXTERNAL: As for Skylane except:

Length overall	8.72 m (28 ft 7 1/2 in)
Height overall	2.72 m (8 ft 11 in)

WEIGHTS AND LOADINGS (A: Skylane RG; B: Turbo Skylane RG):

Weight empty: A 809 kg (1,784 lb)

B 827 kg (1,824 lb)

Max T-O and landing weight:

both versions 1,406 kg (3,100 lb)

Max ramp weight: both versions 1,412 kg (3,112 lb)

Max wing loading: both versions 86.9 kg/m² (17.8 lb/sq ft)

Max power loading: both versions 8.03 kg/kW (13.2 lb/hp)

PERFORMANCE (at max T-O weight, ISA):
Never-exceed speed:

B 178 knots (330 km/h; 205 mph) IAS

Max level speed at S/L:

A 160 knots (296 km/h; 184 mph)

B 187 knots (346 km/h; 215 mph)

Max cruising speed, 75% power at 2,285 m (7,500 ft):

A 156 knots (289 km/h; 179 mph)

Max cruising speed, 75% power at 6,100 m (20,000 ft):

B 173 knots (320 km/h; 199 mph)

Max cruising speed, 75% power at 3,050 m (10,000 ft):

B 158 knots (293 km/h; 182 mph)

Stalling speed, power off, both versions:

flaps up 54 knots (100 km/h; 62 mph) CAS

flaps down 50 knots (93 km/h; 58 mph) CAS

Max rate of climb at S/L: A 347 m (1,140 ft)/min

B 317 m (1,040 ft)/min

*Service ceiling: A 4,360 m (14,300 ft)

Max certificated operating altitude:

B 6,100 m (20,000 ft)

T-O run: both versions 250 m (820 ft)

T-O to 15 m (50 ft): both versions 479 m (1,570 ft)

Landing from 15 m (50 ft):

both versions 402 m (1,320 ft)

Landing run: both versions 183 m (600 ft)

Range with max fuel, recommended lean mixture, with

allowances for start, taxi, T-O, climb and 45 min

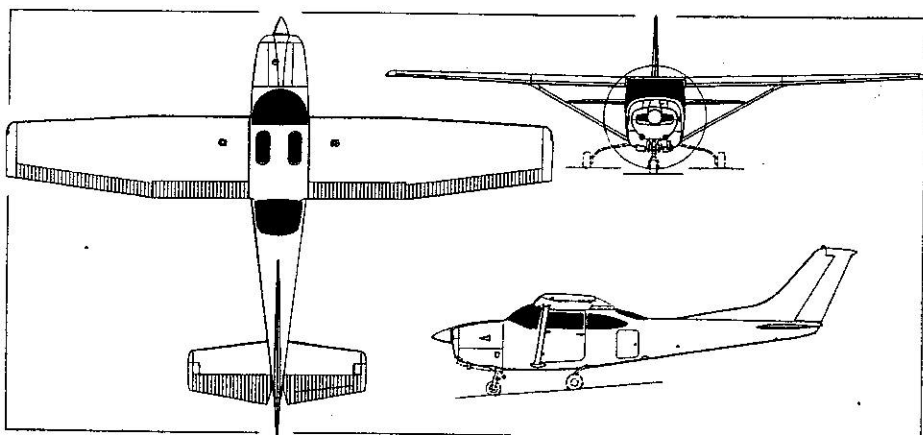
reserves at 45% power:

75% power at 2,285 m (7,500 ft):

A 845 nm (1,565 km; 972 miles)



Cessna Skylane RG, a retractable landing gear version of the Skylane



Cessna Skylane RG with retractable landing gear (Pilot's View)

ME 3

75% power at 6,100 m (20,000 ft):
 B 825 nm (1,528 km; 949 miles)
 75% power at 3,050 m (10,000 ft):
 B 800 nm (1,482 km; 921 miles)
 econ cruising power at 3,050 m (10,000 ft):
 A 1,135 nm (2,102 km; 1,306 miles)
 econ cruising power at 6,100 m (20,000 ft):
 B 1,010 nm (1,871 km; 1,163 miles)
 econ cruising power at 3,050 m (10,000 ft):
 B 1,030 nm (1,908 km; 1,186 miles)
 * Service ceiling is 5,485 m (18,000 ft) if optional EGT gauge is used to set best power mixture

CESSNA MODEL 185 SKYWAGON

The prototype of the Model 185 Skywagon flew for the first time in July 1960 and the first production model was completed in March 1961.

The Skywagon can be fitted with floats or amphibious floats. It is available with photographic provisions. It can carry a detachable underfuselage glassfibre cargo-pack, more than 2.75 m long and 0.79 m wide (9 ft x 2 ft 7 in), with a volume of 0.51 m³ (18.0 cu ft) and capacity of 136 kg (300 lb). The pack incorporates loading doors on the side and at the rear.

The 1985 Model A185F offers a manufacturer's airframe warranty with no limitations on hours flown.

A total of 4,350 Model 185 Skywagons, including 497 military U-17A/B/Cs, had been built by 30 June 1985.

TYPE: One/six-seat cabin monoplane.

WINGS: Braced high-wing monoplane. Wing section NACA 2412 (modified). Dihedral 1° 44'. Incidence 1° 30' at root, -1° 30' at tip. All-metal structure of light alloy, except for conical camber glassfibre wingtips. Conventional two-spar structure with formed sheet metal ribs, doublers and stringers and light alloy skins. Single bracing strut on each side. Modified Frise all-metal ailerons. Manually operated single-slotted trailing-edge flaps of light alloy inboard of ailerons. No trim tabs.

FUSELAGE: Semi-monocoque structure of light alloy, incorporating front and rear carry-through spars to which the wings are attached.

TAIL UNIT: Cantilever structure of light alloy, incorporating a variable incidence tailplane. Rudder trim by bungee. Tailplane abrasion boots optional.

LANDING GEAR: Non-retractable tailwheel type. Cessna cantilever spring steel main legs. Steerable tailwheel carried on tapered tubular steel spring. Mainwheels have tubed nylon tyres size 6-00-6, 6-ply rating, pressure 2.48 bars (36 lb/sq in); optionally, tyres size 8-00-6, 6-ply rating, pressure 1.79 bars (26 lb/sq in). Tailwheel tyre size 8-00 x 2.80, 4-ply rating, pressure 4.14-4.83 bars (60-70 lb/sq in), depending on load. Manual tailwheel lock standard. Hydraulic disc brakes. Parking brake. Wheel and brake fairings optional. Edo Model 597-2790 or Model 628-2960 float installation, or Edo Model 597-2790 amphibious gear optional.

POWER PLANT: One 224 kW (300 hp) Continental IO-520-D flat-six engine, driving a McCauley Type D3A34C403/80VA-0 three-blade constant-speed metal propeller with spinner. Fuel in two tanks in wings, total capacity 333 litres (88 US gallons), of which 318 litres (84 US gallons) are usable. Optional bladder tanks provide a total usable fuel capacity of 208 litres (55 US gallons) or 280 litres (74 US gallons). Refuelling points on wing upper surface. Oil capacity 12.3 litres (3.25 US gallons).

ACCOMMODATION: Standard seating is for a pilot only, with a choice of three optional layouts, each in utility or de luxe form. Maximum seating is for six persons in three pairs. With fewer seats there is space at the rear of the cabin for up to 181 kg (400 lb) of baggage. Seat belts and shoulder restraints standard on all seats. Dual controls standard. Door on each side of cabin. Starboard door has quick-release pins so that it can be removed when loading bulky cargo. Baggage door. Extended baggage door optional, not available for floatplane version. Fifth and

six passenger seats, attached to rear wall of cabin, can be folded when space is required for cargo. Hinged storm window each side. Heating, ventilation and windscreen defroster standard.

SYSTEMS: Electrical system powered by a 28V 60A engine driven alternator. 24V 12-75Ah battery. 24V 15-5Ah heavy duty battery optional. Hydraulic system for brakes only. Vacuum system for instrument gyros standard.

AVIONICS AND EQUIPMENT: Optional avionics include Sperry Series 300 nav/com, ADF, a second Series 300 nav/com, a Series 300 transponder, Series 400 glideslope and marker beacon receivers. Other optional avionics include Series 300 VOR/LOC indicator with ARC, VOR/ILS indicator with ARC, Series 400 nav/com, ADF, transponder, and encoding altimeter, altitude encoder, DME, intercom system, and 200A or 300A Nav-O-Matic single-axis autopilot. Standard equipment includes sensitive altimeter, attitude and directional gyros, cylinder head temperature gauge, recording tachometer, vacuum system warning light, instrument panel lights, control locks, hinged storm windows, fore and aft adjustable pilot's seat with reclining back, seat belt, shoulder restraint system, armrest, galeshield, map and storage pockets, audible stall warning system, baggage net, passenger reading lights, navigation lights, omni-flash beacon, landing and taxi lights, anti-precipitation static wicks, baggage door, external corrosion proofing, and cabin entrance steps. Optional equipment includes electric clock, OAT gauge, vertical speed indicator, turn co-ordinator, doorpost, mounted map light, economy mixture indicator, quick drain oil valve, emergency locator beacon, ground service plug receptacle, pitot heating system, standby electrical vacuum system, flight hour recorder, all-purpose control wheel, co-pilot seat, 3rd/4th/5th/6th seats, inertia reel shoulder harnesses, headrests, instrument post lights, microphone and headset, alternate static source, domed upper windows in cabin doors, lower windows in cabin doors, tinted windows, tinted skylight, cabin fire extinguisher, photographic provisions, cargo pack, navigation light detectors, underwing courtesy lights, strobe lights, engine priming system, oil dilution system, winterisation kit, refuelling steps and handles, tailcone lift handles and jack pad.

DIMENSIONS, EXTERNAL (L: Landplane, F: Floatplane, A: Amphibian):

Wing span	10.92 m (35 ft 10 in)
Wing chord: at root	1.63 m (5 ft 4 in)
at tip	1.12 m (3 ft 8 in)
Wing aspect ratio	7.52
Length overall: L	7.81 m (25 ft 7 1/2 in)
F	8.23 m (27 ft 0 in)
A	8.38 m (27 ft 6 in)
Height overall: L	2.36 m (7 ft 9 in)
F	3.71 m (12 ft 2 in)
A	3.86 m (12 ft 8 in)
Tailplane span	3.35 m (11 ft 0 in)
Wheel track: L	2.26 m (7 ft 5 in)
A	2.39 m (7 ft 10 in)
Wheelbase: L	6.25 m (20 ft 6 in)
A	3.28 m (10 ft 9 in)
Propeller diameter: all versions	2.03 m (6 ft 8 in)
Passenger doors (each):	
Max height	1.04 m (3 ft 5 in)
Max width	0.94 m (3 ft 1 in)

AREAS:	
Wings, gross	16.16 m ² (174 sq ft)
Ailerons (total)	1.70 m ² (18.30 sq ft)
Trailing-edge flaps (total)	1.97 m ² (21.23 sq ft)
Fin	0.84 m ² (9.01 sq ft)
Dorsal fin	0.19 m ² (2.04 sq ft)
Rudder	0.68 m ² (7.29 sq ft)
Tailplane	1.94 m ² (20.94 sq ft)
Elevators (total)	1.40 m ² (15.13 sq ft)

WEIGHTS AND LOADINGS:

Weight empty, equipped: L	783 kg (1,727 lb)
F	920 kg (2,029 lb)
A	1,036 kg (2,283 lb)
Max T-O and landing weight: L	1,519 kg (3,350 lb)
F	1,506 kg (3,320 lb)
A, land take-off	1,481 kg (3,265 lb)
A, water take-off	1,406 kg (3,100 lb)
Max ramp weight: L	1,525 kg (3,362 lb)
F	1,511 kg (3,332 lb)
A	1,486 kg (3,277 lb)
Max wing loading: L	94.2 kg/m ² (19.3 lb/sq ft)
F	93.3 kg/m ² (19.1 lb/sq ft)
A	91.8 kg/m ² (18.8 lb/sq ft)
Max power loading: L	6.78 kg/kW (11.2 lb/hp)
F	6.72 kg/kW (11.1 lb/hp)
A	6.61 kg/kW (10.9 lb/hp)

PERFORMANCE (at max T-O weight, ISA):

Never-exceed speed:	
all versions	184 knots (341 km/h; 212 mph) IAS
Max level speed at S/L:	
*L	154 knots (285 km/h; 177 mph)
F	140 knots (259 km/h; 161 mph)
A	135 knots (249 km/h; 155 mph)
Max cruising speed (75% power) at 2,135 m (7,000 ft):	
*L	147 knots (272 km/h; 169 mph)
F	133 knots (246 km/h; 153 mph)
A	129 knots (240 km/h; 149 mph)
Stalling speed, flaps up, power off:	
L, F	56 knots (104 km/h; 65 mph) CAS
A	55 knots (102 km/h; 63 mph) CAS
Stalling speed, flaps down, power off:	
L	49 knots (91 km/h; 56 mph) CAS
F	52 knots (96 km/h; 60 mph) CAS
A	51 knots (94 km/h; 58 mph) CAS
Max rate of climb at S/L: L	328 m (1,075 ft)/min
F	293 m (960 ft)/min
A	290 m (950 ft)/min
Service ceiling: L	5,455 m (17,900 ft)
F	5,000 m (16,400 ft)
A	4,907 m (16,100 ft)
T-O run: L	251 m (825 ft)
F	436 m (1,430 ft)
A, on land	238 m (780 ft)
A, on water	343 m (1,125 ft)
T-O to 15 m (50 ft): L	436 m (1,430 ft)
F	648 m (2,125 ft)
A, on land	404 m (1,325 ft)
A, on water	521 m (1,710 ft)
Landing from 15 m (50 ft): L	427 m (1,400 ft)
F	477 m (1,565 ft)
A, on land	378 m (1,240 ft)
A, on water	450 m (1,480 ft)
Landing run: L	186 m (610 ft)
F	253 m (830 ft)
A, on land	170 m (557 ft)
A, on water	236 m (775 ft)
Range with max fuel (recommended lean mixture, with allowances for engine start, taxi, T-O, climb and 45 min reserves at 45% power):	
75% power at 2,135 m (7,000 ft):	
L	645 nm (1,196 km; 743 miles)
F	585 nm (1,085 km; 674 miles)
A	570 nm (1,056 km; 656 miles)
econ cruising power at 3,050 m (10,000 ft):	
L	850 nm (1,575 km; 979 miles)
F	745 nm (1,381 km; 858 miles)
A	715 nm (1,324 km; 823 miles)

* These speeds are with optional speed fairings installed

CESSNA AG TRUCK

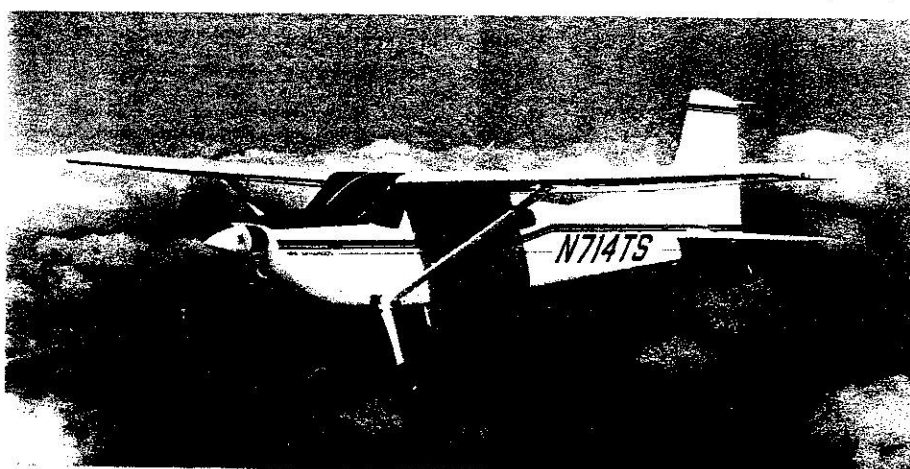
This agricultural aircraft is of all-metal construction and has special corrosion proofing, heavy-duty spring steel Land-O-Matic landing gear and Cessna's Camber-Lift wing to provide better control during low-speed operations. Wing fences are used to smooth airflow over the wing. Special attention has been paid to safety features, and these include ensolite padding on the upper instrument panel, urethane padding on tubular structures in the cabin area and around doors, safe flush switch and control locations and quick-release door hinges. Other standard features include wide wing walks, large hopper loading doors, and fresh air scoops that slightly pressurise the cockpit and tailcone to prevent the ingress of dust and fumes.

By 30 June 1985, sales of the Ag Truck totalled 1,949. Production has been suspended, and the following description is an abbreviated version of the full specification that can be found in the 1984-85 June's.

TYPE: Single-seat agricultural monoplane.

POWER PLANT: One 224 kW (300 hp) Continental IO-520-D flat-six engine, driving a McCauley Type B2A34C205/90DHA-4 two-blade or Type D3A32C408/82NDA-2 three-blade constant-speed metal propeller. Mounting of swing-out type provides easy access to rear of engine for servicing. Two fuel tanks in wings with combined capacity of 204 litres (54 US gallons), of which 197 litres (52 US gallons) are usable. Refuelling points on wing upper surface. Oil capacity 12.3 litres (3.25 US gallons).

ACCOMMODATION: Pilot only, on vertically and longitudinally adjustable seat, in enclosed cabin, with 360° field of



Cessna Model 185 Skywagon one/six-seat cabin monoplane (Continental IO-520-D engine)

view. Steel overturn structure. Combined window and door on each side, hinged at bottom. Ventilation standard. Air-conditioning, heating and windscreen defrosting optional.

EQUIPMENT: Standard equipment includes a 1,060 litre (280 US gallon) hopper with shatter-resistant window, a 22-nozzle engine driven hydraulic spray system and manually controlled spray valve and gatebox without agitator, hopper side loading system on port side, pilot's four-way adjustable seat, control stick lock, wire cutters, cable deflector, navigation lights, tailcone lift handles, quick drain oil valve, remote fuel strainer drain control, and auxiliary fuel pump. Optional equipment includes cylinder head temperature and outside air temperature gauges, turn and bank indicator, turn co-ordinator, pilot's vertically adjustable and reclining seat, inertia reel shoulder/seat belt system, instrument panel and hopper lights, fire extinguisher, omni-flash beacon, strobe lights, automatic Flagman which also requires optional control stick grip incorporating lighting and control switches, hub caps, tow lugs, hopper shut-off valve, quick loading valve for starboard side, 44- or 64-nozzle boom system, streamline boom system, gatebox with fan driven agitator, spraypump strainer, electric or manual Transland spray valve, and slimline spreader. Optional package to provide brilliant illumination for night operations comprises a 24V 95A alternator, instrument panel lights, overhead floodlight, two 600W retractable spray lights, lighting angle control for spray lights, wingtip turning lights, hopper quantity light and omni-flash beacon. An optional control stick grip incorporating light switches is required for this installation.

DIMENSIONS, EXTERNAL:

Wing span	12.70 m (41 ft 8 in)
Wing chord: at root	1.63 m (5 ft 4 in)
at tip	1.12 m (3 ft 8 in)
Length overall	7.90 m (25 ft 11 in)
Height overall	2.49 m (8 ft 2 in)
Tailplane span	3.35 m (11 ft 0 in)
Wheel track	2.16 m (7 ft 1 in)
Wheelbase	6.12 m (20 ft 1 in)
Propeller diameter: two-blade	2.18 m (7 ft 2 in)
three-blade (optional)	2.03 m (6 ft 8 in)

AREA:

Wings, gross	19.05 m ² (205 sq ft)
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WEIGHTS AND LOADINGS:

Weight empty, with liquid dispersal system gatebox and engine driven hydraulic pump	1,014 kg (2,236 lb)
T-O weight, Normal category	1,496 kg (3,300 lb)
Max T-O weight, Restricted category	1,905 kg (4,200 lb)
Max landing weight	1,496 kg (3,300 lb)

Wing loading, Normal category	78.6 kg/m ² (16.1 lb/sq ft)
Max wing loading, Restricted category	100.0 kg/m ² (20.5 lb/sq ft)

Power loading, Normal category	6.68 kg/kW (11.0 lb/hp)
Max power loading, Restricted category	8.50 kg/kW (14.0 lb/hp)

PERFORMANCE (at max T-O weight, ISA, with liquid dispersal equipment):	
Max level speed at S/L	106 knots (196 km/h; 122 mph)

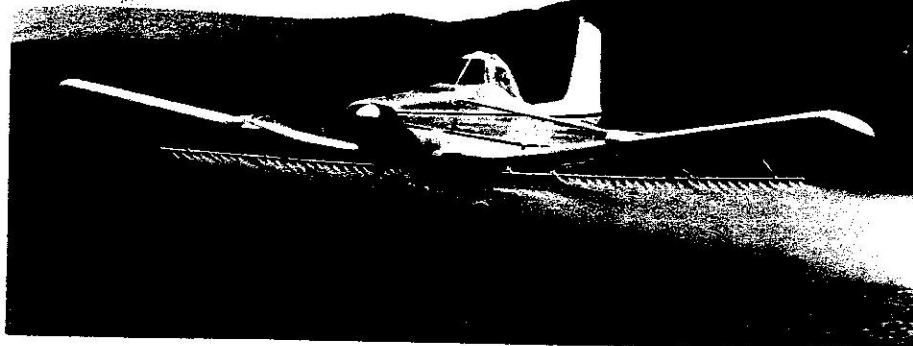
Max cruising speed, 75% power at 1,980 m (6,500 ft)	101 knots (187 km/h; 116 mph)
Stalling speed, power off:	

flaps up	60 knots (111 km/h; 69 mph) CAS
flaps down	56 knots (104 km/h; 65 mph) CAS

Max rate of climb at S/L	142 m (465 ft)/min
Service ceiling	2,375 m (7,800 ft)

T-O run	430 m (1,410 ft)
T-O to 15 m (50 ft)	686 m (2,250 ft)

Landing from 15 m (50 ft)	386 m (1,265 ft)
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Cessna Ag Truck agricultural monoplane (Continental IO-520-D flat-six engine)

Landing run	128 m (420 ft)
Range, max fuel, 75% power at 1,980 m (6,500 ft), recommended lean mixture, allowances for engine start, taxi, T-O, climb, and 30 min reserves at 45% power	252 nm (466 km; 290 miles)

Range with max fuel, 75% power at 1,980 m (6,500 ft), recommended lean mixture, allowances for engine start, taxi, T-O, climb, and 30 min reserves at 45% power	217 nm (402 km; 250 miles)
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CESSNA AG HUSKY

Cessna introduced the Ag Husky agricultural aircraft in 1979. It is a turbocharged version of the Ag Truck, the 231 kW (310 hp) engine providing improved performance at varying operational altitudes.

By 30 June 1985 a total of 385 Ag Husky aircraft had been delivered. Production had been suspended in that year.

The description of the Ag Truck applies also to the Ag Husky, except as follows:

POWER PLANT: One 231 kW (310 hp) Continental TSIO-520-T turbocharged flat-six engine, driving a McCauley Type D3A34C402/90DFA-10 three-blade constant-speed metal propeller with spinner.

EQUIPMENT: Generally as for Ag Truck, but the following items are supplied as standard equipment on the Ag Husky: cylinder head and outside air temperature gauges, instrument panel lights, hopper shut-off valve, omni-flash beacon, hub caps and jack pads.

DIMENSIONS, EXTERNAL: As for Ag Truck, except:

Length overall	8.08 m (26 ft 6 in)
Propeller diameter	2.03 m (6 ft 8 in)

WEIGHTS AND LOADINGS:

Weight empty, liquid dispersal system installed	1,046 kg (2,306 lb)
Max T-O weight, Restricted category	1,996 kg (4,400 lb)

Max landing weight	1,497 kg (3,300 lb)
Max wing loading	104.78 kg/m ² (21.5 lb/sq ft)

Max power loading	8.64 kg/kW (14.2 lb/hp)
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PERFORMANCE (at max T-O weight, ISA):	
Max level speed at S/L 113 knots (209 km/h; 130 mph)	

Max cruising speed, 75% power at 1,980 m (6,500 ft)	106 knots (196 km/h; 122 mph)
Stalling speed, power off:	

flaps up	62 knots (114 km/h; 71 mph) CAS
flaps down	58 knots (108 km/h; 67 mph) CAS

Max rate of climb at S/L	155 m (510 ft)/min
Max certificated operating altitude	4,265 m (14,000 ft)

T-O run	393 m (1,290 ft)
T-O to 15 m (50 ft)	628 m (2,060 ft)

Landing from 15 m (50 ft)	386 m (1,265 ft)
Landing run	128 m (420 ft)

CESSNA STATIONAIR 6 and TURBO STATIONAIR 6

Cessna first renamed the former U206 Skywagon and TU206 Turbo Skywagon as the Stationair and Turbo Stationair respectively. In 1978 a further name change to Stationair 6 and Turbo Stationair 6 highlighted the six-seat capacity of these cargo/utility aircraft. Among their important features are double cargo doors on the starboard side of the fuselage which permit the easy loading and unloading of a crate more than 1.22 m long, 0.91 m wide and 0.91 m deep (4 ft × 3 ft × 3 ft). Differences between the two versions are as follows:

Stationair 6. Standard cargo utility model with 224 kW (300 hp) Continental IO-520-F engine, as described in detail.

Turbo Stationair 6. Similar to the Stationair 6 but with 231 kW (310 hp) Continental TSIO-520-M turbo-charged engine in modified cowl and with a manifold pressure relief valve to prevent overboost.

A 'Value Group A' package of optional avionics and equipment is available for both versions of the Stationair 6 and includes a basic avionics kit, Series 300 nav/com, ADF, transponder, 200A Nav-O-Matic single-axis autopilot, emergency locator transmitter, true air speed and economy mixture indicators, pilot's all-purpose control wheel, radio lights, alternate static source, underwing courtesy lights, heated pitot and stall warning transmitter, navigation light detectors and external power socket. The package for the Turbo Stationair 6 includes a Series 400 instead of a Series 300 transponder. An optional 'Value Group B' package adds a second Series 300 nav/com and Series 400 glideslope and marker beacon receivers.

Current models are known by factory designations **U206G** and **TU206G**.

A total of 7,526 Model 206 Skywagons and Stationairs had been built by 30 June 1985, including 643 de Luxe Super Skylanes of similar basic design.

TYPE: Single-engined cargo/utility aircraft.

WINGS: Braced high-wing monoplane. Single streamlined-section bracing strut each side. Wing section NACA 2412, modified. Dihedral 2° 14'. Incidence 1° 30' at root, -1° 30' at tip. All-metal structure. Glassfibre conical camber wingtips. Modified Frise wide chord ailerons. Electrically operated wide span NACA single-slotted flaps. No tabs.

FUSELAGE: Conventional all-metal semi-monocoque structure. **TAIL UNIT:** Cantilever all-metal structure, with sweptback vertical surfaces. Large trim tab in starboard elevator. Electrical operation of trim tab optional.

LANDING GEAR: Non-retractable tricycle type. Cessna Land-O-Matic cantilever spring steel main legs. Steerable nosewheel with oleo-pneumatic shock absorber. Cessna wheels, tubeless tyres and hydraulic disc brakes. Parking brake. Mainwheels and tyres size 6-00-6, 6-ply rating, pressure 2.90 bars (42 lb/sq in); oversize tyres optional, size 8-00-6, 6-ply rating, pressure 2.41 bars (35 lb/sq in). Nosewheel and tyre size 5-00-5, 6-ply rating, pressure 3.38 bars (49 lb/sq in); oversize tyre optional, size 6-00-6, 4-ply rating, pressure 2.0 bars (29 lb/sq in). Oversize wheel fairings optional. Floats optional. The Turbo Stationair 6 is also available optionally with amphibious landing gear.

POWER PLANT: One Continental flat-six engine (details given under model listings), driving a McCauley three-blade constant-speed metal propeller type D3A34C404/80VA-0 (Stationair) or D3A34C402/90DFA-10 (Turbo Stationair). Two fuel cells in wings, with total standard capacity of 348 litres (92 US gallons), of which 333 litres (88 US gallons) are usable. Oil capacity 12.3 litres (3.25 US gallons). Propeller anti-icing system optional.



Cessna Ag Husky, a turbocharged version of the extensively built Ag Truck

ACCOMMODATION: Standard seating for pilot, co-pilot and up to four passengers, all seats with belts and shoulder restraints. Club seating arrangement optional, with centre row of seats facing aft. Utility version has only pilot's seat as standard. Pilot's door on port side. Large double cargo doors on starboard side; forward door hinged to open forward, rear door hinged to open rearward. Aircraft can be flown with cargo doors removed for photography, airdropping of supplies or parachuting. Openable starboard window optional. Fully articulating seats, and inertia reel safety harness, for pilot and co-pilot optional. Cabin heated and ventilated. Electric anti-icing of pilot's windscreen optional.

SYSTEMS: Electrical system powered by an engine driven 28V 60A alternator. 24V 12-75Ah battery. 28V 95A alternator and 24V 15-5Ah heavy duty battery optional. Hydraulic system for brakes and optional wheel-skis. Oxygen system of 2.15 m³ (76 cu ft) optional for Turbo Stationair 6. Vacuum system standard.

AVIONICS AND EQUIPMENT: Optional avionics as detailed for the Skylane and Skylane II, plus Sperry 400B Nav-O-Matic two-axis autopilot, and Primus 100, and Bendix RDR-160 colour or monochrome weather radar. Standard equipment as detailed for Skylane, with an omni-flash beacon added. Standard equipment for the Turbo Stationair 6 (optional for Stationair 6) includes an economy mixture indicator, all-purpose control wheel, alternate static source, variable intensity map light, and provisions for optional oxygen system. Optional equipment for both versions includes items detailed in 'Group A' and 'Group B' packages, plus quartz clock, Astrotech clock/fuel computer, combustion analyser, flight hour recorder, instrument post lights, electroluminescent instrument lights, vertically adjustable and reclining pilot and co-pilot seats, inertia reel harnesses, armrests, headrests, refreshment centre, rear window curtains, starboard storm window, cabin fire extinguisher, stereo installation and headsets, microphone/headset system, electric elevator trim, stowable rudder pedals for starboard side, photographic provisions, cargo pack, corrosion proofing, ice detection light, strobe lights, anti-precipitation static kit, tailplane abrasion boots, refuelling steps and handles, engine priming system and quick drain oil valve. An engine winterisation kit is available only for the Stationair 6.

DIMENSIONS, EXTERNAL (L: landplane; F: floatplane; A: Turbo Stationair 6 amphibian):

Wing span	10-92 m (35 ft 10 in)
Wing chord: at root	1-63 m (5 ft 4 in)
at tip	1-09 m (3 ft 7 in)
Wing aspect ratio	7-04
Length overall: L	8-61 m (28 ft 3 in)
F	9-04 m (29 ft 8 in)
A	8-97 m (29 ft 5 in)
Height overall: L	2-83 m (9 ft 3 1/2 in)
F	4-31 m (14 ft 1 1/2 in)
A	3-82 m (12 ft 6 1/2 in)
Tailplane span	3-96 m (13 ft 0 in)
Wheel track: L	2-46 m (8 ft 1 in)
Wheelbase: L	1-76 m (5 ft 9 1/4 in)
Propeller diameter	2-03 m (6 ft 8 in)
Pilot's door (port):	
Max height	1-04 m (3 ft 5 in)
Max width	0-94 m (3 ft 1 in)
Cargo double door (stbd):	
Max height	1-00 m (3 ft 3 1/4 in)
Max width	1-09 m (3 ft 7 in)
Height to sill	0-64 m (2 ft 1 in)

DIMENSIONS, INTERNAL:

Cabin: Length	3-66 m (12 ft 0 in)
Max width	1-12 m (3 ft 8 in)
Max height	1-26 m (4 ft 1 1/2 in)
Volume available for payload	2-87 m ³ (101-2 cu ft)

AREAS:

Wings, gross	16-17 m ² (174-0 sq ft)
Ailerons (total)	1-60 m ² (17-32 sq ft)
Trailing-edge flaps (total)	2-63 m ² (28-35 sq ft)
Fin	1-08 m ² (11-62 sq ft)
Rudder, incl tab	0-65 m ² (6-95 sq ft)
Tailplane	2-31 m ² (24-84 sq ft)
Elevators, incl tab	1-86 m ² (20-08 sq ft)

WEIGHTS AND LOADINGS (L: landplane; F: floatplane; A: Turbo Stationair 6 amphibian):

Weight empty: Stationair 6: L	883 kg (1,946 lb)
F	1,037 kg (2,286 lb)
Turbo Stationair 6: L	919 kg (2,027 lb)
F	1,073 kg (2,365 lb)
A	1,205 kg (2,657 lb)
Max T-O and landing weight:	
Stationair 6: L	1,633 kg (3,600 lb)
F	1,587 kg (3,500 lb)
Turbo Stationair 6: L, F, A	1,633 kg (3,600 lb)
Max ramp weight:	
Stationair 6: L	1,638 kg (3,612 lb)
F	1,593 kg (3,512 lb)
Turbo Stationair 6: L, F, A	1,640 kg (3,616 lb)
Max wing loading:	
Stationair 6: L	101-1 kg/m ² (20-7 lb/sq ft)
F	98-1 kg/m ² (20-1 lb/sq ft)



Cessna Stationair 6 one/six-seat cargo/utility aircraft

Turbo Stationair 6:		F, A water	258 m (845 ft)
L, F, A	101-1 kg/m ² (20-7 lb/sq ft)	A land	229 m (750 ft)
Max power loading:		Range, Stationair 6, recommended lean mixture, with allowances for start, taxi, T-O, climb, and 45 min reserves at 45% power:	
Stationair 6: L	7-29 kg/kW (12-0 lb/hp)	max cruising speed at 1,980 m (6,500 ft) with max fuel:	
F	7-08 kg/kW (11-7 lb/hp)	L	680 nm (1,259 km; 782 miles)
Turbo Stationair 6:		F	615 nm (1,139 km; 707 miles)
L, F, A	7-07 kg/kW (11-6 lb/hp)	econ cruising speed at 3,050 m (10,000 ft) with max fuel: L	900 nm (1,666 km; 1,035 miles)
PERFORMANCE (at max T-O weight, ISA; L: landplane; F: floatplane; A: amphibian):		F	770 nm (1,426 km; 886 miles)
Never-exceed speed:		Range, Turbo Stationair 6, allowances and reserves as above:	
all models	183 knots (339 km/h; 211 mph) IAS	max cruising speed at 6,100 m (20,000 ft) with max fuel:	
Max level speed:		L	640 nm (1,185 km; 736 miles)
Stationair 6 at S/L:		F	550 nm (1,018 km; 633 miles)
L	156 knots (289 km/h; 179 mph)	A	530 nm (981 km; 610 miles)
F	138 knots (255 km/h; 159 mph)	max cruising speed at 3,050 m (10,000 ft) with max fuel:	
Turbo Stationair 6 at 5,180 m (17,000 ft):		L	610 nm (1,129 km; 702 miles)
L	174 knots (322 km/h; 200 mph)	F	535 nm (991 km; 615 miles)
F	155 knots (287 km/h; 178 mph)	A	515 nm (953 km; 592 miles)
A	150 knots (278 km/h; 172 mph)	econ cruising speed at 6,100 m (20,000 ft) with max fuel: L	775 nm (1,435 km; 892 miles)
Max cruising speed (75% power):		F	660 nm (1,222 km; 759 miles)
Stationair 6 at 1,980 m (6,500 ft):		A	630 nm (1,166 km; 725 miles)
L	147 knots (272 km/h; 169 mph)	econ cruising speed at 3,050 m (10,000 ft) with max fuel: L	805 nm (1,491 km; 926 miles)
F	132 knots (244 km/h; 152 mph)	F	690 nm (1,278 km; 794 miles)
Turbo Stationair 6, 80% power at 6,100 m (20,000 ft):		A	660 nm (1,222 km; 759 miles)
L	167 knots (309 km/h; 192 mph)		
F	147 knots (272 km/h; 169 mph)		
A	141 knots (261 km/h; 162 mph)		
Turbo Stationair 6, 80% power at 3,050 m (10,000 ft):			
L	152 knots (282 km/h; 175 mph)		
F	135 knots (250 km/h; 155 mph)		
A	130 knots (240 km/h; 149 mph)		
Stalling speed, flaps up, power off:			
Stationair 6: L	62 knots (115 km/h; 72 mph) CAS		
F	56 knots (104 km/h; 65 mph) CAS		
Turbo Stationair 6:			
L	62 knots (115 km/h; 72 mph) CAS		
F, A	57 knots (106 km/h; 66 mph) CAS		
Stalling speed, flaps down, power off:			
Stationair 6: L	54 knots (101 km/h; 63 mph) CAS		
F	51 knots (95 km/h; 59 mph) CAS		
Turbo Stationair 6:			
L	54 knots (101 km/h; 63 mph) CAS		
F, A	52 knots (97 km/h; 60 mph) CAS		
Max rate of climb at S/L:			
Stationair 6: L	280 m (920 ft)/min		
F	282 m (925 ft)/min		
Turbo Stationair 6: L	308 m (1,010 ft)/min		
F	255 m (835 ft)/min		
A	247 m (810 ft)/min		
Service ceiling:			
Stationair 6: L	4,511 m (14,800 ft)		
F	4,237 m (13,900 ft)		
Turbo Stationair 6: L	8,230 m (27,000 ft)		
F	7,800 m (25,600 ft)		
A	7,650 m (25,100 ft)		
T-O run:			
Stationair 6: L	274 m (900 ft)		
F	559 m (1,835 ft)		
Turbo Stationair 6: L	255 m (835 ft)		
F, A water	552 m (1,810 ft)		
A land	288 m (945 ft)		
T-O to 15 m (50 ft):			
Stationair 6: L	543 m (1,780 ft)		
F	860 m (2,820 ft)		
Turbo Stationair 6: L	500 m (1,640 ft)		
F, A water	850 m (2,790 ft)		
A land	561 m (1,840 ft)		
Landing from 15 m (50 ft):			
Stationair 6: L	425 m (1,395 ft)		
F	511 m (1,675 ft)		
Turbo Stationair 6: L	425 m (1,395 ft)		
F, A water	533 m (1,750 ft)		
A land	430 m (1,410 ft)		
Landing run:			
Stationair 6: L	224 m (735 ft)		
F	238 m (780 ft)		
Turbo Stationair 6: L	224 m (735 ft)		

CESSNA STATIONAIR 8 and TURBO STATIONAIR 8

By 30 June 1985 production of Stationair 8s and Turbo Stationair 8s totalled 225. Production has ended, and full details of these aircraft can be found in the 1984-85 *Jane's*.

CESSNA MODEL 208 CARAVAN I

First flown on 9 December 1982, the engineering prototype of the Caravan I (N208LP) bore little resemblance to any previous Cessna design. The aircraft is claimed by the company to be the first all-new single-engine turboprop general aviation aircraft, and is intended to supplement or replace the thousands of de Havilland Canada Beavers and Otters, and Cessna 180s, 185s and 206s, now operated throughout the world in a variety of utility roles.

A basic ability to fly fast with a heavy load, to get into and out of unprepared airstrips, and to offer economy and reliability with minimum maintenance, can be extended by the addition of weather radar, air-conditioning, and oxygen systems. Other projected packages of optional equipment will enable the Caravan I to perform aerial firefighting, photographic, agricultural spraying, ambulance/hearse, border patrol, parachuting and supply dropping, surveillance, and a variety of government utility duties, on wheels, floats and skis. Such versatility is expected to attract orders from armed services, as well as from civilian operators.

In December 1983 Federal Express Corporation of Memphis, Tennessee, placed an order for 30 Model 208A Caravans, with options on a further 70.

The first production Caravan I was rolled out in August 1984. FAA certification was obtained on 23 October, in landplane configuration, with full production beginning in 1985. Twenty-three had been built by 30 June 1985, at which time certification of the floatplane version was imminent.

By early March 1985 the first two aircraft were in service with Federal Express, and the first (N800FE) had flown some 40 hours. The Federal Express Model 208As differ from the standard aircraft in having a King avionics installation, no cabin windows or starboard side rear door, more freight tie-downs, an additional cargo net, an under-fuselage cargo pannier constructed from composites materials, a 15-2 cm (6 in) vertical extension to the fin/rudder, realigned exhaust outlet to keep exhaust gases clear of the pannier, and a max T-O weight of 3,629 kg (8,000 lb). Deliveries to Federal Express were expected to continue during 1985 at the rate of three per month.

In the Spring of 1985 Cessna released brief details of a

proposed military derivative of the Caravan with the factory designation U-27A. This aircraft would be similar to the civil model, but with increased ramp, T-O and landing weights, and is intended for troop transport, medevac, cargo, VIP and forward air control roles.

The name Caravan II applies to an unrelated twin-turboprop business and utility transport aircraft, developed jointly by Cessna and Reims Aviation of France and described under the latter company's entry. The following description applies to Cessna's single-engined Caravan I: TYPE: Single-engined turboprop utility aircraft.

WINGS: Braced high-wing monoplane, with constant chord inner panels and tapered outer panels. Wing section NACA 23017.424 at root, NACA 23012 at tip. Dihedral 3° from roots. Incidence 2° 37' at root, -0° 36' at tip. Fail-safe two-spar structure. Single streamline section bracing strut each side. Electrically actuated wide span single-slotted flaps occupy more than 70 per cent of wing trailing-edge, and extend to 30° setting for low landing speeds. Ailerons operate in conjunction with slot-lip spoilers for positive roll control. Aileron trim standard.

FUSELAGE: Conventional semi-monocoque structure.

TAIL UNIT: Cantilever structure, with long dorsal fin. All control surfaces horn balanced. Large trim tab in starboard elevator. Rudder trim standard.

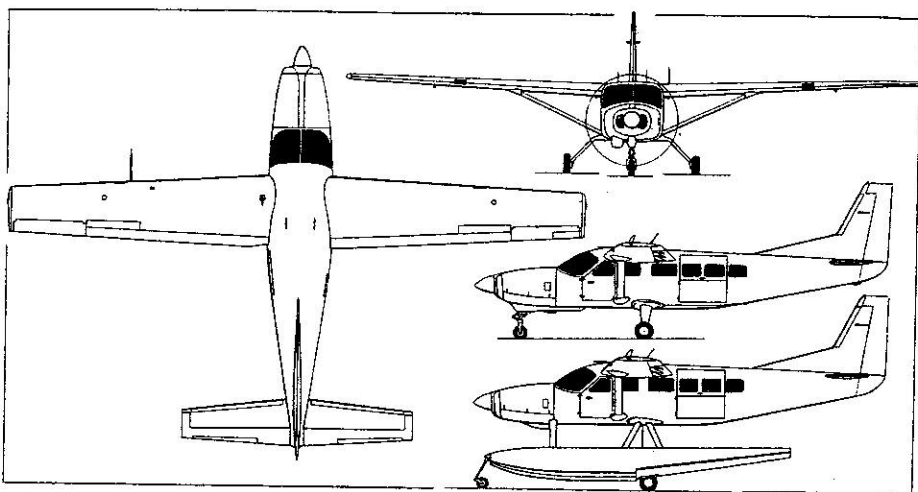
LANDING GEAR: Non-retractable tricycle type, with single wheel on each unit. Tubular spring cantilever main units; oil-damped spring nosewheel unit. Mainwheel tyres size 6-50-10; nosewheel 6-50-8. Oversize tyres, mainwheels 8-50-10, nosewheel 22 × 8-00-8, optional. Hydraulically actuated single-disc brake on each mainwheel. To be certificated in floatplane and amphibian versions, with floats by Wipline, and with ski landing gear.

POWER PLANT: One Pratt & Whitney Canada PT6A-114 turboprop engine, flat rated at 447 kW (600 shp) to 3,800 m (12,500 ft), and driving a Hartzell three-blade constant-speed reversible-pitch and feathering composites propeller type HC-B3MN3/M10083 with spinner. Integral fuel tanks in wings, total capacity 1,268 litres (335 US gallons), of which 1,257 litres (332 US gallons) are usable.

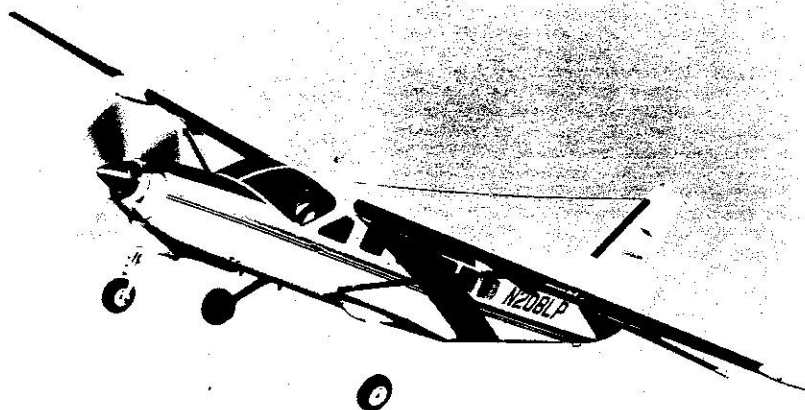
ACCOMMODATION: Pilot and up to nine passengers or equivalent cargo. Maximum seating capacity with FAR Pt 23 waiver is 14. Cabin has a flat floor with attachments for a combination of two- and three-abreast seating, with an aisle between the seats. Forward hinged door for pilot, with direct vision window, on each side of forward fuselage. Airstair door for passengers at rear of cabin on starboard side. Cabin is heated and ventilated. Freon air-conditioning system was expected to be certificated in late 1985. Two-section horizontally split cargo door at rear of cabin on port side, flush with floor at bottom and with square corners. Upper portion hinges upward, lower portion forward 180°. In a cargo role cabin will accommodate typically two D-size cargo containers or up to ten 208 litre (55 US gallon) drums.

SYSTEMS: Electrical system is powered by 28V 200A starter/generator and 24V 45Ah lead-acid battery (24V 40Ah nickel-cadmium battery optional). Standby electrical system, with 95A alternator, optional. Hydraulic system for brakes only. Oxygen system, capacity 3.31 m³ (116.95 cu ft), optional. Vacuum system standard. Cabin air-conditioning system optional (undergoing certification 1985). De-icing system, comprising electric propeller de-icing boots, pneumatic wing, wing strut and tail surface boots, electric heated windshield panel, heated pitot/static probe, ice detector light and standby electrical system, all optional.

AVIONICS AND EQUIPMENT: Standard avionics include Sperry Series 300 nav/com, ADF, transponder and audio console/intercom. Optional avionics include Sperry Series 400, with autopilot and area navigation system, King Silver Crown Basic and IFR avionics packages and Bendix RDS-82 colour weather radar, pod mounted on starboard wing leading-edge. Standard equipment includes sensitive altimeter, electric clock, magnetic compass, attitude and directional gyros, true airspeed indicator, turn and bank indicator, vertical speed indicator, ammeter/voltmeter, fuel flow indicator, FTT indicator, oil pressure and temperature indicator, windscreen defrost, ground service plug receptacle, variable intensity instrument post lighting, map light, overhead courtesy lights (3) and overhead floodlights (pilot and co-pilot), approach plate holder, cargo tie-downs, internal corrosion proofing, vinyl floor covering, emergency locator beacon, partial plumbing for oxygen system, adjustable fore/aft/vertical/reclining pilot's seat with seatbelt and dual inertia reel shoulder restraints, tinted windows, control surface bonding straps, heated pitot and stall warning systems, retractable crew steps (port side), tie-downs and towbar. Optional equipment includes digital clock, fuel totaliser, turn co-ordinator, flight hour recorder, fire extinguisher, dual controls, co-pilot flight instruments, floatplane kit, hoisting rings (for floatplane), inboard fuel filling provisions (included in floatplane kit), ice detection light, courtesy lights on wing leading-edge, passenger reading lights, omniflash beacon, rudder gust lock, retractable crew step for starboard side, oversized tyres, electric trim system, oil quick drain valve and fan driven ventilation system.



Cessna Caravan I landplane, with additional, lower, side view of amphibious version (Pilot Press)



The turboprop powered Cessna Caravan I utility Aircraft

DIMENSIONS, EXTERNAL:

Wing span	15.88 m (52 ft 1 in)
Wing chord: at root	1.98 m (6 ft 6 in)
at tip	1.22 m (4 ft 0 in)
Wing aspect ratio	9.61
Length overall	11.46 m (37 ft 7 in)
Height overall	4.32 m (14 ft 2 in)
Tailplane span	6.25 m (20 ft 6 in)
Wheel track	3.56 m (11 ft 8 in)
Wheelbase	3.54 m (11 ft 7 1/2 in)
Propeller diameter	2.54 m (8 ft 4 in)
Airstair door: Height	1.27 m (4 ft 2 in)
Width	0.61 m (2 ft 0 in)
Cargo door: Height	1.27 m (4 ft 2 in)
Width	1.24 m (4 ft 1 in)

DIMENSIONS, INTERNAL:

Cabin: Length, excl baggage area	4.57 m (15 ft 0 in)
Max width	1.57 m (5 ft 2 in)
Max height	1.30 m (4 ft 3 in)
Volume	9.66 m ³ (341 cu ft)

AREA:

Wings, gross	25.96 m ² (279.4 sq ft)
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WEIGHTS AND LOADINGS:

Weight empty	1,724 kg (3,800 lb)
Max baggage	147 kg (325 lb)
Max fuel	1,009 kg (2,224 lb)
Max ramp weight	3,327 kg (7,335 lb)
Max T-O and landing weight and max zero-fuel weight	3,311 kg (7,300 lb)
Max wing loading	127.4 kg/m ² (26.1 lb/sq ft)
Max power loading	7.41 kg/kW (12.2 lb/shp)

PERFORMANCE:

Max operating speed	175 knots (325 km/h; 202 mph) IAS
Max cruising speed at 3,050 m (10,000 ft)	184 knots (341 km/h; 212 mph)
Stalling speed, power off:	
flaps up	73 knots (135 km/h; 84 mph) CAS
flaps down	60 knots (111 km/h; 69 mph) CAS
Max rate of climb at S/L	370 m (1,215 ft)/min
Service ceiling	8,410 m (27,600 ft)
Max operating altitude	9,145 m (30,000 ft)
T-O run	296 m (970 ft)
T-O to 15 m (50 ft)	507 m (1,665 ft)
Landing from 15 m (50 ft)	472 m (1,550 ft)

Landing run	197 m (645 ft)
Range with max fuel, at max cruise power, allowances for start, taxi, T-O, climb, descent and 45 min reserves: at 3,050 m (10,000 ft)	970 nm (1,797 km; 1,117 miles)
at 6,100 m (20,000 ft)	1,275 nm (2,362 km; 1,468 miles)
Range with max fuel, at max range power, allowances as above: at 3,050 m (10,000 ft)	1,115 nm (2,066 km; 1,284 miles)
at 6,100 m (20,000 ft)	1,370 nm (2,539 km; 1,578 miles)

CESSNA CENTURION and TURBO CENTURION

The original prototype Model 210 (now Centurion), which flew in January 1957, followed the general formula of the Cessna series of all-metal high-wing monoplanes, but was the first to have a retractable tricycle landing gear.

Later versions of the Model 210/Centurion have a fully-cantilever wing, eliminating the bracing struts used on earlier models. Their design was started on 24 October 1964 and construction of a prototype began on 29 November 1964. The first T210 (now Turbo Centurion) with the new wing flew on 18 June 1965. A Pressurised Centurion was introduced in late 1977.

In late 1984 Cessna introduced a range of Centurions featuring a new tailplane design of increased span and higher aspect ratio for greater pitch stability, elevator authority and reduced trim changes during flap deployment or retraction; restyled wingtips; optional 56.75 litre (15 US gallon) fuel tanks in the outer wings, new engine cowlings, new nosewheel landing gear doors with overlapping skins, optional electrically driven backup vacuum system, improved optional electric trim system, and custom made instrument panels. Three models are currently available, known by the factory designation **Model 210R**:

Centurion. Standard model, with 224 kW (300 hp) Teledyne Continental IO-520-L flat-six engine, driving a McCauley D3A34C404/80VA-0 three-blade constant-speed metal propeller with spinner.

Turbo Centurion. Generally similar to Centurion, but powered by a 243.3 kW (325 hp) Teledyne Continental TSIO-520-CE turbocharged engine, driving a McCauley

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D3A36C410/80VMB-0 three-blade constant-speed metal propeller with spinner. This engine features two single-stage intercoolers installed on the upper starboard side of the engine, with an exhaust system which matches the exhaust gas paths to the turbo inlet from the left and right hand cylinder banks. A Poly-V alternator drive belt is used on the rear alternator, and the engine mount is a six-point system, replacing the four-point mount used on earlier Turbo Centurion models. Other improvements include the combining of all propulsion cooling inlets and removal of external scoops.

Pressurised Centurion. Described separately.

The original versions received FAA Type Approval on 23 August 1966. A total of 8,350 Model 210/Centurions, plus an additional 823 Pressurised Centurions, had been delivered by 30 June 1985.

TYPE: Six-seat cabin monoplane.

WINGS: Cantilever high-wing monoplane. Wing section NACA 64A215 at root, NACA 64A412 (A=0.5) at tip. Dihedral 1° 30'. Incidence 1° 30' at root, -1° 30' at tip. All-metal structure, except for glassfibre control camber tips. All-metal Frise ailerons. Electrically actuated all-metal Fowler flaps. Ground adjustable tab in each aileron. Pneumatic de-icing system optional.

FUSELAGE: All-metal semi-monocoque structure.

TAIL UNIT: Cantilever all-metal structure with 36° sweep-back on fin. Fixed incidence tailplane. Controllable trim tabs in rudder and starboard elevator. Electrical operation of elevator tab optional (standard with Series 400B autopilot). Tailplane abrasion boots optional, but cannot be installed with optional pneumatic de-icing system.

LANDING GEAR: Hydraulically retractable tricycle type with single wheel on each unit. Nose unit retracts forward, main units aft and inward. Chrome vanadium tapered steel tube main legs. Steerable nosewheel with oleo-pneumatic shock absorber. Cleveland or McCauley wheels with tubed tyres; mainwheel tyre size 6-00-6, 8-ply rating, pressure 3.79 bars (55 lb/sq in). Nosewheel tyre size 5-00-5, 6-ply rating, pressure 3.45 bars (50 lb/sq in). Turbo Centurion has a 5-00-5 nosewheel tyre of 10-ply rating, pressure 6.07 bars (88 lb/sq in). Cessna hydraulic disc brakes. Parking brake.

POWER PLANT: One flat-six engine, as described under model listings. Integral fuel tanks in wings, with max total usable capacity of 329 litres (87 US gallons). Optional long range tanks increase total usable capacity to 435 litres (115 US gallons). Refuelling points above wing. Oil capacity 10.5 litres (2.75 US gallons). Electrically heated propeller de-icing boots optional.

ACCOMMODATION: Six persons in pairs in enclosed cabin. Fifth and sixth seats have folding backs to accommodate articles up to 2.01 m (6 ft 7 in) long. Openable window on port side standard; optional for starboard side. Dual controls standard. Forward hinged door on each side of cabin. Baggage space aft of rear seats, capacity 109 kg (240 lb), with outside door on port side. Combined heating and ventilation system. Windscreen defroster standard; electric anti-icing optional.

SYSTEMS: Integral hydraulic-electric unit for landing gear operation. Hydraulic system for brakes. Electrical power supplied by 28V 60A engine driven alternator; 24V 95A alternator or dual 28V 60A alternators optional. 24V 12-75Ah battery standard, 24V 15-5Ah heavy duty battery optional. Oxygen system of 2.1 m³ (74 cu ft) or 2.15 m³ (76 cu ft) capacity optional. Vacuum system standard. Backup electrically driven vacuum system optional. Air-conditioning system optional.

AVIONICS AND EQUIPMENT: Optional 'Value Group A' avionics and equipment include Series 300 nav/com, ADF, transponder (400 series in Turbo Centurion), alternate static source, economy mixture indicator, all purpose control wheel on pilot's side, instrument post lighting, omniflash beacon, underwing courtesy lights, map light, radio stack lights, emergency locator beacon, adjustable, reclining-back seats for front passengers, navigation light detectors, heated pitot and stall warning systems and ground service plug receptacle. 'Value Group B' adds antenna and coupler, second nav/com and Series 400 glideslope and marker beacon receivers.

Optional avionics include 400B Nav-O-Matic two-axis autopilot, 400B IFCS system and Series 400 nav/com, VOR/LOC, VOR/ILS, ADF, DME, transponder, encoding altimeter, RMI, area navigation system: King-Pac avionics package (with 400B Nav-O-Matic or IFCS); Primus 100, Bendix RDR-160 or King KWX-56 weather radar, intercom system, radar altimeter, and radio telephone. Standard equipment includes electric clock, outside air temperature gauge, rate of climb indicator, sensitive altimeter, turn co-ordinator, vacuum system with attitude and directional gyros, cylinder head temperature gauge, recording tachometer, armrests, control locks, tinted windscreen and windows, glare shield, sun visors, audible stall and landing gear warning systems, baggage restraint net, adjustable fresh air vents, dome lights, control pedestal light, engine instrument lights, map lights, variable intensity instrument panel red floodlights, pilot's fore and aft/vertically adjustable and reclining seat, co-pilot's fore and aft adjustable and reclining seat, seat belts, shoulder restraints, sound-proofing, omni-vision rear window, baggage compartment tie-down rings and lights, landing and taxi light, navigation lights, quick fuel drains and sampler cup, overall paint scheme, cabin steps, jack pads, and towbar. Optional equipment for all versions includes an Alcor combustion analyser, clock/fuel computer, quartz clock, turn and bank indicator, flight hour recorder, electro-luminescent instrument lights, electric elevator trim system, inertia reel shoulder harnesses, cabin fire extinguisher, headrests, writing desk, stereo entertainment centre, corrosion proofing, de-icing system, ice detector light, wingtip mounted strobe lights, fin light, engine priming system, tailplane abrasion boots and retractable cabin entrance step (starboard). Engine winterisation kit available for Centurion only.

DIMENSIONS, EXTERNAL:

Wing span	12.41 m (38 ft 10 in)
Wing chord: at root	1.68 m (5 ft 6 in)
Wing aspect ratio	8.13
Length overall	8.59 m (28 ft 2 in)
Height overall	2.95 m (9 ft 8 in)
Tailplane span	4.88 m (16 ft 0 in)
Wheel track	2.64 m (8 ft 8 in)
Wheelbase	1.83 m (6 ft 0 in)
Propeller diameter	2.03 m (6 ft 8 in)
Passenger doors (each):	
Max height	1.02 m (3 ft 4 in)
Max width	0.91 m (3 ft 0 in)
Height to sill	0.91 m (3 ft 0 in)

Baggage compartment door:

Max height	0.38 m (1 ft 2 1/2 in)
Max width	0.72 m (2 ft 4 1/2 in)

DIMENSIONS, INTERNAL:

Cabin: Length	3.50 m (11 ft 6 in)
Max width	1.07 m (3 ft 6 in)
Max height	1.22 m (4 ft 0 in)
Floor area	2.69 m² (29.0 sq ft)
Volume	3.96 m³ (139.9 cu ft)
Baggage space	0.46 m³ (16.25 cu ft)

AREAS:

Wings, gross	17.23 m² (185.5 sq ft)
Trailing-edge flaps (total)	2.74 m² (29.50 sq ft)
Fin, incl dorsal fin	0.95 m² (10.26 sq ft)
Rudder, incl tab	0.65 m² (6.95 sq ft)

WEIGHTS AND LOADINGS:

Weight empty: Centurion	1,007 kg (2,220 lb)
Turbo Centurion	1,052 kg (2,320 lb)
Max ramp weight: Centurion	1,752 kg (3,862 lb)
Turbo Centurion	1,868 kg (4,118 lb)
Max T-O weight: Centurion	1,746 kg (3,850 lb)
Turbo Centurion	1,860 kg (4,100 lb)
Max landing weight: Centurion	1,746 kg (3,850 lb)
Turbo Centurion	1,769 kg (3,900 lb)
Max wing loading:	
Centurion	101.3 kg/m² (20.75 lb/sq ft)
Turbo Centurion	107.95 kg/m² (22.10 lb/sq ft)
Max power loading:	
Centurion	7.79 kg/kW (12.83 lb/hp)
Turbo Centurion	7.64 kg/kW (12.61 lb/hp)

PERFORMANCE (at mid-cruise weight, ISA):

Never-exceed speed (both models)	
200 knots (371 km/h; 230 mph) IAS	
Max level speed:	
Centurion at S/L	175 knots (324 km/h; 202 mph)
Turbo Centurion at 6,100 m (20,000 ft)	225 knots (417 km/h; 259 mph)
Max cruising speed:	
Centurion at 2,135 m (7,000 ft)	169 knots (313 km/h; 195 mph)
Turbo Centurion at 6,100 m (20,000 ft)	207 knots (384 km/h; 238 mph)
Stalling speed, flaps up, power off:	
Centurion	63 knots (117 km/h; 73 mph)
Turbo Centurion	65 knots (120 km/h; 75 mph)
Stalling speed, flaps down, power off:	
Centurion	53 knots (98 km/h; 61 mph)
Turbo Centurion	55 knots (102 km/h; 63 mph)
Max rate of climb at S/L:	
Centurion	323 m (1,060 ft)/min
Turbo Centurion	351 m (1,150 ft)/min
Service ceiling: Centurion	
4,875 m (16,000 ft)	
Turbo Centurion	
8,840 m (29,000 ft)	
T-O run: Centurion	
370 m (1,215 ft)	
Turbo Centurion	
387 m (1,270 ft)	
T-O to 15 m (50 ft): Centurion	
625 m (2,050 ft)	
Turbo Centurion	
643 m (2,110 ft)	
Landing from 15 m (50 ft): Centurion	
483 m (1,585 ft)	
Turbo Centurion	
488 m (1,600 ft)	
Landing run: Centurion	
248 m (815 ft)	
Turbo Centurion	
251 m (825 ft)	
Range, standard fuel, recommended lean mixture, allowances for start, taxi, T-O, climb, descent and 45 min reserves, max cruise power:	
Centurion at 2,135 m (7,000 ft)	
770 nm (1,427 km; 887 miles)	
Turbo Centurion at 6,100 m (20,000 ft)	
705 nm (1,307 km; 812 miles)	
Range, standard fuel, recommended lean mixture, allowances for start, taxi, T-O, climb, descent and 45 min reserves, max range power:	
Centurion at 3,050 m (10,000 ft)	
1,010 nm (1,872 km; 1,163 miles)	
Turbo Centurion at 3,050 m (10,000 ft)	
855 nm (1,584 km; 985 miles)	
Range, optional long-range tanks, max cruise power, allowances and reserves as above:	
Centurion at 2,135 m (7,000 ft)	
1,070 nm (1,983 km; 1,232 miles)	
Turbo Centurion at 6,100 m (20,000 ft)	
1,015 nm (1,881 km; 1,169 miles)	
Range, optional long-range tanks, max range power, allowances and reserves as above:	
Centurion at 3,050 m (10,000 ft)	
1,390 nm (2,576 km; 1,601 miles)	
Turbo Centurion at 3,050 m (10,000 ft)	
1,190 nm (2,205 km; 1,370 miles)	

CESSNA PRESSURISED CENTURION II AND PRESSURISED CENTURION II

On 10 November 1977, Cessna announced the introduction of a pressurised version of the Centurion. A new model, designated **Model P210R**, was introduced in late 1984, and is generally similar to the 1985 model Centurion and Turbo Centurion, except as detailed. A new optional six-place oxygen system, using a lightweight, filament wound bottle of 2.15 m³ (76.0 cu ft) capacity, is offered on the Pressurised Centurion.

In early 1985 Cessna announced that it was test flying an experimental version of the Pressurised Centurion powered by an Allison 250 turboprop engine, but said the company had no current plans for a production version of this aircraft.

A total of 823 Pressurised Centurions had been delivered by 30 June 1985.

The description of the Centurion applies also to the Pressurised Centurion, except as follows:

FUSELAGE: Conventional semi-monocoque structure of light alloy, with fail-safe structure in the pressurised section.

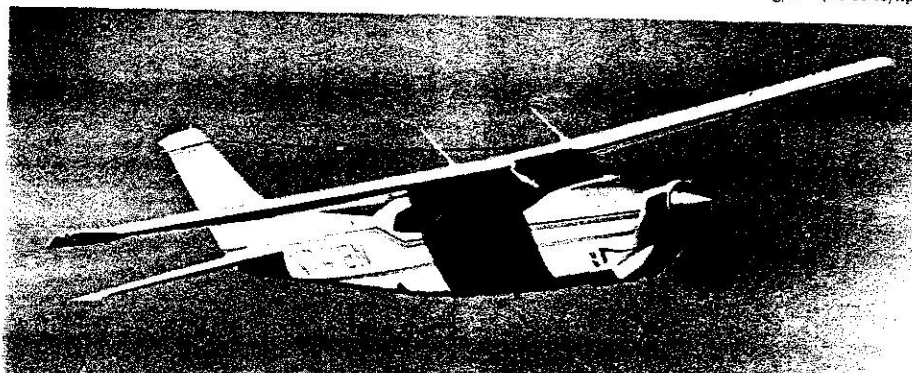
LANDING GEAR: Nosewheel tyre same as Turbo Centurion.

POWER PLANT: One 242.4 kW (325 hp) Teledyne Continental TSIO-520-CE flat-six turbocharged engine, driving a McCauley D3A36C410/80VMB-0 three-blade constant-speed metal propeller with spinner.

ACCOMMODATION: As for Centurion, except forward hinged door on port side of cabin. Large emergency exit on starboard side. Baggage space aft of cabin area, capacity 91 kg (200 lb). Four windows each side of cabin, two overhead windows above the rear seats. Cabin pressurised, heated and ventilated.

SYSTEMS: As for Centurion, except cabin pressurisation system by engine bleed air, max differential 0.23 bars (3.35 lb/sq in) permitting a cabin altitude of 3,690 m (12,100 ft) at 7,010 m (23,000 ft). Cabin heated by double heat exchange system using exhaust system heat.

AVIONICS AND EQUIPMENT: As for Centurion except that 'Value Group B' options are incorporated into 'Value Group A' package.



Cessna Centurion displaying new wingtip styling and extended tailplane of 1985 models

DIMENSIONS, INTERNAL: As for Centurion except:

Baggage space 0.52 m³ (18.3 cu ft)

WEIGHTS AND LOADINGS:

Weight empty 1,121 kg (2,471 lb)
 Max ramp weight 1,868 kg (4,118 lb)
 Max T-O weight 1,860 kg (4,100 lb)
 Max landing weight 1,769 kg (3,900 lb)
 Max wing loading 107.90 kg/m² (22.10 lb/sq ft)
 Max power loading 7.67 kg/kW (12.61 lb/hp)

PERFORMANCE (at mid-cruise weight, ISA, except where indicated):

Max level speed at 6,100 m (20,000 ft)
 201 knots (372 km/h; 231 mph)
 Max cruising speed at 7,010 m (23,000 ft)
 213 knots (394 km/h; 245 mph)
 Cruising speed at 3,050 m (10,000 ft)
 185 knots (343 km/h; 213 mph)

Stalling speed, power off:

flaps up 65 knots (121 km/h; 75 mph) CAS
 flaps down 55 knots (102 km/h; 63 mph) CAS

Max rate of climb at S/L 351 m (1,150 ft)/min

Max operating altitude 7,620 m (25,000 ft)

T-O run 387 m (1,270 ft)

T-O to 15 m (50 ft) 643 m (2,110 ft)

Landing from 15 m (50 ft) 488 m (1,600 ft)

Landing run 251 m (825 ft)

Range, with standard fuel, recommended lean mixture,
 with fuel allowance for engine start, taxi, T-O, climb
 and 45 min reserves: at max cruise power:

at 7,010 m (23,000 ft) 720 nm (1,334 km; 829 miles)

at 3,050 m (10,000 ft) 665 nm (1,232 km; 766 miles)

at max range power, allowances and reserves as above:
 at 3,050 m (10,000 ft) 855 nm (1,585 km; 985 miles)

Range, with optional fuel, allowances and reserves as
 above: at max cruise power:

at 7,010 m (23,000 ft) 1,040 nm (1,928 km; 1,198 miles)

at 3,050 m (10,000 ft) 935 nm (1,733 km; 1,077 miles)

at max range power, allowances and reserves as above:

at 3,050 m (10,000 ft) 1,190 nm (2,205 km; 1,370 miles)

CESSNA MODEL T303 CRUSADER

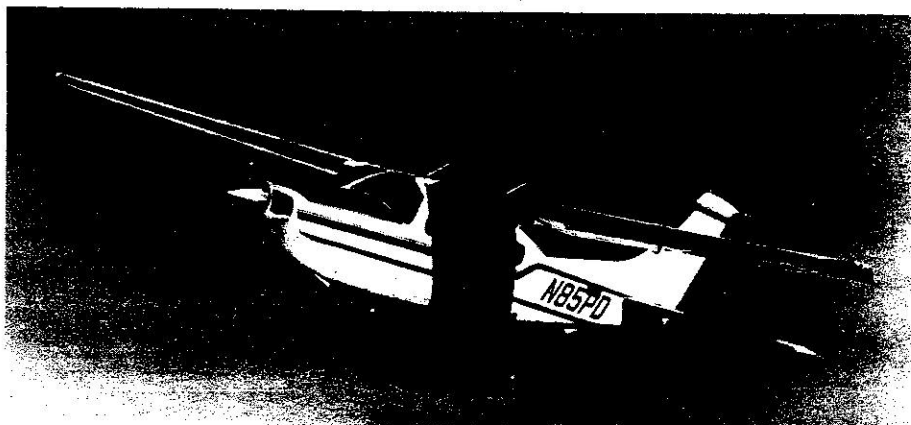
Cessna announced on 17 February 1978 the first flight, three days earlier, of a lightweight twin-engined aircraft known as the Model 303. At that time it was a four-seat aircraft, with 119 kW (160 hp) engines, and made use of bonded structures and a supercritical wing section. It was superseded by a new Model T303, with six seats, 186 kW (250 hp) turbocharged engines and conventional construction, except for use of bonding in the integral fuel tank area. Following certification to the latest FAR Pt 23 regulations on 27 August 1981, first deliveries of T303s were made in October 1981. A total of 289 had been delivered by 30 June 1985.

The Crusader has counter-rotating propellers, and an extensive range of equipment. Cessna claimed that it was the first aircraft in its class to have full IFR equipment as standard.

TYPE: Twin-engined cabin monoplane.

WINGS: Cantilever low-wing monoplane. Wing section NACA 23017 at root, NACA 23015.5 outboard of engines, and NACA 23012 at tip. Dihedral 7°. Incidence 3° at root, 0° at tip. Conventional two-spar structure of light alloy, with sheet metal ribs and stringers, and upper and lower skins. Flow energiser vanes are located at the wing leading-edge at each side of the fuselage and engine nacelles. Plain ailerons and wide span electrically actuated single-slotted Fowler trailing-edge flaps of light alloy construction. Trim tab in starboard aileron. Wing leading-edge de-icing boots optional.

FUSELAGE: Oval section semi-monocoque structure of light alloy.



Cessna Pressurised Centurion in 1985 configuration

TAIL UNIT: Cantilever structure, primarily of light alloy, with horizontal surfaces mounted partway up fin. Fin and rudder swept back. Long dorsal fin. Trim tab in rudder and starboard elevator. Tailplane and fin leading-edge de-icing boots optional.

LANDING GEAR: Retractable tricycle type, with single wheel on each unit. Mainwheels retract inward, nosewheel forward. Free-fall emergency extension, with manually operated hydraulic pump as backup. Main units of articulated (trailing link) type and steerable nosewheel all have oleo-pneumatic shock absorbers. Cleveland mainwheels with tubed tyres size 6-00-6, 8-ply rating, pressure 3.52-3.93 bars (51-57 lb/sq in). Nosewheel with tubed tyre size 6-00-6, 6-ply rating, pressure 2.48-2.90 bars (36-42 lb/sq in). Hydraulically actuated single-disc brakes. Parking brake. Heavy duty mainwheels with 6-50-8 tyres of 8-ply rating and heavy duty brakes optional (tyre pressure unchanged).

POWER PLANT: Two 186 kW (250 hp) Continental flat-six turbocharged engines comprising (port) a TSIO-520-AE and (stbd) an LTSIO-520-AE, driving respectively a McCauley Type 3AF32C506/82NEB-8 and 3AF32C507/L82NEB-8 counter-rotating three-blade constant-speed fully-feathering metal propeller with spinner. Fuel in integral wing tanks with combined usable capacity of 579 litres (153 US gallons). Refuelling point on upper surface of each wing. Oil capacity 17 litres (4.5 US gallons). Electrically heated propeller de-icing boots optional.

ACCOMMODATION: Standard seating for pilot and five passengers; or pilot, co-pilot and four passengers. Six individual forward-facing seats can be replaced by optional club arrangement. Outboard armrests are standard; inboard retractable armrests and adjustable headrests are normally optional, but are standard with club seating. Flight deck divider curtain optional. Wide range of optional cabin furniture and equipment. Clamshell type two-piece cabin door, with integral airstair, on port side at aft end of cabin. Emergency exit at front of cabin on starboard side. Optional top-hinged cargo door immediately aft of airstair door, for freight, air ambulance or casket carrying operations. Baggage stowage in nose compartment (with door on port side), wing lockers, and at rear of cabin, with combined capacity of 267 kg (590 lb). Accommodation heated and ventilated. Air-conditioning optional. Windscreen defrosting standard. Electrically heated windscreen anti-icing optional.

SYSTEMS: Electrical system powered by two 28V 60A engine driven alternators and a 24V 15.5Ah battery; 28V 95A alternators optional. Hydraulic system for landing gear operation powered by electro-hydraulic unit. Separate

hydraulic system for brakes only. Heating system includes a 45,000 BTU combustion heater. Provisions for oxygen system of 2.17 m³ (76.6 cu ft) capacity. Optional air-conditioning system includes 13,000 BTU heater and requires dual 95A alternators and 28Ah battery. Engine fire detection system standard.

AVIONICS AND EQUIPMENT: Standard avionics include Sperry Series 400 (485B) nav/com with VOR/ILS, nav/com with VOR/LOC, ADF, glideslope and marker beacon receivers, transponder, and 400B Nav-O-Matic two-axis autopilot with slaved directional gyro. Yaw damper system. Optional avionics include 400B IFCS, HSI system, Series 400 R/Nav, DME, RMI, second glideslope receiver, encoding altimeter, altitude encoder, Series 800 encoding/alert altimeter, intercom system, Bendix RDR-160 colour or monochromatic, King KWX-56 colour or Sperry Primus 100 monochromatic weather radar systems, and King KT-96 radio telephone. Standard equipment includes sensitive altimeter, electric clock, horizon and slaved directional gyros with dual vacuum system, outside air temperature gauge; rate of climb, true airspeed and turn and bank indicators, alternate static source; cylinder head temperature and fuel flow gauges; low-fuel warning lights, economy mixture indicator; engine instrument, instrument panel post, and map lights; annunciator, control pedestal and radio lights; all-purpose control wheel, dual controls, electric elevator trim, control locks, padded glare shield, sun visors, audible stall warning system, emergency locator transmitter, six individual fore and aft adjustable and reclining seats, seat belts, shoulder restraints, armrests, map and storage pocket, soundproofing, adjustable ventilators, pilot's storm window, tinted windows, cabin courtesy lights, omni-flash beacons: landing, navigation and taxi lights; full flow oil filters, fuel quick drain valves and sampler cup, external corrosion proofing, heated pitot and stall warning transmitter, anti-precipitation static kit, tiedown rings, jack pads, nose-gear viewing mirror, towbar and external power socket. Optional equipment includes alternative sensitive altimeters, quartz clock, cabin heater hour meter, turn co-ordinator, electronic fuel flow indicating system, flight hour recorder, co-pilot's flight instruments, cabin fire extinguisher, rudder gust lock, microphone/headset combination, pilot and co-pilot vertically adjustable seats, inertia reel shoulder harnesses for pilot and co-pilot, headrests, stereo installation, table, refreshment centre, 'Fasten seat belts—no smoking' sign, flight deck divider curtain, window curtains, passengers' reading lights, baggage compartment courtesy lights, ice detection light, strobe lights, starboard landing light, propeller synchrophaser, propeller automatic unfeathering system, fan driven ventilation system, and fuselage ice protection plates.

DIMENSIONS, EXTERNAL:

Wing span	11.90 m (39 ft 0 1/2 in)
Wing chord: at root	1.75 m (5 ft 9 in)
at tip	1.24 m (4 ft 1 in)
Length overall	9.27 m (30 ft 5 in)
Height overall	4.06 m (13 ft 4 in)
Tailplane span	5.18 m (17 ft 0 in)
Wheel track	3.81 m (12 ft 6 in)
Wheelbase	2.29 m (7 ft 6 in)
Propeller diameter	1.88 m (6 ft 2 in)
Propeller ground clearance	0.305 m (1 ft 0 in)
Passenger door (port, rear):	
Height, mean	1.17 m (3 ft 10 in)
Width	0.61 m (2 ft 0 in)
Emergency exit (stbd, fwd):	
Height	0.69 m (2 ft 3 in)
Max width	0.58 m (1 ft 11 in)
Cargo door (port, optional):	
Height	0.88 m (2 ft 10 3/4 in)
Width	0.81 m (2 ft 8 in)
Baggage door (port, fwd):	
Height, mean	0.38 m (1 ft 3 in)
Width	0.86 m (2 ft 10 in)



Cessna Model T303 Crusader six-seat cabin monoplane with counter-rotating propellers

ME9

due to reduced power plant weight; ability to operate on aviation turbine fuel, or diesel fuel; a TBO of 3,500 h; quieter operation; and the ability to feather the propeller during fuelling and loading operations without shutting down the engine, because of the free-turbine configuration.

By early 1985 a total of 250 Turbo-Thrushes had been delivered.

DIMENSIONS, EXTERNAL AND AREA: As for Bull Thrush S2R R1820 except:

Length overall 10.06 m (33 ft 0 in)
Height overall 2.79 m (9 ft 2 in)

WEIGHTS AND LOADINGS (A: standard hopper; B: optional 1,930 litre (510 US gallon hopper):

Weight empty: A 1,633 kg (3,600 lb)

B	1,769 kg (3,900 lb)
Max T-O weight (CAR 3): A, B	2,721 kg (6,000 lb)
Typical operating weight (CAM 8):	
A	3,719 kg (8,200 lb)
B	3,856 kg (8,500 lb)
Max wing loading	127.1 kg/m ² (26.0 lb/sq ft)
Max power loading	7.6 kg/kW (14.17 lb/shp)

PERFORMANCE (A and B with PT6A-34AG power plant, at max T-O weight except where indicated):

Max level speed with spray equipment	138 knots (256 km/h; 159 mph)
Cruising speed, 50% power	130 knots (241 km/h; 150 mph)

Working speed, 30-50% power	82-130 knots (153-241 km/h; 95-150 mph)
Stalling speed: flaps up	61 knots (113 km/h; 70 mph)
flaps down	57 knots (106 km/h; 66 mph)
Stalling speed at normal landing weight:	
flaps up	51 knots (95 km/h; 59 mph)
flaps down	50 knots (92 km/h; 57 mph)
Max rate of climb at S/L	530 m (1,740 ft)/min
Service ceiling	7,620 m (25,000 ft)
T-O run	183 m (600 ft)
Landing run	152 m (500 ft)
Landing run with propeller reversal	91 m (300 ft)
Ferry range at 40% power	664 nm (1,231 km; 765 miles)

BEECHCRAFT

BEECH AIRCRAFT CORPORATION (subsidiary of Raytheon Company)

9709 East Central, Wichita, Kansas 67201

Telephone: (316) 681 7111

BRANCH DIVISIONS: Salina, Kansas; Selma, Alabama; and Boulder, Colorado

CHAIRMAN EMERITUS, AND CHAIRMAN OF BEECH AIRCRAFT

FOUNDATION: Mrs Olive Ann (Walter H.) Beech

CHAIRMAN OF THE BOARD: D. Brainerd Holmes

PRESIDENT AND CHIEF EXECUTIVE OFFICER:

James S. Walsh

EXECUTIVE VICE-PRESIDENTS:

Charles W. Dieker (Marketing)

Glenn Ehling (Operations)

SENIOR VICE-PRESIDENT:

John J. Funsch (International Marketing)

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George D. Rodgers (Domestic Commercial Marketing)

William G. Rutherford (Government Relations)

W. D. Wise (Quality Assurance)

CORPORATE SECRETARY: T. J. Martin

ASSISTANT CONTROLLER AND CHIEF ACCOUNTANT:

D. C. Cullinane

TREASURER: Andrew F. Horvath

Beech Aircraft Corporation was founded jointly in 1932 by Mrs Olive Ann Beech and the late Walter H. Beech, pioneer designer and builder of light aeroplanes in the USA. On 8 February 1980, Raytheon Company and Beech Aircraft Corporation completed the signing of closing merger documents under which Beech became a wholly owned subsidiary of Raytheon. It continues to operate as a separate entity, and is currently engaged in the production of civil and military aircraft, missile targets, aircraft and missile components, and cryogenic equipment for spacecraft.

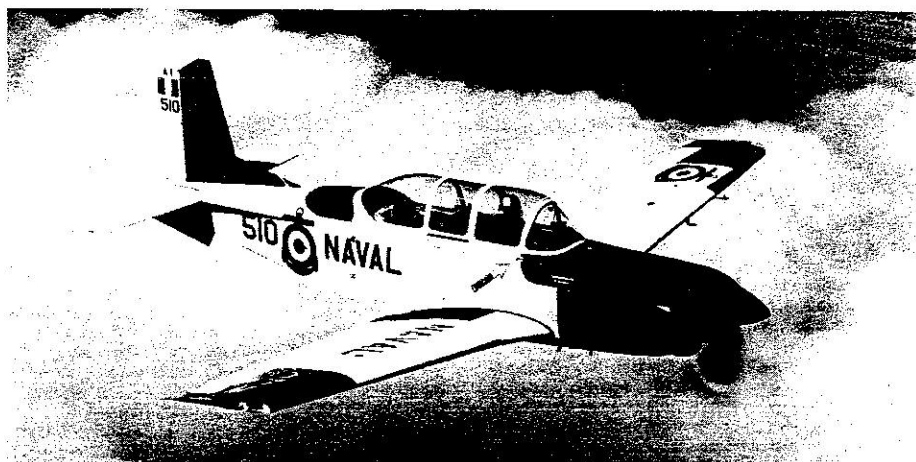
Deliveries by Beech in 1984 were made up of 108 King Airs, 93 Barons, 190 Bonanzas, 2 Sierras and 4 Sundowners. By 1 January 1985 Beech had delivered 4,830 pressurised aircraft since introducing the King Air 90 in 1964. Total production of Beech aeroplanes surpassed 47,516 by the beginning of 1985.

Deliveries of C-12D aircraft to the US Army and US Air Force continued in 1984. By 1 January 1985 the Army had received 65 C-12Ds, and the Air Force 6 C-12Ds. In addition, the Army has received 61 C-12As and 14 C-12Cs, and the Air Force 30 C-12As. The US Air Force has also leased 40 C-12Fs, 38 of which had been delivered by the end of 1984.

In 1985 Beech began its 19th consecutive year of manufacturing complete airframes for the Bell Helicopter Textron Model 206B JetRanger. These units, plus the military OH-58A observation helicopters built during the Viet-Nam conflict, then totalled 5,884. Present and future contractual commitments are expected to extend this programme for several more years. A contract to supply Beechcraft Model 1080 aerial refuelling units for USAF Boeing KE-3A tanker aircraft was announced in March 1984. These units have also been ordered by the Canadian Armed Forces and the Royal Saudi Air Force.

In October 1976 Beech established a wholly owned subsidiary, Beech Aerospace Services Inc (BASI), to provide worldwide logistic support of aerospace products. This company is currently responsible for total support of 274 US Navy T-34Cs, 58 Navy T-44As, 195 Army/Air Force/Navy C-12s (plus additional 40 C-12Fs), and Beech MQM-107A targets, in more than 105 locations in 26 countries worldwide. BASI headquarters for administration, spare parts, publications central supply and training is based at Jackson, Mississippi.

Beech Aircraft had 8,700 employees worldwide in mid-1985, and occupies 390,988 m² (4,208,564 sq ft) of plant area at its four major facilities in Wichita and Salina, Kansas; Boulder, Colorado; and Selma, Alabama. Aircraft built in



Beechcraft T-34C-1 in service with the Navy of Peru

Wichita are flown to Selma Division for specialised work. Selma is also the production site for the C99 Airliner, and the King Air C90A and F90-1.

The Salina division supplies all wings, non-metallic interior components, ventral fins, nosecones and tailcones used in Wichita production, and is responsible for manufacture and final assembly of the pressurised Baron 58P and the T-34C trainer.

The plant at Liberal, Kansas, formerly used for assembly of the Sierra, Sundowner and Duchess 76 aircraft, and for the manufacture of control surfaces for all Beech aircraft and Model 1900 nose and rear fuselage assemblies, was scheduled to close by August 1985.

Work at Boulder involves space vehicle or missile applications. The company's contracts on the Space Shuttle programme alone (details in 1980-81 *Jane's*) totalled \$53.5 million by the beginning of 1983. Boulder also produces aircraft assemblies for other Beech divisions and missile target systems for the US Army and Navy (see RVPs and Targets section).

Wholly owned subsidiaries of the parent company include Scaled Composites Inc (which see), which was acquired in June 1985 to serve as an advanced development arm for the company; Beech Acceptance Corporation Inc, which is engaged in business aircraft retail finance and leasing; Beechcraft AG, which has its headquarters in Zurich, Switzerland, and supports in Europe the sales, liaison and other activities of the parent company; Travel Air Insurance Company Ltd, a Bermuda-based company organised during 1972 to provide aircraft liability insurance; Beech Holdings Inc, which provides marketing support to the parent company; Beech International Sales Corporation, Wichita, through which all Beech export sales are made; Beech Aerospace Services Inc, which provides worldwide support of Beech military aircraft, missile targets and related products; and the following sales outlets which are wholly owned subsidiaries of Beech Holdings Inc: Beechcraft East Inc, Farmingdale, New York, and Bedford, Massachusetts; Rocky Mountain Beechcraft, Englewood, Colorado; Hangar One Inc, Atlanta, Hartsfield, Peachtree, DeKalb and Fulton County, Georgia; Birmingham, Alabama; Chattanooga, Tennessee; and Opa Locka, Orlando and Tampa, Florida; Hedrick Beechcraft, Colorado Springs, Colorado; Houston-Beechcraft Inc, Houston, Texas; United Beechcraft Inc, Wichita, Kansas; Beechcraft West, Ontario, Hayward, Van Nuys, Bakerfield, Fresno and Orange County, California; Indiana Beechcraft Inc, Indianapolis, Indiana; Baton Rouge Beechcraft, Baton Rouge, Louisiana; Salt Lake Beechcraft, Salt Lake City, Utah; and Ohio Aviation Co, Dayton, Cincinnati and Cleveland, Ohio.

BEECHCRAFT T-34C

US Navy designation: T-34C

In March 1953 the US Air Force selected the Beechcraft Model 45 as its new primary trainer and, under the designation T-34A Mentor, 450 were eventually acquired.

Power plant consisted of a 168 kW (225 hp) Continental O-470-13 flat-six engine. Just over a year later the US Navy reached a similar decision, and 423 T-34B Mentors were built for that service.

In 1973 Beech received a US Navy R & D contract to develop an upgraded version of the T-34B. This involved the installation of a turboprop engine and the latest avionics equipment, the primary object being to let student pilots have experience of operating turbine powered aircraft from the beginning of their flight training. The power plant selected was the PT6A-25, which is 'red-lined' at 451 kg (995 lb) torque to restrict engine output to 298 kW (400 shp), ensure long engine life, and provide constant performance over a wide range of temperature and altitude.

Design of the upgraded model began in March 1973, and development of two prototype aircraft began in May 1973. Designated YT-34C, the first of these aircraft (described in previous editions of *Jane's*) flew for the first time on 21 September 1973.

Beech received US Navy contracts totalling \$89.5 million for 184 new-production T-34Cs, and the provision of engineering services and support. Deliveries to Naval Air Training Command (Training Air Wing 5) at NAS Whiting Field, Milton, Florida, began in November 1977 and were completed in June 1981. Deliveries of a further 150 aircraft to the US Navy were completed in April 1984. An export civil version, known as the **Turbine Mentor 34C**, is in service at the Algerian national pilot training school, which received six in 1979.

A T-34C-1 armament systems trainer version is also available and, in addition to its basic role, is capable of carrying out forward air control (FAC) and tactical strike training missions. Deliveries of T-34C-1s have been made to Argentina (Navy 15), Ecuador (Air Force 20, Navy 3), Gabon (Presidential Guard 4), Indonesia (Air Force 16), Morocco (Air Force 12), Peru (Navy 7) and Uruguay (Navy 3). A further nine for the Indonesian Air Force were delivered in 1984, bringing total exports of this version to 89.

TYPE: Two-seat turbine powered primary training and light strike training aircraft.

WINGS: Cantilever low-wing monoplane. Wing section NACA 23016-5 (modified) at root, NACA 23012 at tip. Dihedral 7°. Incidence 4° at root, 1° at tip. No sweepback. Conventional box beam structure of light alloy. Ailerons of light alloy construction. Single-slotted trailing-edge flaps of light alloy. Manually operated trim tab in port aileron. Servo tabs in both ailerons.

FUSELAGE: Semi-monocoque light alloy structure.

TAIL UNIT: Cantilever structure of light alloy. Fixed incidence tailplane. Manually operated trim tabs in elevators and rudder. Twin ventral fins under rear fuselage.

LANDING GEAR: Electrically retractable tricycle type. Main units retract inward, nosewheel aft. Beech oleopneumatic shock absorbers. Single wheel on each unit. Mainwheels size 7-00-8, pressure 6-20 bars (90.0 lb/sq in).

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Nosewheel and tyre size 5-00-5, pressure 4-83 bars (70-0 lb/sq in). Goodyear multiple-disc hydraulic brakes.

POWER PLANT: One 533 kW (715 shp) Pratt & Whitney Canada PT6A-25 turboprop engine, torque limited to 298 kW (400 shp), driving a Hartzell three-blade constant-speed fully-feathering metal propeller with spinner. Version of same engine derated to 410 kW (550 shp) is available optionally. Two bladder fuel cells in each wing, in inboard leading-edge and aft of main spar outboard of landing gear; total usable capacity 492 litres (130 US gallons). Oil capacity 15 litres (4 US gallons).

ACCOMMODATION: Instructor and pupil in tandem beneath rearward sliding cockpit canopy. Cockpit ventilated, heated by engine bleed air and air-conditioned. Dual controls standard. All armament controls in forward cockpit of T-34C-1.

SYSTEMS: Hydraulic system for brakes only. Pneumatic system for emergency opening of cockpit canopy. Diluter demand gaseous oxygen system, pressure 103-5 bars (1,500 lb/sq in). Electrical power supplied by 250A starter/generator. Freon air-conditioner for cockpit cooling.

AVIONICS AND EQUIPMENT: Standard avionics can include UHF or VHF com, VOR or Tacan nav, DME, transponder, angle of attack indicator, ADF, marker beacon receiver, compass and intercom system. R/Nav, Loran, HF and specialised tactical systems available to customer's requirements. US Navy T-34C has ARC-159V UHF com, VIR-30A VOR/Omni, dual 255Y-1 ICS/ audio, TCN-40 Tacan and PN-101 remote compass, all by Collins; two TDR-950 transponders and a CIR-11-2 emergency locator transmitter. Blind-flying instrumentation standard. Electrically heated pitot.

ARMAMENT (T-34C-1): CA-513 fixed-reticle reflector gun-sight. Four underwing hardpoints are provided for the carriage of stores. The inboard stations are rated at 272 kg (600 lb) each, the outboard stations at 136 kg (300 lb) each, with a maximum load of 272 kg (600 lb) each side and 544 kg (1,200 lb) total. Weapons which can be carried on MA-4 racks include AF/B37K-1 bomb containers with practice bombs or flares, LAU-32 or LAU-59 rocket pods, Mk 81 bombs, SUU-11 Minigun pods, BLU-10-B incendiary bombs, AGM-22A wire guided anti-tank missiles and TA8X towed target equipment.

DIMENSIONS, EXTERNAL:

Wing span	10.16 m (33 ft 3 1/4 in)
Wing chord: at root	2.55 m (8 ft 4 1/2 in)
at tip	1.05 m (3 ft 5 1/4 in)
Wing aspect ratio	6.22
Length overall	8.75 m (28 ft 8 1/2 in)
Height overall	2.92 m (9 ft 7 in)
Tailplane span	3.71 m (12 ft 2 1/4 in)
Wheel track	2.95 m (9 ft 8 in)
Wheelbase	2.41 m (7 ft 11 in)
Propeller diameter	2.29 m (7 ft 6 in)
Propeller ground clearance	0.29 m (11 1/4 in)

DIMENSIONS, INTERNAL:

Cabin: Length	2.74 m (9 ft 0 in)
Max width	0.86 m (2 ft 10 in)
Max height	1.22 m (4 ft 0 in)

AREAS:

Wings, gross	16.69 m ² (179.6 sq ft)
Ailerons (total)	1.06 m ² (11.4 sq ft)
Trailing-edge flaps (total)	1.98 m ² (21.3 sq ft)
Fin	1.20 m ² (12.9 sq ft)
Rudder, incl tab	0.64 m ² (6.9 sq ft)
Tailplane	3.46 m ² (37.2 sq ft)
Elevators, incl tabs	1.26 m ² (13.6 sq ft)

WEIGHTS AND LOADING:

Weight empty: T-34C	1,342 kg (2,960 lb)
T-34C-1	1,356 kg (2,990 lb)

Max T-O and landing weight:

T-34C	1,950 kg (4,300 lb)
T-34C-1, strike role	2,494 kg (5,500 lb)
Max ramp weight: T-34C	1,962 kg (4,325 lb)
Max wing loading: T-34C	108.3 kg/m ² (22.2 lb/sq ft)

PERFORMANCE (T-34C, at T-O weight of 1,910 kg; 4,210 lb, except where indicated):

Never-exceed speed	280 knots (518 km/h; 322 mph)
Max cruising speed at 5,180 m (17,000 ft)	214 knots (396 km/h; 246 mph)

Stalling speed, flaps down, power off, at typical landing weight of 1,588 kg (3,501 lb)

53 knots (98 km/h; 61 mph)	
Max rate of climb at S/L	451 m (1,480 ft)/min
Service ceiling	over 9,145 m (30,000 ft)

T-O run	352 m (1,155 ft)
T-O to 15 m (50 ft)	586 m (1,920 ft)

Landing from 15 m (50 ft)	547 m (1,795 ft)
Landing run	226 m (740 ft)

Range with max fuel:

at 181 knots (335 km/h; 208 mph) at 305 m (1,000 ft)	427 nm (790 km; 491 miles)
at 202 knots (374 km/h; 232 mph) at 3,050 m (10,000 ft)	523 nm (968 km; 601 miles)

at 180 knots (333 km/h; 207 mph) at 6,100 m (20,000 ft)	708 nm (1,311 km; 814 miles)
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PERFORMANCE (T-34C-1 with 410 kW; 550 shp engine, estimated. A with two stores at AUW of 2,222 kg; 4,900 lb. B with four stores at AUW of 2,494 kg; 5,500 lb, except where indicated):

Max level speed at 5,500 m (18,000 ft):	
A	209 knots (387 km/h; 241 mph)
B	206 knots (382 km/h; 237 mph)

Stalling speed, flaps down, idle power:

A	65 knots (120 km/h; 75 mph) CAS
B	69 knots (128 km/h; 80 mph) CAS

Max rate of climb at S/L: A	540 m (1,771 ft)/min
B	436 m (1,431 ft)/min

Typical combat radius:

FAC mission at AUW of 2,429 kg (5,355 lb), with four stores and optional max fuel, incl 2-6 h lofter over target and 20 min + 5% reserves

100 nm (185 km; 115 miles)	
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Strike mission at AUW of 2,473 kg (5,452 lb), with four stores and optional max fuel, incl 20 min + 5% reserves

300 nm (555 km; 345 miles)	
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BEECHCRAFT SIERRA 200 and SUNDOWNER 180

Production of the Sundowner 180 and Sierra 200 light aircraft was suspended during 1984. A description of both models can be found in the 1984-85 edition.

BEECHCRAFT BONANZA MODEL V35B

Production of the V-tail Bonanza, first flown on 22 December 1945, has ceased after 38 years of unbroken production. By 1 January 1985 total production of Bonanzas (all models) had reached 15,335.

BEECHCRAFT BONANZA MODEL F33A/C

The F33A version of the Bonanza is a four/five-seat single-engined executive aircraft, similar in general configuration to the Bonanza Model V35B, but distinguished by a conventional tail unit with sweptback vertical surfaces. The prototype flew for the first time on 14 September 1959, and the production models were known as Debonairs until 1967. The 1985 model includes as standard equipment a large cargo door, measuring 0.96 m x 0.57 m (3 ft 2 in x 1 ft 10 1/2 in), three-blade propeller, super soundproofing, and the avionics and equipment listed in the appropriate paragraphs, representing full IFR standard.

The aerobatic F33C is the subject of an order for 21 for the Mexican Air Force, to be delivered in 1986.

A total of 2,516 Model 33s had been built by 1 January 1985. They included 21 for pilot training by Lufthansa in West Germany; and 16 F33As for Pacific Southwest Airlines for airline crew training. Deliveries of F33As and aerobatic F33Cs to foreign air forces were as follows: Imperial Air Force of Iran, 16 F33Cs; Mexican Navy, 5 F33Cs; Netherlands Government Flying School, 16 F33Cs; and Spanish Air Ministry and Air Force, 74 F33s.

Optional extras include the 'Magic Hand' automatic landing gear control system, air-conditioning system and a dual-duct fresh air system to increase cabin airflow. Safety features include single diagonal strap shoulder harness with inertia reel for all occupants as standard equipment. Three optional factory installed IFR avionics packages include dual communication, dual navigation, ADF, marker beacon receiver, glideslope, DME, and transponder. The packages meet FAA Technical Standard Order (TSO). Beech was in 1972 the first general aviation manufacturer to acquire approval for factory installation of area navigation equipment on production aircraft with IFR equipment. The large cargo door, air-conditioning and fifth seat are not available for the Bonanza F33C.

New options available on current F33As include 3M/ Ryan Stormscope, approach plate holder, new oxygen masks, and a communications frequency transfer switch on the control panel.

TYPE: Four/five-seat light cabin monoplane.

WINGS:

Cantilever low-wing monoplane. Wing section Beech modified NACA 23016-5 at root, modified NACA 23012 at tip. Dihedral 6°. Incidence 4° at root, 1° at tip. Sweepback 0° at quarter-chord. Each wing is a two-spar semi-monocoque box-beam of conventional aluminium alloy construction. Symmetrical section ailerons and single-slotted three-position flaps of aluminium alloy construction. Ground adjustable trim tab in each aileron.

FUSELAGE: Conventional aluminium alloy semi-monocoque structure. Hat section longerons and channel tie keels extend forward from cabin section, making the support structure for the engine and nosewheel an integral part of the fuselage.

TAIL UNIT: Conventional cantilever all-metal stressed-skin structure, primarily of aluminium alloy but with beaded magnesium skin on elevators. Large trim tab in each elevator. Fixed tab in rudder.

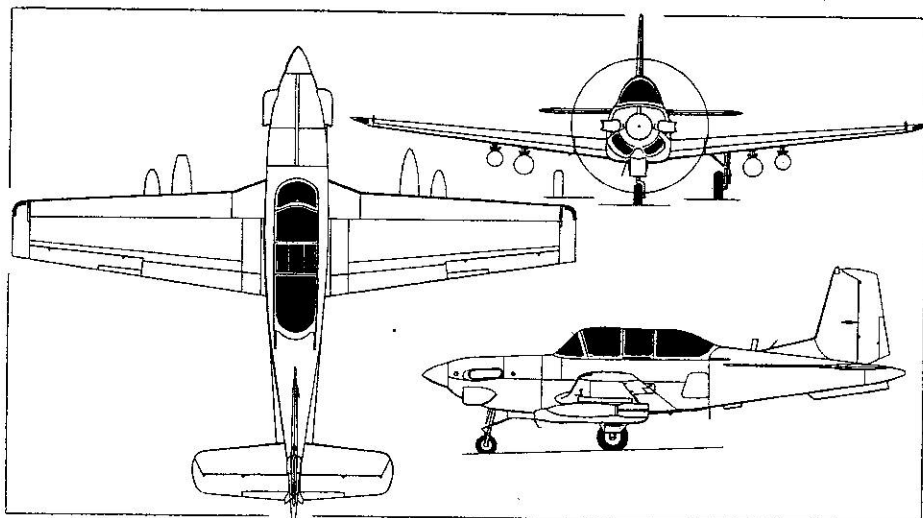
LANDING GEAR: Electrically retractable tricycle type, with steerable nosewheel. Mainwheels retract inward into wings, nosewheel rearward. Beech oleo-pneumatic shock absorbers in all units. Cleveland mainwheels, size 6-00-6, and tyres, size 7-00-6, pressure 2-28-2-76 bars (33-40 lb/sq in). Cleveland nosewheel and tyre, size 5-00-5, pressure 2-76 bars (40 lb/sq in). Cleveland ring-disc hydraulic brakes. Parking brake. 'Magic Hand' landing gear system optional.

POWER PLANT: One 212.5 kW (285 hp) Continental IO-520-BB flat-six engine, driving a McCauley three-blade constant-speed metal propeller with spinner. Manually adjustable engine cowl flaps. Two standard fuel tanks in wing leading-edges, with total usable capacity of 280 litres (74 US gallons). Refuelling points above tanks. Oil capacity 11.5 litres (3 US gallons).

ACCOMMODATION: Enclosed cabin with four individual seats in pairs as standard, plus optional forward facing fifth seat (F33A only). Baggage compartment and hat shelf aft of seats. Passenger door and baggage compartment door on starboard side. Heater standard. Large cargo door, on starboard side of fuselage, standard on F33A.

SYSTEMS: Optional 12,000 BTU refrigeration type air-conditioning system comprises evaporator located beneath pilot's seat, condenser on lower fuselage and engine mounted compressor. Air outlets on centre console, with two-speed blower. Electrical system supplied by 28V 60A alternator, 24V 15-5Ah battery; a 100A alternator is available as an option, as is a standby generator. Hydraulic system for brakes only. Pneumatic system for instrument gyros and refrigeration type air-conditioning system optional. Oxygen system optional.

AVIONICS AND EQUIPMENT: Standard avionics include King KX 165-05 720-channel com transceiver, 200-channel nav/glideslope receiver/converter with KI 206 VOR/ILS indicator, King KY 165-04 720-channel com transceiver, 200-channel nav receiver/converter with KI 202 VOR/LOC indicator, KR 87 ADF with 227-00 indicator, KN 63 DME with KDI 572 indicator, DME hold and nav 1/ nav 2 switching, KT 76A transponder, KMA 24-03 audio control/marker beacon receiver, microphone, headset, cabin speaker and static wicks. A wide range of optional avionics is available, by Collins and King. King and S-Tec autopilots. Sperry WeatherScout radar and 3M/ Ryan Stormscope are optional. Standard equipment includes electric clock, exhaust gas temperature gauge, outside air temperature gauge, rate of climb indicator, sensitive altimeter, turn co-ordinator, 3 in horizon and directional gyros, four fore and aft adjustable and reclining seats, armrests, headrests, shoulder harness and lapbelts, pilot's storm window, sun visors, ultraviolet-proof windscreen and windows, emergency locator transmitter, stall warning device, alternate static source.



Beechcraft T-34C-1 turboprop powered training/light attack aircraft (Pilot Press)

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heated pitot, rotating beacon, three light strobe system, carpeted floor, coat hooks, glove compartment, in-flight storage pockets, approach plate holder, utility shelf, cabin dome light, reading lights, instrument post lights, control wheel map light, electroluminescent sub-panel lighting, landing light, taxi light, full-flow oil filter, polyurethane exterior paint, external power socket and towbar. Optional equipment includes control wheel clock, dual controls, co-pilot's wheel brakes, fifth seat, large cargo door, super soundproofing, control wheel map lights, entrance door courtesy light, internally lit instruments and fresh air vent blower. Also available is a Beech designed 'Magic Hand' landing gear safety system. Designed to eliminate the possibility of wheels-up landing or inadvertent retraction of the landing gear on the ground, it lowers the gear automatically on approach when the engine manifold pressure falls below approximately 508 mm (20 in) and airspeed has been reduced to 104 knots (193 km/h; 120 mph). On take-off, it keeps the gear down until the aircraft is airborne and has accelerated to 78 knots (145 km/h; 90 mph) IAS. The system can be switched off by the pilot at will.

DIMENSIONS, EXTERNAL:

Wing span	10.21 m (33 ft 6 in)
Wing chord: at root	2.13 m (7 ft 0 in)
at tip	1.07 m (3 ft 6 in)
Wing aspect ratio	6.2
Length overall	8.13 m (26 ft 8 in)
Height overall	2.51 m (8 ft 3 in)
Tailplane span	3.71 m (12 ft 2 in)
Wheel track	2.92 m (9 ft 7 in)
Wheelbase	2.13 m (7 ft 0 in)
Propeller diameter: two-blade	2.13 m (7 ft 0 in)
three-blade	2.03 m (6 ft 8 in)
Passenger door: Height	0.91 m (3 ft 0 in)
Width	0.94 m (3 ft 1 in)
Baggage compartment door: Height	0.57 m (1 ft 10½ in)
Width	0.47 m (1 ft 6½ in)

DIMENSIONS, INTERNAL:

Cabin, aft of firewall: Length	3.07 m (10 ft 1 in)
Max width	1.07 m (3 ft 6 in)
Max height	1.27 m (4 ft 2 in)
Volume	3.31 m³ (117 cu ft)
Baggage space	0.99 m³ (35 cu ft)

AREAS:

Wings, gross	16.80 m² (181 sq ft)
Ailerons (total)	1.06 m² (11.4 sq ft)
Trailing-edge flaps (total)	1.98 m² (21.3 sq ft)
Fin	0.93 m² (10.0 sq ft)
Rudder, incl tab	0.52 m² (5.6 sq ft)
Tailplane	1.75 m² (18.82 sq ft)
Elevators, incl tabs	1.67 m² (18.0 sq ft)

WEIGHTS AND LOADINGS:

Weight empty	964 kg (2,125 lb)
Max T-O and landing weight	1,542 kg (3,400 lb)
Max ramp weight	1,548 kg (3,412 lb)
Max wing loading	91.8 kg/m² (18.8 lb/sq ft)
Max power loading	7.26 kg/kW (11.93 lb/hp)

PERFORMANCE (at max T-O weight, except cruising speeds at mid-cruise weight):

Max level speed at S/L	182 knots (338 km/h; 209 mph)
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Cruising speed:

75% power at 1,830 m (6,000 ft)	172 knots (319 km/h; 198 mph)
66% power at 3,050 m (10,000 ft)	168 knots (311 km/h; 193 mph)
55% power at 3,660 m (12,000 ft)	157 knots (291 km/h; 181 mph)
45% power at 2,440 m (8,000 ft)	136 knots (253 km/h; 157 mph)

Stalling speed, power off:

flaps up	64 knots (118 km/h; 74 mph) IAS
30° flap	51 knots (94 km/h; 59 mph) IAS
Max rate of climb at S/L	356 m (1,167 ft)/min
Service ceiling	5,443 m (17,858 ft)
T-O run	305 m (1,002 ft)
T-O to 15 m (50 ft)	539 m (1,769 ft)
Landing from 15 m (50 ft)	404 m (1,324 ft)
Landing run	233 m (763 ft)

Range with 280 litres (74 US gallons) usable fuel, allowances for engine start, taxi, T-O, climb and 45 min reserves at 45% power:

75% power at 1,830 m (6,000 ft)	716 nm (1,326 km; 824 miles)
66% power at 3,050 m (10,000 ft)	777 nm (1,440 km; 894 miles)
55% power at 3,660 m (12,000 ft)	838 nm (1,553 km; 964 miles)
45% power at 2,440 m (8,000 ft)	889 nm (1,648 km; 1,023 miles)

BEECHCRAFT BONANZA MODEL A36

The current version of the A36, introduced on 3 October 1983, succeeded the earlier 212-5 kW (285 hp) Continental IO-520-BB powered model, and is a full six-seat utility aircraft developed from the Bonanza Model V35B but has a conventional tail unit with sweptback vertical surfaces, similar to that of the Bonanza F33 series. In addition, the A36 has large double doors on the starboard side of the



Beechcraft Model F33A Bonanza four/five-seat cabin monoplane

fuselage aft of the wing root, to facilitate loading and unloading of bulky cargo when used in a utility role. The cabin volume is increased by 0.54 m³ (18.9 cu ft) compared with the F33, due to a fuselage extension of 0.25 m (10 in), and an increase of 0.28 m³ (10 cu ft) in the baggage compartment volume.

Like all Bonanzas, the Model A36 is licensed in the FAA Utility category at full gross weight, with no limitation of performance. The 1985 model has as standard a Continental IO-550-B engine, redesigned instrument panels with 40% more space for instruments and avionics, dual controls, throttle control power levers, exhaust gas temperature gauge, automatically-dimming landing gear and annunciator lights for night operation, a three-blade propeller and a standby vacuum system. Landing gear and flap controls have been repositioned to conform to GAMA recommendations. Optional extras include instrument post lights, internally-lit instruments, courtesy lights for entrance door and rear step, co-pilot's vertically adjusting seat, refrigeration type air-conditioning system and all other items mentioned under the Model F33A Bonanza entry, except for the large cargo door.

A total of 2,676 Model 36 Bonanzas had been delivered by 1 January 1985. In April 1985 Saudia (Saudi Arabian Airlines) took delivery of four Model A36 Bonanzas for the carrier's pilot training academy at Jeddah.

TYPE: Four-six-seat utility light cabin monoplane.

WINGS: As for Model F33A.

FUSELAGE: As for Model F33A but lengthened by 0.25 m (10 in).

TAIL UNIT: As for Model F33A.

LANDING GEAR: As for Model F33A, but without 'Magic Hand' system option.

POWER PLANT: One 224 kW (300 hp) Continental IO-550-B flat-six engine, driving a McCauley three-blade constant-speed propeller. The engine is equipped with an altitude-compensating fuel pump which automatically leans and enriches the fuel/air mixture during climb and descent respectively. Fuel capacity as for Model F33A.

ACCOMMODATION: Enclosed cabin seating four to six persons on individual seats. Pilot's seat is vertically adjustable. Dual controls standard. Two rear removable seats and two folding seats permit rapid conversion to utility configuration. Optional club seating with rear facing third and fourth seats, executive writing desk, refreshment cabinet, headrests for third and fourth seats, reading lights and fresh air outlets for fifth and sixth seats. Double doors of bonded aluminium honeycomb construction on starboard side facilitate loading of cargo. As an air ambulance, one stretcher can be accommodated with ample room for a medical attendant and/or other passengers. Extra windows provide improved view for passengers. Stowage for 181 kg (400 lb) of baggage.

SYSTEMS: Electrical system as for F33A. Hydraulic system for brakes only. Pneumatic system for instrument gyros, and refrigeration type air-conditioning system, optional.

AVIONICS AND EQUIPMENT: Standard avionics include King KX 155 720-channel nav/com, with KI 208 VOR/LOC Omni converter/indicator, but a wide range of optional avionics is available. An optional ground communication switch permits use of one com radio without turning on the battery master switch. Optional equipment is as detailed for the F33A Bonanza, except as noted.

DIMENSIONS, EXTERNAL AND AREAS: As for F33A except:

Length overall	8.38 m (27 ft 6 in)
Height overall	2.57 m (8 ft 5 in)
Wheelbase	2.39 m (7 ft 10¼ in)
Rear passenger/cargo door: Height	1.02 m (3 ft 4 in)
Width	1.14 m (3 ft 9 in)

DIMENSIONS, INTERNAL:

Cabin, aft of firewall: Length, incl extended baggage compartment	3.84 m (12 ft 7 in)
Max width	1.07 m (3 ft 6 in)
Max height	1.27 m (4 ft 2 in)
Volume	3.85 m³ (135.9 cu ft)

WEIGHTS AND LOADINGS:

Weight empty, standard	1,019 kg (2,247 lb)
Max T-O weight	1,655 kg (3,650 lb)
Max ramp weight	1,661 kg (3,663 lb)
Max wing loading	98.6 kg/m² (20.2 lb/sq ft)
Max power loading	7.40 kg/kW (12.2 lb/hp)

PERFORMANCE (max speed at minimum weight; cruising speeds at mid-cruise weight):

Max level speed	184 knots (340 km/h; 212 mph)
Max cruising speed:	
2,500 rpm at 1,830 m (6,000 ft)	176 knots (326 km/h; 202 mph)
2,300 rpm at 2,440 m (8,000 ft)	167 knots (309 km/h; 192 mph)
2,100 rpm at 1,830 m (6,000 ft)	160 knots (296 km/h; 184 mph)
2,100 rpm at 3,050 m (10,000 ft)	153 knots (283 km/h; 176 mph)

Stalling speed, power off:

flaps up	68 knots (126 km/h; 78 mph) IAS
30° flap	59 knots (109 km/h; 68 mph) IAS

Max rate of climb at S/L 368 m (1,210 ft)/min

Service ceiling	3,638 m (18,500 ft)
T-O run, no flaps	360 m (1,182 ft)
T-O to 15 m (50 ft), no flaps	666 m (2,185 ft)
T-O run, 12° flaps	296 m (971 ft)
T-O to 15 m (50 ft), 12° flaps	583 m (1,913 ft)
Landing from 15 m (50 ft)	449 m (1,473 ft)
Landing run	278 m (913 ft)

Range with 280 litres (74 US gallons) usable fuel, with allowances for engine start, taxi, T-O, climb and 45 min reserves at economy cruise power:

2,500 rpm at 3,660 m (12,000 ft)	876 nm (1,622 km; 1,009 miles)
2,300 rpm at 3,660 m (12,000 ft)	903 nm (1,672 km; 1,039 miles)
2,100 rpm at 1,830 m (6,000 ft)	914 nm (1,692 km; 1,052 miles)

BEECHCRAFT TURBO BONANZA MODEL B36TC

Beech introduced in 1979 a turbocharged version of the A36 Bonanza, following FAA certification on 7 December 1978, and 271 of the initial A36TC version were delivered. In 1982 Beech introduced the improved B36TC, with a wing of greater span and increased fuel capacity, and 170 of this model had been delivered by 1 January 1985. The B36TC is generally similar to the A36, except as follows:

WINGS: Wing section NACA 23010-5 at tip. Incidence 0° at tip.

POWER PLANT: One 223.7 kW (300 hp) Continental TSIO-520-UB turbocharged flat-six engine, driving a three-blade constant-speed metal propeller with spinner. Fixed engine cowl flaps. Two fuel tanks in each wing leading-edge, with total usable capacity of 386 litres (102 US gallons). Refuelling points above tanks. Oil capacity 11.5 litres (3 US gallons).

ACCOMMODATION AND SYSTEMS: Air-conditioning available as an option.

AVIONICS AND EQUIPMENT: As for Model A36, except that exhaust gas temperature gauge is not available. Turbine inlet temperature gauge is standard.

DIMENSIONS, EXTERNAL: As for Model A36, except:

Wing span	11.53 m (37 ft 10 in)
Wing chord at tip	0.91 m (3 ft 0 in)
Wing aspect ratio	7.6
Propeller diameter	1.98 m (6 ft 6 in)

DIMENSIONS, INTERNAL: As for Model A36

AREA:

Wings, gross	17.47 m² (188.1 sq ft)
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WEIGHTS AND LOADINGS:

Weight empty, standard	1,057 kg (2,330 lb)
Max T-O and landing weight	1,746 kg (3,850 lb)
Max ramp weight	1,753 kg (3,866 lb)
Max wing loading	100.1 kg/m² (20.5 lb/sq ft)
Max power loading	7.81 kg/kW (12.8 lb/hp)

PERFORMANCE (at max T-O weight, except speeds are at mid-cruise weight):

Max level speed at 6,700 m (22,000 ft)	213 knots (394 km/h; 245 mph)
Cruising speed at 7,620 m (25,000 ft):	
79% power	200 knots (370 km/h; 230 mph)
75% power	195 knots (361 km/h; 224 mph)
69% power	188 knots (348 km/h; 216 mph)
56% power	173 knots (320 km/h; 199 mph)
50% power	162 knots (300 km/h; 186 mph)
Stalling speed, power off:	
Flaps up	65 knots (120 km/h; 75 mph) IAS
30° flap	57 knots (106 km/h; 66 mph) IAS
Max rate of climb at S/L	319 m (1,049 ft)/min
Service ceiling	over 7,620 m (25,000 ft)
T-O run, 15° flaps	314 m (1,030 ft)
T-O to 15 m (50 ft), 15° flaps	652 m (2,141 ft)
Landing run	298 m (976 ft)
Range with max fuel, allowances for engine start, taxi, T-O, cruise climb, descent, and 45 min reserves at 50% power:	
79% power at 7,620 m (25,000 ft)	956 nm (1,770 km; 1,100 miles)
75% power at 7,620 m (25,000 ft)	984 nm (1,822 km; 1,132 miles)
69% power at 7,620 m (25,000 ft)	1,022 nm (1,892 km; 1,176 miles)
56% power at 6,100 m (20,000 ft)	1,092 nm (2,022 km; 1,256 miles)
50% power at 6,100 m (20,000 ft)	1,130 nm (2,092 km; 1,300 miles)

BEECHCRAFT LIGHTNING MODEL 38P

During the Summer of 1984 Beech announced that further development work on the turboprop Lightning Model 38P, of which two prototypes had been completed, was being suspended because of poor market conditions. A description of the aircraft appeared in the 1984-85 *Jane's*.

BEECHCRAFT DUCHESS 76

Production of the Duchess 76 four-seat twin-engined light aircraft has ceased. A total of 424 had been built by 1 January 1984. A description of the aircraft appeared in the 1984-85 edition.

BEECHCRAFT BARON MODEL E55

The Baron Model E55, which received FAA certification in November 1969, is no longer manufactured. Beech had delivered a total of 1,201 of this Baron series by 1 January 1984. A description of the aircraft may be found in the 1984-85 *Jane's*.

BEECHCRAFT BARON MODEL 58

In late 1969 Beech introduced a new version of the Baron, designated Model 58. Developed from the Baron D55, it differed by having the forward cabin section extended by 0.254 m (10 in), allowing the windscreen, passenger door, instrument panel and front seats to be moved forward and so provide a more spacious cabin. This change was made without affecting the wing main spar location, but the wheelbase was extended by moving the nosewheel forward, to improve ground handling. New features included double passenger/cargo doors on the starboard side of the cabin, extended propeller hubs, redesigned engine nacelles to improve cooling, and a fourth window on each side of the cabin. The Model 58 Baron was licensed by the FAA in the Normal category on 19 November 1969.

Beech had delivered 1,593 of this Baron series (including Baron 58Ps and 58TCs) by 1 January 1985.

TYPE: Four/six-seat cabin monoplane.



Beechcraft turbocharged Model 836TC Turbo Bonanza (Continental TSIO-520-UB flat-six engine)

WINGS: Cantilever low-wing monoplane. Wing section NACA 23016-5 at root, NACA 23010-t at tip. Dihedral 6°. Incidence 4° at root, 0° at tip. No sweepback. Each wing is a two-spar semi-monocoque box beam of conventional aluminium alloy construction, with beaded skins. Electrically operated single-slotted light alloy trailing-edge flaps, with beaded skins. Manually operated trim tab in port aileron. Pneumatic rubber de-icing boots optional.

FUSELAGE: Semi-monocoque aluminium alloy structure. Hat section longerons and channel type keels extend forward from the cabin section, making the support structure for the forward nose section and nosewheel gear an integral part of the fuselage.

TAIL UNIT: Cantilever all-metal structure. Elevators have smooth magnesium alloy skins. Manually operated trim tab in each elevator and in rudder. Pneumatic rubber de-icing boots optional.

LANDING GEAR: Electrically retractable tricycle type. Main units retract inward into wings, nosewheel aft. Beech oleo-pneumatic shock absorbers in all units. Steerable nosewheel with shimmy damper. Cleveland wheels, with mainwheel tyres size 6-50-8, pressure 3-59-3-96 bars (52-56 lb/sq in). Nosewheel tyre size 5-00-5, pressure 3-79-4-14 bars (55-60 lb/sq in). Cleveland ring-disc hydraulic brakes. Heavy duty brakes optional. Parking brake.

POWER PLANT: Two 224 kW (300 hp) Continental IO-550-C flat-six engines, each driving a McCauley three-blade constant-speed fully feathering metal propeller with spinner. The standard fuel system has a usable capacity of 514 litres (136 US gallons), with optional usable capacity of 628 litres (166 US gallons). Optional 'wet wingtip' installation also available, increasing usable capacity to 734 litres (194 US gallons).

ACCOMMODATION: Standard model has four individual seats in pairs in enclosed cabin, with door on starboard side. Single diagonal strap shoulder harness with inertia reel standard on all seats. Vertically adjusting pilot's seat is standard. Vertically adjusting co-pilot's seat, folding fifth

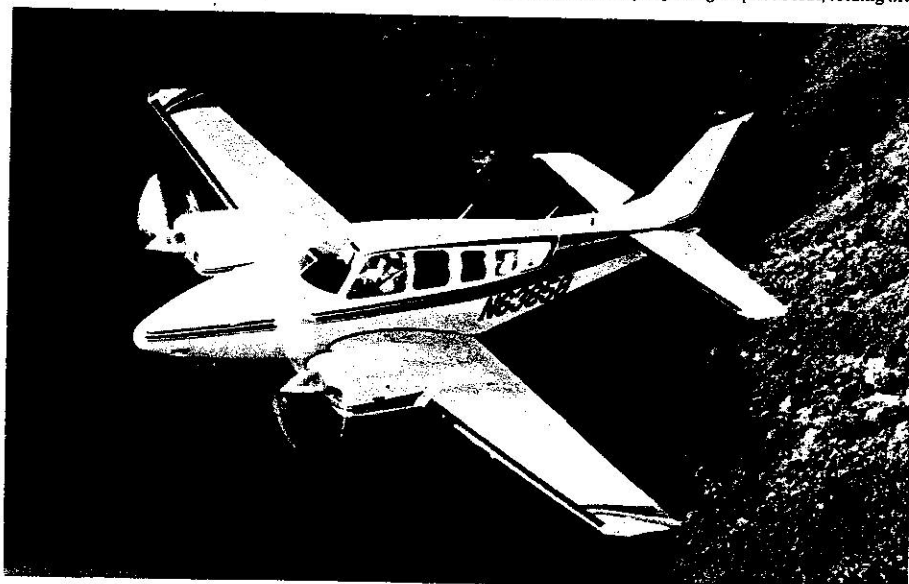
and sixth seats, or club seating comprising folding fifth and sixth seats and aft facing third and fourth seats, are optional. Executive writing desk available as option with club seating. Baggage compartment in nose, capacity 136 kg (300 lb). Double passenger/cargo doors on starboard side of cabin provide access to space for 181 kg (400 lb) of baggage or cargo behind the third and fourth seats. Pilot's storm window. Openable windows adjacent to the third and fourth seats are used for ground ventilation and as emergency exits. Cabin heated and ventilated. Windscreen defrosting standard.

SYSTEMS: Cabin heated by Janitrol 50,000 BTU heater, which serves also for windscreen defrosting. Oxygen system of 1.41 m³ (49.8 cu ft) or 1.87 m³ (66 cu ft) capacity optional. Electrical system includes two 28V 60A engine driven alternators with alternator failure lights and two 12V 25Ah batteries. Two 100A alternators optional. Hydraulic system for brakes only. Pneumatic pressure system for air driven instruments, and optional wing and tail unit de-icing system. Oxygen system optional. Cabin air-conditioning and windscreen electric anti-icing systems optional.

AVIONICS AND EQUIPMENT: Standard avionics include King KX 155-09 720-channel com transceiver with audio amplifier, 200-channel nav receiver with KI 208 VOR/LOC converter/indicator, KR 87 ADF with KI 227-00 indicator. King combined loop/sense antenna, microphone, headset, cabin speaker, nav and com antennae. Bendix, King and Sperry weather radars optional. Optional avionics by Collins, King and S-Tec. Standard equipment includes dual controls, blind-flying instruments, control wheel clock, outside air temperature gauge, sensitive altimeter, turn co-ordinator, pilot storm window, sun visors, ultra violet-proof windscreen and cabin windows, armrests, adjustable rudder pedals (retractable on starboard side), emergency locator transmitter, heated pitot head, instrument panel floodlights, map light, lighted trim tab position indicator, step and entrance door courtesy lights, reading lights, navigation and position lights, steerable taxi light, dual landing lights, cabin carpeting and soundproofing, headrests, heated fuel vents, cabin dome light, door ajar warning light, nose baggage compartment light, heated fuel and stall warning vanes, external polyurethane paint finish, EGT and CHT gauges, synchroscope, engine winterisation kit, towbar and external power socket. Options include a true airspeed indicator, engine and flight hour recorders, instantaneous vertical speed indicator, alternate static source, internally illuminated instruments, rotating beacon, strobe lights, electric windscreen anti-icing, wing ice detection light, static wicks, cabin club seating, executive writing desk, refreshment cabinet, cabin fire extinguisher, ventilation blower, super soundproofing, and approach plate holder.

DIMENSIONS, EXTERNAL:

Wing span	11.53 m (37 ft 10 in)
Wing chord: at root	2.13 m (7 ft 0 in)
at tip	0.90 m (2 ft 11.6 in)
Wing aspect ratio	7.16
Length overall	9.09 m (29 ft 10 in)
Height overall	2.90 m (9 ft 6 in)
Tailplane span	4.85 m (15 ft 11 in)
Wheel track	2.92 m (9 ft 7 in)
Wheelbase	2.72 m (8 ft 11 in)
Propeller diameter	1.93 m (6 ft 4 in)
Rear passenger/cargo doors:	
Max height	1.02 m (3 ft 4 in)
Width	1.14 m (3 ft 9 in)
Baggage door (fwd): Height	0.56 m (1 ft 10 in)
Width	0.64 m (2 ft 1 in)



Beechcraft Baron Model 58 four/six-seat cabin monoplane

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OHA-S-55 Bearcat. Designed for Orlando-developed combination spray and dry dispensing systems for quick conversion from liquid chemicals to dry fertilisers or seeds. Glassfibre chemical tank, capacity 946 litres (250 US gallons) standard. System also allows dry material to be carried internally rather than in underslung bucket. Also adaptable for firefighting. Orlando Helicopter Airways has obtained FAA approval for S-55 operators using Pratt & Whitney R-1340 engines under FAR Parts 91 (Standard), 137 (Agricultural) and 133 (External Load) to use motor fuel in their helicopters, and all Orlando-modified S-55s with R-1340 engines include this approval. Kysor cockpit air-conditioning system optional.

As noted in the Chinese section of this edition, an **OHA-S-55T** version of the Bearcat, with a 522 kW (700 shp) Avco Lycoming LTS 101-700A-3 turboshaft engine, is, together with the standard OHA-S-55, the subject of a co-production agreement with the People's Republic of China, where it will be known as the **Panda**.

Heavy Lift. External load model for logging, construction and fire-fighting operations, with 1,361 kg (3,000 lb) useful load.

ORLANDO/SIKORSKY S-58/H-34

Five remanufactured models of Sikorsky S-58/H-34 series helicopters are offered. The **Agricultural** and **Heavy**

Lift versions have a 1,137 kW (1,525 hp) Wright Cyclone R-1820-84 piston engine and are similarly equipped to equivalent versions of the Orlando S-55/H-19.

Heli-Camper. Similarly equipped to S-55 Heli-Camper, but with additional standard features: 8.73 m² (94 sq ft) living area with sculptured carpeting, entertainment centre, separate bar, sleeping accommodation for six passengers, full-size four-burner stove and 0.11 m³ (3.9 cu ft) refrigerator, 3,500W generator, super soundproofing, tinted glass and wraparound windscreen. 1,137 kW (1,525 hp) Wright Cyclone R-1820-84 radial piston engine. Fuel capacity 992 litres (262 US gallons); max T-O weight 5,670 kg (12,500 lb); cruising speed 96 knots (177 km/h; 110 mph); range 304 nm (563 km; 350 miles).

Orlando Airliner. High density version of the Sikorsky S-58T twin-turbine helicopter (see California Helicopters entry in this section). Standard equipment includes dual flight controls; toe brakes; hydraulic rotor brake; two independent servo control systems; cabin, cockpit, instrument, position, night and landing lights; rotating beacon; 24V battery, 1,071 litre (283 US gallon) fuel system; 2,268 kg (5,000 lb) capacity cargo sling; new paintwork; an extended passenger cabin; 18 additional cabin windows (for a total of 22); 18 airline-standard seats (15 forward facing and three rearward facing, standard or lightweight); Flightex soundproofing; tinted cabin windows; and ram air scoop for cabin

cooling. Options available for the Orlando Airliner include a 272 kg (600 lb) capacity rescue hoist; pop-out emergency floats; 568 litre (150 US gallon) capacity external auxiliary fuel tank; stereo system; toilet; air-conditioning; one-piece windshield; and customer choice of avionics. By early 1984 Orlando Helicopter Airways had delivered ten Orlando Airliners, including two for New York Helicopter Airways. The Orlando Airliner has a useful load of over 2,268 kg (5,000 lb), maximum speed at S/L of 120 knots (222 km/h; 138 mph), hovering ceiling OGE of 2,440 m (8,000 ft), and range, with auxiliary fuel and 20 min reserves, of 373 nm (692 km; 430 miles).

Flying Armoured Personnel Carrier. Military version of S-58T with extended passenger cabin and 18 opening cabin windows. The entire lower fuselage below the line of the cabin windows is protected with Kevlar soft armour plating. Fuel system similarly armoured, and incorporates self-sealing tanks. Pilot and co-pilot side windows are made from Lexan bullet resistant material, with 6.35 mm (¼ in) 'boiler plate' wing panels for added crew protection, and soft Kevlar armour around and under seats and in engine compartment. Two additional doors, each 0.56 m × 1.17 m (22 in × 46 in) on port side of fuselage, supplementing main cabin sliding door on starboard side. Provision for mounting heavy weapons at door and window stations, and for carrying external stores.

PIASECKI

PIASECKI AIRCRAFT CORPORATION

Elmwood Avenue, east of Calcon Hook Road, Sharon Hill, Philadelphia, Pennsylvania 19079
PRESIDENT: Frank N. Piasecki

PIASECKI HELI-STAT

The description of this hybrid VTOL vehicle has been transferred to the Lighter Than Air (Airships) section in this edition, to which it is considered more appropriate.

PIPER

PIPER AIRCRAFT CORPORATION (Subsidiary of Lear Siegler Inc)

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V. Donald Tierney (Assoc General Counsel)

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Effective 1 March 1984, Piper Aircraft became a subsidiary of Lear Siegler Inc. The manufacturing and R&D facilities at Lock Haven, Pennsylvania, and sheet metal plant at Piper, Pennsylvania, were closed during the second half of 1984. The last of 76,992 aircraft to be manufactured at Lock Haven, a Piper Mojave, left the plant in August 1984. In January 1985 Piper announced the phasing out of the Lakeland, Florida, manufacturing facility, and this was completed by October 1985. All Piper manufacturing activities are now concentrated at Vero Beach, where ground was broken on 1 March 1985 for a new 12,077 m² (130,000 sq ft) plant to accommodate production of the Cheyenne IIIA and 400LS turboprop aircraft which had formerly been built at Lakeland. Piper planned to manufacture some 600 aircraft in 1985.

In 1971, 1974 and 1977 respectively, Piper announced agreements with Chincul SA (which see) for the manufacture of a broad range of Piper products in Argentina; with EMBRAER (which see) for the development, production and marketing of Piper aircraft in Brazil; and with PZL Mielec (which see) of Poland, which produces a modified version of the Piper Seneca II light twin-engined aircraft, known as the M-20 Mewa, in that country.

PIPER (PA-28-161) WARRIOR II

Design of the Warrior began in June 1972, an important feature being replacement of the earlier constant chord wings of the Cherokee series by a longer span wing with tapered outer panels. As a result of its introduction the Warrior, which at that time had essentially the same 112 kW (150 hp) engine as the discontinued Cherokee Cruiser, was certificated at a maximum T-O weight 79 kg (175 lb) greater. First flight of a prototype was made on 17 October 1972, and FAA certification of the original Model PA-28-151 was granted on 9 August 1973.

The current PA-28-161 Warrior II version, first flown on 27 August 1976, has a 119 kW (160 hp) engine which operates on 100 octane low-lead fuel. The 1985 version introduces inertia reel shoulder harnesses for all occupants.

Two groups of optional equipment are available for the Warrior II as basic packages:



Piper Warrior II four-seat light cabin monoplane

Custom. Includes blind-flying instrumentation with 3 in gyros; clock; outside air temperature gauge; rate of climb and true airspeed indicators; instrument panel white backlighting; overhead red spotlight; cabin dome, avionics dimming, navigation, landing and taxi lights; rotating beacon; assist strap at door; aircraft step; engine primer system; engine driven vacuum pump with vacuum gauge; quick oil drain; wheel fairings; and towbar; adding 19.7 kg (43.4 lb) to basic empty weight.

Executive. As Custom package less rotating beacon, plus pilot's vertically adjustable seat, sun visors, alternate static source, heated pitot, emergency locator transmitter, strobe lights, external power socket, and 35Ah battery; adding 33.5 kg (73.9 lb) to basic empty weight.

In addition, nine optional avionics groups are available for factory installation in the Warrior II.

A total of 2,748 PA-28-161 Warriors had been sold by 1 April 1985.

TYPE: Four-seat cabin monoplane.

WINGS: Cantilever low-wing monoplane. Wing section NACA 65°-415 on inboard panels; outboard leading-edge incorporates modification No. 5 of NACA TN 2228. Dihedral 7°. Incidence 2° at root, -1° at tip. Sweepback at quarter-chord 5°. Light alloy single-spar structure with glassfibre wingtips. Plain ailerons of light alloy construction. Four-position manually actuated trailing-edge flaps of light alloy with ribbed skins.

FUSELAGE: Light alloy semi-monocoque structure with glassfibre nose cowl and tailcone.

TAIL UNIT: Cantilever structure of light alloy, except for glassfibre tips on fin and tailplane. Fin and rudder have ribbed light alloy skins. One-piece all-moving tailplane, with combined anti-servo and trim tab. Rudder trimmable, but no trim tab in rudder.

LANDING GEAR: Non-retractable tricycle type. Steerable nosewheel. Piper oleo-pneumatic shock absorbers; single wheel on each unit. Cleveland wheels with 4-ply tyres size 6-00-6 on main units, pressure 1.65 bars (24 lb/sq in). Cleveland nosewheel and 4-ply tyre size 5-00-5, pressure 1.65 bars (24 lb/sq in). Cleveland disc brakes. Parking brake. Glassfibre wheel fairings optional.

POWER PLANT: One 119 kW (160 hp) Avco Lycoming O-320-D3G flat-four engine, driving a Sensenich two-blade fixed-pitch metal propeller type 74DM6-0-60 with spinner. Fuel in two wing tanks, with total capacity of 189 litres (50 US gallons), of which 181.5 litres (48 US gallons) are usable. Refuelling point on upper surface of each wing. Oil capacity 7.5 litres (2 US gallons).

ACCOMMODATION: Four persons in pairs in enclosed cabin. Individual adjustable front seats with seat belts and shoulder harnesses; bench type rear seat with seat belts. Dual controls and brakes standard. Large door on starboard side. Baggage compartment at rear of cabin, with volume of 0.68 m³ (24 cu ft) and capacity of 91 kg (200 lb). External baggage door on starboard side. Heating, ventilation and windscreen defrosting standard.

SYSTEMS: Hydraulic system for brakes only. Electrical system powered by 14V 60A engine driven alternator. 12V 25Ah battery standard. 12V 35Ah battery optional (standard with Executive equipment package). Vacuum system for optional blind-flying instrumentation is available, complete with vacuum gauge, regulator, filter, and annunciator light. Piper Aire air-conditioning system optional.

AVIONICS AND EQUIPMENT: Nav/coms, ADF, autopilot, glideslope and marker beacon receivers, and transponders, by Bendix. Century Flight Systems, Collins, King, Narco and Piper are available in eight optional groups.

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together with an extensive range of other optional avionics. Standard equipment includes recording tachometer, sensitive altimeter, armrests, map pockets, pilot's storm window, stall warning device, carpeted floor, soundproofing, provisions for emergency locator transmitter, provisions for air-conditioning, full flow oil filter, tie-down rings and fuel tank quick drains. Optional equipment, in addition to that listed under Custom and Executive packages, includes encoding altimeter, digital clock, approach plate holder, engine hour recorder, co-pilot's vertically adjustable seat, pilot and co-pilot headrests, cabin fire extinguisher, inertia reel shoulder safety belts for rear seats, improved soundproofing, floor and/or overhead ventilation with booster fan, stainless steel control cables, tinted windows, carburettor ice detection system, lockable fuel tank caps, zinc chromate paint for aluminium parts and polyurethane paint for exterior finish.

DIMENSIONS, EXTERNAL:

Wing span	10.67 m (35 ft 0 in)
Wing chord: at root	1.60 m (5 ft 3 in)
at tip	1.07 m (3 ft 6 in)
Wing aspect ratio	7.24
Length overall	7.25 m (23 ft 9 in)
Height overall	2.22 m (7 ft 3 in)
Tailplane span	3.96 m (12 ft 11 in)
Wheel track	3.05 m (10 ft 0 in)
Wheelbase	2.03 m (6 ft 8 in)
Propeller diameter	1.88 m (6 ft 2 in)
Propeller ground clearance	0.21 m (8 in)
Cabin door: Height	0.89 m (2 ft 11 in)
Width	0.91 m (3 ft 0 in)
Baggage door: Height	0.51 m (1 ft 8 in)
Max width	0.56 m (1 ft 10 in)
Height to sill	0.71 m (2 ft 4 in)

DIMENSIONS, INTERNAL:

Cabin: Length (instrument panel to rear bulkhead)	2.46 m (8 ft 1 in)
Max width	1.05 m (3 ft 5 in)
Max height	1.24 m (4 ft 1 in)
Floor area	2.28 m ² (24.5 sq ft)
Volume (incl baggage area)	3.00 m ³ (106.0 cu ft)

AREAS:

Wings, gross	15.8 m ² (170 sq ft)
Ailerons (total)	1.23 m ² (13.2 sq ft)
Trailing-edge flaps (total)	1.36 m ² (14.6 sq ft)
Fin	0.69 m ² (7.4 sq ft)
Rudder	0.38 m ² (4.1 sq ft)
Tailplane, incl tab	2.46 m ² (26.5 sq ft)

WEIGHTS AND LOADINGS:

Weight empty, standard	611 kg (1,348 lb)
Max T-O and landing weight	1,106 kg (2,440 lb)
Max ramp weight	1,110 kg (2,447 lb)
Max wing loading	70.06 kg/m ² (14.35 lb/sq ft)
Max power loading	9.33 kg/kW (15.25 lb/hp)

PERFORMANCE (at max T-O weight):

Never-exceed speed	153 knots (282 km/h; 176 mph)
*Max level speed at S/L	127 knots (235 km/h; 146 mph)

***Best power cruising speed:**

75% power at 2,745 m (9,000 ft)	126 knots (233 km/h; 145 mph)
65% power at 3,810 m (12,500 ft)	118 knots (219 km/h; 136 mph)
55% power at 3,810 m (12,500 ft)	107 knots (198 km/h; 123 mph)

***Best econ cruising speed:**

75% power at 2,745 m (9,000 ft)	122 knots (225 km/h; 140 mph)
65% power at 3,810 m (12,500 ft)	116 knots (215 km/h; 134 mph)
55% power at 3,810 m (12,500 ft)	105 knots (195 km/h; 121 mph)

Stalling speed:

flaps up	56 knots (104 km/h; 65 mph) CAS
flaps down	50 knots (93 km/h; 58 mph) CAS
Max rate of climb at S/L	196 m (644 ft)/min
Service ceiling	3,355 m (11,000 ft)
T-O run	320 m (1,050 ft)
T-O to 15 m (50 ft)	503 m (1,650 ft)
Landing from 15 m (50 ft)	354 m (1,160 ft)
Landing run	191 m (625 ft)

*Range with max fuel with allowances for taxi, T-O, climb, and descent, and 45 min reserves at max range power:

at best power settings:	
75% power at 2,745 m (9,000 ft)	525 nm (972 km; 604 miles)
65% power at 3,810 m (12,500 ft)	553 nm (1,025 km; 637 miles)
55% power at 3,810 m (12,500 ft)	565 nm (1,047 km; 651 miles)
at best econ power settings:	
75% power at 2,745 m (9,000 ft)	590 nm (1,092 km; 679 miles)
65% power at 3,810 m (12,500 ft)	633 nm (1,173 km; 729 miles)
55% power at 3,810 m (12,500 ft)	640 nm (1,186 km; 737 miles)

*With optional wheel fairings

PIPER (PA-28-181) ARCHER II

On 9 October 1972 Piper introduced the Cherokee Challenger as successor to the Cherokee 180. In 1974 this was superseded by the Cherokee Archer, with the same basic airframe and power plant, but with many additional equipment and avionics options. In 1976 this aircraft was redesignated PA-28-181 Cherokee Archer II, and in 1978 introduced the tapered wings of the Warrior II.

The Archer II can be fitted with generally similar optional Custom and Executive equipment packages, as well as the nine optional avionics packages, which are available for the Warrior II. The equipment packages vary as follows:

Custom. As for Warrior II, except for deletion of tow-bar and engine primer system; adding 19.7 kg (43.4 lb) to basic empty weight.

Executive. As for Warrior II, plus exhaust gas temperature gauge, strobe lights for wings only, and deletion of tow-bar and engine primer system; adding 32.8 kg (72.3 lb) to basic empty weight.

The current version of the Archer II introduced as standard inertia reel shoulder harness and new exterior paint schemes and interior decor. A total of 9,643 Cherokee 180s and PA-28-181 Archer IIs had been sold by 1 April 1985. In June 1985 four Archer IIs entered service with Saudia Airlines as primary trainers.

TYPE: Four-seat cabin monoplane.

WINGS: Cantilever low-wing monoplane. Wing section NACA 652-415 on inboard panels; outboard leading-edge has modification No. 5 of NACA TN 2228. Dihedral 7°. Incidence 2° at root, -1° at tip. Sweepback at quarter-chord 5°. Light alloy single-spar structure with glassfibre wingtips. Plain ailerons of light alloy construction. Trailing-edge flaps constructed of light alloy with ribbed skins.

FUSELAGE: Aluminium alloy semi-monocoque structure. Glassfibre engine cowl.

TAIL UNIT: Cantilever structure of aluminium alloy, except for glassfibre tips on fin and tailplane. Fin and rudder have corrugated metal skin. One-piece all-moving horizontal surface with combined anti-servo and trim tab. Trim tab in rudder.

LANDING GEAR: Non-retractable tricycle type. Steerable nosewheel. Piper oleo-pneumatic shock absorbers. Cleveland wheels and Schenit tyres, size 6-00-6, 4-ply rating, on all three wheels. Mainwheel tyre pressure 1.65 bars (24 lb/sq in), nosewheel 1.24 bars (18 lb/sq in). Cleveland high capacity disc brakes. Parking brake. Wheel speed fairings optional.

POWER PLANT: One 134 kW (180 hp) Avco Lycoming O-360-A4M flat-four engine, driving a Sensenich two-blade fixed-pitch metal propeller with spinner. Fuel in two tanks in wing leading-edges, with total capacity of 189 litres (50 US gallons), of which 181.5 litres (48 US gallons) are usable. Oil capacity 7.5 litres (2 US gallons).

ACCOMMODATION: Four persons in pairs in enclosed cabin. Individual adjustable front seats, with dual controls; individual rear seats. Large door on starboard side. Baggage compartment at rear of cabin, with volume of 0.74 m³ (26 cu ft) and capacity of 90 kg (200 lb); door on starboard side. Hatches. Rear seats removable to provide 1.25 m³ (44 cu ft) cargo space. Accommodation heated and ventilated. Windscreen defrosting.

SYSTEMS: Optional Piper Aire air-conditioning system. Electrical system includes 14V 60A alternator and 12V 25Ah battery. 35Ah battery optional (standard with Executive equipment package). Hydraulic system for brakes only. Vacuum system optional.

AVIONICS AND EQUIPMENT: As for Warrior II, except that an engine priming system, sun visors and towbar are standard; an exhaust gas temperature gauge is optional for the Custom version.

DIMENSIONS, EXTERNAL AND INTERNAL:

As for Warrior II, except:	
Tailplane span	3.92 m (12 ft 10 in)
Wheelbase	2.00 m (6 ft 7 in)
Propeller diameter	1.93 m (6 ft 4 in)

AREAS: As for Warrior II**WEIGHTS AND LOADINGS:**

Weight empty, equipped (standard)	641 kg (1,413 lb)
Max T-O and landing weight	1,156 kg (2,550 lb)
Max ramp weight	1,160 kg (2,558 lb)
Max wing loading	73.2 kg/m ² (15.0 lb/sq ft)
Max power loading	8.63 kg/kW (14.17 lb/hp)

PERFORMANCE (at max T-O weight):

Never-exceed speed	148 knots (275 km/h; 171 mph) CAS
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***Max level speed at S/L**

	129 knots (239 km/h; 148 mph)
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***Best power cruising speed:**

75% power at 2,440 m (8,000 ft)	129 knots (239 km/h; 148 mph)
65% power at 3,660 m (12,000 ft)	125 knots (231 km/h; 144 mph)
55% power at 3,810 m (12,500 ft)	111 knots (206 km/h; 128 mph)

***Best econ cruising speed:**

75% power at 2,440 m (8,000 ft)	126 knots (233 km/h; 145 mph)
65% power at 3,660 m (12,000 ft)	122 knots (225 km/h; 140 mph)
55% power at 3,810 m (12,500 ft)	107 knots (198 km/h; 123 mph)

Stalling speed:

flaps up	59 knots (109 km/h; 68 mph) CAS
flaps down	53 knots (98 km/h; 61 mph) CAS

Max rate of climb at S/L 224 m (735 ft)/min

Service ceiling 4,160 m (13,650 ft)

Absolute ceiling 4,800 m (15,750 ft)

T-O run 265 m (870 ft)

T-O to 15 m (50 ft) 506 m (1,660 ft)

Landing from 15 m (50 ft) 424 m (1,390 ft)

Landing run 282 m (925 ft)

*Range with max fuel, allowances for taxi, T-O, climb and descent, and 45 min reserves at max range power:

at best power settings:	
75% power at 2,440 m (8,000 ft)	520 nm (963 km; 599 miles)
65% power at 3,660 m (12,000 ft)	565 nm (1,047 km; 650 miles)
55% power at 3,810 m (12,500 ft)	580 nm (1,075 km; 668 miles)
at best econ power settings:	
75% power at 2,440 m (8,000 ft)	600 nm (1,112 km; 691 miles)
65% power at 3,660 m (12,000 ft)	645 nm (1,196 km; 743 miles)
55% power at 3,810 m (12,500 ft)	670 nm (1,242 km; 772 miles)

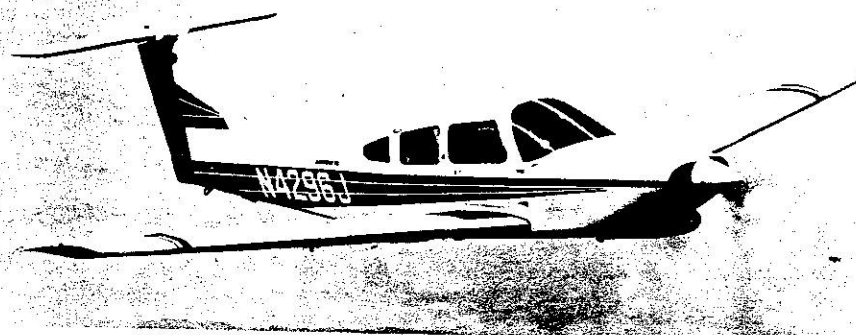
*With optional wheel fairings

PIPER (PA-28RT-201T) TURBO ARROW IV

The Piper Arrow derived from the Cherokee Arrow II, which was generally similar to the Cherokee Archer II but had a retractable landing gear, more powerful engine, and the untapered wings of the 1975 PA-28-180 Archer. In 1977, Piper updated this model by fitting long span tapered wings identical with those of the Archer II, but with increased fuel capacity, giving improved performance. The 1978 version of this aircraft was named Arrow III, the prototype of which flew for the first time on 16 September 1975, followed by the first production aircraft on 7 January 1977. Piper designation was PA-28R-201. The Turbo Arrow III differed by



Piper Archer II, which has the tapered wings introduced on the Warrior



Piper Turbo Arrow IV retractable gear four-seat cabin monoplane with T tail

having a turbocharged engine, mounted in a streamline cowl, and the first production example of this version flew on 1 December 1976.

In 1979 Piper introduced an improved model with an all-moving T tailplane, but production of the Arrow IV with normally aspirated Avco Lycoming IO-360-C1C6 engine ended in 1982. The Turbo Arrow IV, which remains available, embodies the improvements detailed for the Archer II. A total of 860 Turbo Arrow IVs had been sold by 1 April 1985.

Two groups of optional equipment are available for the Turbo Arrow IV as recommended packages:

Custom. Includes blind-flying instrumentation with 3 in gyros; electric clock; outside air temperature gauge; rate of climb and true airspeed indicators; vacuum system for gyro instruments; a basic lighting package comprising instrument panel white backlighting with overhead red lighting, cabin dome and radio dimming lights; landing, navigation, taxi and wing strobe lights; assist strap; and entrance step; adding 15.4 kg (34.0 lb) to aircraft basic weight.

Executive. As Custom package, plus alternate static source; heated pitot; landing gear sensor; emergency locator transmitter; pilot's vertically adjustable seat; inertia reel shoulder harnesses for all seats; 35Ah battery; and external power socket; adding 22.1 kg (48.7 lb) to aircraft basic weight.

In addition to the above equipment, the avionics packages which are available for the Warrior II are also available optionally for the Turbo Arrow IV.

The description of the Archer II applies also to the Turbo Arrow IV, except for the following details:

TAIL UNIT: Cantilever T tail of light alloy construction. All-moving tailplane with trim tab. Rudder trim.

LANDING GEAR: Tricycle type, retracted hydraulically with an electrically operated pump supplying the hydraulic pressure. In addition to the usual 'gear up' warning horn and red light, an automatic extension system drops the landing gear automatically if power is reduced and airspeed drops below 91 knots (169 km/h; 105 mph). The sensing system consists of a small probe mounted on the port side of the fuselage. Being located in the propeller slipstream, it can differentiate between a climb with power on and an approach to land with power reduced. A free-fall emergency extension system is also fitted. An 'anti-retraction' system guards against premature retraction of the landing gear below an airspeed of 74 knots (137 km/h; 85 mph) at take-off, or accidental retraction on the ground. There is also a manual override lever by which the pilot can hold the landing gear retracted as airspeed falls below 91 knots (169 km/h; 105 mph). Main units retract inward into wings, nose unit rearward. All units fitted with oleo-pneumatic shock absorbers. Main wheels and tyres size 6-00-6, 6-ply rating, pressure 2-07 bars (30 lb/sq in). Nosewheel and tyre size 5-00-5, 4-ply rating, pressure 1-86 bars (27 lb/sq in). High capacity dual hydraulic disc brakes and parking brake.

POWER PLANT: One 149 kW (200 hp) Continental TSIO-360-FB flat-six turbocharged engine, driving a Hartzell two-blade constant-speed metal propeller with spinner. A three-blade propeller is optional, but essential if optional built-in oxygen system is installed. Fuel tanks in wing leading-edges with total capacity of 291 litres (77 US gallons), of which 273 litres (72 US gallons) are usable. Oil capacity 7.5 litres (2 US gallons).

SYSTEMS: Generally as for Archer II and Warrior II, plus electro-hydraulic system for landing gear actuation. An oxygen system of 1.37 m³ (48.3 cu ft) capacity is available optionally.

AVIONICS AND EQUIPMENT: Optional avionics and standard equipment generally as detailed for Warrior II, plus cylinder head temperature gauge, exhaust gas temperature gauge, 65A electric generator, dual range electric auxiliary fuel pump as standard equipment. Optional equipment as listed in Custom and Executive paragraphs and for Archer II and Warrior II, plus cold weather start kit.

DIMENSIONS, EXTERNAL:

Wing span	10.80 m (35 ft 5 in)
Wing chord: at root	1.60 m (5 ft 3 in)

at tip	1.07 m (3 ft 6 1/4 in)
Length overall	8.33 m (27 ft 3 3/4 in)
Height overall	2.52 m (8 ft 3 3/4 in)
Tailplane span	3.30 m (10 ft 10 in)
Wheel track	3.19 m (10 ft 5 1/2 in)
Wheelbase	2.39 m (7 ft 10 1/4 in)
Propeller diameter	1.93 m (6 ft 4 in)
Cabin door (stbd): Width	0.91 m (3 ft 0 in)
Height	0.89 m (2 ft 11 in)
Baggage door (stbd): Width	0.56 m (1 ft 10 in)
Height	0.51 m (1 ft 8 in)

DIMENSIONS, INTERNAL:

Cabin:	
Length, panel to rear bulkhead	2.46 m (8 ft 1 in)
Max width	1.05 m (3 ft 5 1/2 in)
Max height	1.24 m (4 ft 1 in)
Volume (incl baggage area)	3.00 m ³ (106 cu ft)

AREA:

Wings, gross	15.79 m ² (170 sq ft)
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WEIGHTS AND LOADINGS:

Weight empty	767 kg (1,692 lb)
Max T-O weight	1,315 kg (2,900 lb)
Max ramp weight	1,321 kg (2,912 lb)
Max wing loading	83.29 kg/m ² (17.06 lb/sq ft)
Max power loading	8.83 kg/kW (14.5 lb/hp)

PERFORMANCE (at max T-O weight):

Never-exceed speed	186 knots (344 km/h; 214 mph) CAS
Max level speed at 4,265 m (14,000 ft)	178 knots (330 km/h; 205 mph)
Best power cruising speed at optimum altitude:	
75% power	172 knots (319 km/h; 198 mph)
65% power	167 knots (309 km/h; 192 mph)
55% power	157 knots (291 km/h; 181 mph)
Best econ cruising speed at optimum altitude:	
75% power	168 knots (311 km/h; 193 mph)
65% power	164 knots (304 km/h; 189 mph)
55% power	153 knots (284 km/h; 176 mph)

Stalling speed:

flaps up	63 knots (117 km/h; 72 mph) CAS
flaps down	58 knots (108 km/h; 67 mph) CAS
Max rate of climb at S/L	287 m (940 ft)/min
Max approved operating altitude	6,100 m (20,000 ft)
T-O run	338 m (1,110 ft)
T-O to 15 m (50 ft)	494 m (1,620 ft)
Landing from 15 m (50 ft)	475 m (1,560 ft)
Landing run	197 m (645 ft)

Range with max fuel, allowances for taxi, T-O, climb and descent, and 45 min reserves at max range power:

at best power settings:	
75% power	695 nm (1,287 km; 800 miles)
65% power	725 nm (1,343 km; 835 miles)
55% power	775 nm (1,435 km; 892 miles)
at best econ power settings:	
75% power	790 nm (1,465 km; 910 miles)
65% power	830 nm (1,539 km; 956 miles)
55% power	900 nm (1,667 km; 1,036 miles)

PIPER (PA-28-236) DAKOTA

Piper introduced in 1978 an addition to the Warrior, Archer, Arrow line known as the PA-28-236 Dakota, which differs primarily by having a 175 kW (235 hp) Avco Lycoming engine to provide increased performance, and increased capacity fuel tanks to cater for this power plant. Like the related aircraft mentioned earlier, it is available with a variety of optional factory installed avionics packages, and also two operational groups as follows:

Custom. As detailed for Warrior II, but with deletion of engine primer system, quick oil drain and towbar; adding 20.1 kg (44.4 lb) to basic empty weight.

Executive. As detailed for Warrior II, but with deletion of sun visors, engine primer system, quick oil drain and towbar; and addition of exhaust gas temperature gauge; adding 31.6 kg (69.7 lb) to basic empty weight.

Licence assembly of the Dakota was undertaken by the Chilean aircraft industry (ENAE, which see); a total of 27 was completed. Piper sales of the PA-28-236 Dakota totalled 689 at 1 April 1985.

The description of the Archer II applies also to the Dakota, except as follows:

POWER PLANT: One 175 kW (235 hp) Avco Lycoming O-540-J3A5D flat-six engine, driving a Hartzell two-blade constant-speed metal propeller with spinner. Two integral fuel tanks in each wing, with a total capacity of 291.5 litres (77 US gallons), of which 272.5 litres (72 US gallons) are usable. Refuelling points on upper surface of each wing. Oil capacity 11.5 litres (3 US gallons).

AVIONICS AND EQUIPMENT: As for the Archer II and Warrior II, nine optional factory installed avionics packages are available, as well as a wide range of other avionics equipment to customer's requirements. Standard equipment as for Warrior II, plus quick oil drain valve. Optional equipment includes items provided in the Custom and Executive packages, plus engine hour recorder, outside air temperature gauge, digital clock, approach plate holder, co-pilot's vertically adjustable seat, cabin fire extinguisher, de luxe interior, shoulder safety belts with inertia reel for rear seats, super sound-proofing, overhead air vents, Piper Aire air-conditioning, stainless steel control cables, tinted windows, ventilation fan, lockable fuel tank caps, heavy duty tyres and brakes, and zinc chromate treatment of aluminium parts.

DIMENSIONS, EXTERNAL AND INTERNAL: As for Archer II except:

Length overall	7.54 m (24 ft 8 1/2 in)
Height overall	2.18 m (7 ft 2 in)
Wheelbase	1.98 m (6 ft 6 in)

WEIGHTS AND LOADINGS:

Weight empty	730 kg (1,610 lb)
Max T-O weight	1,361 kg (3,000 lb)
Max ramp weight	1,365 kg (3,011 lb)
Max wing loading	85.93 kg/m ² (17.6 lb/sq ft)
Max power loading	7.78 kg/kW (12.8 lb/hp)

PERFORMANCE (at max T-O weight):

Max level speed at S/L	148 knots (274 km/h; 170 mph)
Best power cruising speed at optimum altitude:	
75% power	144 knots (267 km/h; 166 mph)
65% power	139 knots (257 km/h; 160 mph)
55% power	130 knots (241 km/h; 150 mph)
Best econ cruising speed at optimum altitude:	
75% power	139 knots (258 km/h; 160 mph)
65% power	134 knots (248 km/h; 154 mph)
55% power	126 knots (234 km/h; 145 mph)
Stalling speed:	
flaps up	63 knots (117 km/h; 73 mph) CAS
flaps down	56 knots (104 km/h; 65 mph) CAS
Max rate of climb at S/L	338 m (1,110 ft)/min
Service ceiling	5,335 m (17,500 ft)
Absolute ceiling	5,945 m (19,500 ft)
T-O run	270 m (886 ft)
T-O to 15 m (50 ft)	371 m (1,216 ft)
Landing from 15 m (50 ft):	
standard brakes	526 m (1,725 ft)
heavy duty brakes	466 m (1,530 ft)



Piper Dakota, a four-seat aircraft with non-retractable landing gear

ME 17

Landing run: standard brakes	252 m (825 ft)
heavy duty brakes	195 m (640 ft)
Range with max fuel, allowances for taxi, T-O, climb, cruise, descent, and 45 min reserves at max range power:	
at best power settings at optimum altitude:	
75% power	650 nm (1,205 km; 748 miles)
65% power	710 nm (1,315 km; 817 miles)
55% power	750 nm (1,390 km; 863 miles)
at best econ power settings at optimum altitude:	
75% power	720 nm (1,334 km; 829 miles)
65% power	770 nm (1,427 km; 886 miles)
55% power	810 nm (1,501 km; 933 miles)

PIPER PA-28R-300XBT

Chilean Air Force name: Pillán

To meet the requirements of the Chilean Air Force for a relatively inexpensive basic/intermediate trainer with full aerobatic capability, Piper developed this derivative of the Cherokee series, which embodies standard major components from various models within the series. The first two Pilláns were built by Piper. The next three were supplied in kit form for assembly in Chile, and the first of these flew on 30 January 1982.

A detailed description of the Pillán, now in production also for the Spanish Air Force, can be found in the Chilean section.

PIPER (PA-32-301) SARATOGA

On 17 December 1979, Piper announced that it had begun production of a new family of six/seven-seat single-engine aircraft known as Saratogas, to replace the PA-32 SIX 300 and T tail Lance series (all described in 1979-80 *Jane's*). All Saratogas have a common airframe, with a conventional low-mounted tailplane and a semi-tapered wing of longer span than the wing of the aircraft they supersede.

Three versions of the Saratoga are available:

PA-32-301 Saratoga. Basic version, as described in detail.

PA-32R-301 Saratoga SP. Retractable landing gear version of the Saratoga, described separately.

PA-32R-301T Turbo Saratoga SP. Turbocharged version of the Saratoga SP, described separately.

These aircraft are available with eight optional factory installed avionics packages, and also two operational groups as follows:

Custom. Includes blind-flying instrumentation with 3 in attitude and directional gyros; electric clock; outside air temperature gauge; pictorial turn rate, rate of climb and true airspeed indicators; basic lighting package which comprises avionics dimming, instrument panel white back-lighting and overhead red lighting; waterfall switch panel light; cabin dome, map and reading lights; landing/taxi and navigation lights; rotating beacon; wing strobe lights; assist straps; entrance step; wheel fairings; vacuum system with vacuum gauge, regulator, filter and warning lights; and 35Ah battery; adding 22.6 kg (49.8 lb) to basic empty weight.

Executive. As Custom package, plus alternate static source; emergency locator transmitter; heated pitot and landing gear sensor; pilot's vertically adjustable seat; inertia reel shoulder harnesses for pilot and co-pilot seats; courtesy lighting package comprising forward baggage compartment light, and forward and rear cabin door lights; and external power socket; adding 30.9 kg (68.2 lb) to basic empty weight.

All current versions of the Saratoga have as standard inertia reel shoulder harness for all forward-facing seats, new exterior paint schemes and interior decor. Latest options include leather seats, 'nose baggage door ajar' warning light and wider range of avionics. Electrically actuated flaps were introduced on 1985 models.

At 1 April 1985, sales of Saratoga and Turbo Saratoga models totalled 303 and 120 respectively.

Type: Six-seat cabin monoplane.

WINGS: Cantilever low-wing monoplane. Light alloy single-spar structure with glassfibre wingtips. Plain ailerons of light alloy construction. Electrically operated trailing-edge flaps of light alloy construction with ribbed skins.

FUSELAGE: Conventional semi-monocoque structure of light alloy. Glassfibre engine cowlings.

TAIL UNIT: Cantilever structure of light alloy, except for glassfibre tips on fin and tailplane. Fin and rudder have ribbed metal skins. One-piece all-moving horizontal surface with combined anti-servo and trim tab. Trim-mable rudder.

LANDING GEAR: Non-retractable tricycle type. Steerable nosewheel. Piper oleo-pneumatic shock absorbers. Single wheel on each unit. Mainwheel tyres size 6-00-6, 8-ply rating, pressure 3.79 bars (55 lb/sq in). Nosewheel tyre size 5-00-5, 6-ply rating, pressure 2.41 bars (35 lb/sq in). Nosewheel tyre size 6-00-6 optional. High capacity disc brakes. Parking brake. Wheel fairings optional. Heavy duty brakes and tyres optional.

POWER PLANT: One 224 kW (300 hp) Avco Lycoming IO-540-K1G5 flat-six engine, driving a Hartzell two-blade constant-speed metal propeller with spinner. Three-blade propeller optional. Turbo Saratoga as detailed in model listings. Two fuel tanks in each wing with combined capacity of 405 litres (107 US gallons), of which 386 litres



Piper PA-32-301 Saratoga six-seat cabin monoplane

(102 US gallons) are usable. Refuelling points on wing upper surface. Oil capacity 11.5 litres (3 US gallons).

ACCOMMODATION: Enclosed cabin, seating six people in pairs. Dual controls and toe brakes standard. Two forward hinged doors, one on starboard side forward, overwing; one on port side at rear end of cabin. Space for 45 kg (100 lb) baggage at rear of cabin, with external baggage/utility door on port side. Additional baggage space, capacity 45 kg (100 lb), between engine fireproof bulkhead and instrument panel, with external door on starboard side. Pilot's storm window. Sun visors. Accommodation heated and ventilated. Windscreen defroster standard.

SYSTEMS: Piper Aire air-conditioning, vacuum and oxygen systems optional, including a built-in oxygen system of 1.81 m³ (64.0 cu ft) capacity. Hydraulic system for brakes only. Electrical system includes a 14V 60A engine driven alternator, and 12V 25Ah battery. 35Ah battery optional (standard with Custom and Executive packages).

AVIONICS AND EQUIPMENT: A wide range of avionics is available to customer's requirements, including weather radar with internal wing mounted antenna. Standard equipment includes recording tachometer, sensitive altimeter, dual cylinder head temperature and exhaust gas temperature gauges, fore and aft adjustable pilot and co-pilot seats with shoulder and safety belts, armrests, map pockets, glove compartment, soundproofing, stall warning device, provisions for emergency locator transmitter, alternator failure and low oil pressure warning lights, full flow oil filter, fuel quick drains, oil quick drain, jack pads, stowable towbar, and tiedown rings. Optional equipment includes items detailed in Custom and Executive packages, plus digital clock; encoding altimeter; engine hour recorder; true airspeed indicator; de luxe interior groups including headrests, fold-down armrests, window curtains, club seating arrangement, refreshment console; cabin fire extinguisher; tinted windows; stainless steel control cables; ventilation fan; super soundproofing; and zinc chromate treatment of aluminium parts.

DIMENSIONS, EXTERNAL:

Wing span	11.02 m (36 ft 2 in)
Length overall: Saratoga	8.44 m (27 ft 8 1/2 in)
Turbo Saratoga	8.59 m (28 ft 2 in)
Height overall	2.49 m (8 ft 2 in)
Tailplane span	3.94 m (12 ft 11 in)
Wheel track	3.23 m (10 ft 7 in)
Wheelbase	2.36 m (7 ft 9 in)
Cabin door (fwd, stbd): Height	0.89 m (2 ft 11 in)
Width	0.91 m (3 ft 0 in)
Cabin door (rear, port): Height	0.72 m (2 ft 4 1/2 in)
Width	0.71 m (2 ft 4 in)
Baggage door (fwd): Height	0.41 m (1 ft 4 in)
Width	0.56 m (1 ft 10 in)
Baggage/utility door (rear): Height	0.52 m (1 ft 8 1/2 in)
Width	0.66 m (2 ft 2 in)

DIMENSIONS, INTERNAL:

Cabin: Length (instrument panel to rear bulkhead)	3.15 m (10 ft 4 1/4 in)
Max width	1.24 m (4 ft 1 in)
Max height	1.07 m (3 ft 6 in)
Volume (incl rear baggage area)	5.53 m ³ (195.3 cu ft)
Baggage compartment volume:	
forward	0.20 m ³ (7.0 cu ft)
rear	0.49 m ³ (17.3 cu ft)

AREA:

Wings, gross	16.56 m ² (178.3 sq ft)
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WEIGHTS AND LOADINGS:

Weight empty	878 kg (1,935 lb)
Max T-O weight	1,633 kg (3,600 lb)
Max ramp weight	1,640 kg (3,615 lb)
Max wing loading	98.6 kg/m ² (20.2 lb/sq ft)
Max power loading	7.30 kg/kW (12.0 lb/hp)

PERFORMANCE (at max T-O weight except where indicated):

Max level speed at optimum altitude	152 knots (282 km/h; 175 mph)
Best power cruising speed at optimum altitude:	
at 75% power	150 knots (278 km/h; 173 mph)
at 65% power	146 knots (270 km/h; 168 mph)
at 55% power	136 knots (252 km/h; 156 mph)
Best econ cruising speed at optimum altitude:	
at 75% power	148 knots (274 km/h; 170 mph)
at 65% power	144 knots (267 km/h; 166 mph)
at 55% power	133 knots (246 km/h; 153 mph)
Stalling speed:	
flaps up	66 knots (122 km/h; 76 mph) CAS
flaps down	60 knots (111 km/h; 69 mph) CAS
Max rate of climb at S/L	302 m (990 ft)/min
Service ceiling	4,875 m (16,000 ft)
T-O run: 2-blade propeller	361 m (1,183 ft)
3-blade propeller	309 m (1,013 ft)
T-O to 15 m (50 ft): 2-blade propeller	536 m (1,759 ft)
3-blade propeller	479 m (1,573 ft)
Landing from 15 m (50 ft):	
standard brakes	491 m (1,612 ft)
heavy duty brakes	466 m (1,530 ft)
Landing run: standard brakes	223 m (732 ft)
heavy duty brakes	198 m (650 ft)

Range with max fuel, allowances for taxi, T-O, climb, descent, and 45 min reserves at max range power:

best power settings at optimum altitude:	
75% power	745 nm (1,381 km; 858 miles)
65% power	805 nm (1,492 km; 927 miles)
55% power	849 nm (1,573 km; 978 miles)
best econ power settings at optimum altitude:	
75% power	823 nm (1,525 km; 948 miles)
65% power	911 nm (1,688 km; 1,049 miles)
55% power	960 nm (1,778 km; 1,105 miles)

PIPER (PA-32R-301) SARATOGA SP

This is a retractable landing gear model of the Saratoga, of which two versions were introduced for 1980:

PA-32R-301 Saratoga SP. Basic version, similar to the PA-32-301 Saratoga but with retractable landing gear and new options as described.

PA-32R-301T Turbo Saratoga SP. As Saratoga SP, but power plant comprises one 224 kW (300 hp) Avco Lycoming TIO-540-SIAD flat-six turbocharged engine, driving a Hartzell two-blade constant-speed metal propeller. (Three blade propeller optional.) Additional standard equipment for Turbo Saratoga SP includes cylinder head and exhaust gas temperature gauges, engine overboost warning light and manually controlled cowl flaps. Options available for this version include electric propeller and windscreen de-icing, pneumatic wing and tail surface de-icing, and a built-in oxygen system.

Both models are available with eight optional factory installed avionics packages, including a King flight director, and with the following operational groups:

Custom. As detailed for Saratoga/Turbo Saratoga, but with deletion of wheel speed fairings and rotating beacon; adding 10.9 kg (24.0 lb) to basic empty weight.



Piper PA-32R-301T Turbo Saratoga SP

Executive. As detailed for Saratoga/Turbo Saratoga, with deletions as above, the entire package adding 22.4 kg (49.4 lb) to basic empty weight.

Both versions of the Saratoga SP for 1985 introduced as standard inertia reel safety harnesses for all forward facing seats and electrically operated trailing-edge flaps. At 1 April 1985 sales of the Saratoga SP and Turbo Saratoga SP totalled 371 and 362 respectively.

The description of the Saratoga/Turbo Saratoga applies also to the retractable landing gear versions, except as follows:

WINGS, TAIL UNIT: Pneumatic de-icing system for wing and tail unit leading-edges is available optionally for the Turbo Saratoga SP.

LANDING GEAR: Hydraulically retractable tricycle type with single wheel on each unit. Main units retract inward, nosewheel aft. Integrated automatic system which extends the landing gear at 102 knots (189 km/h; 17 mph), unless overridden by pilot. Emergency free-fall extension system. Piper oleo-pneumatic shock absorbers. Steerable nosewheel. Mainwheels and tyres size 6-00-6, 8-ply rating, pressure 2-62 bars (38 lb/sq in). Nosewheel and tyre size 5-00-5, 6-ply rating, pressure 2-41 bars (35 lb/sq in). High capacity hydraulic disc brakes. Parking brake. Heavy duty tyres and brakes optional.

POWER PLANT: As for Saratoga except as detailed for Turbo Saratoga SP. Propeller de-icing optional for Turbo Saratoga SP.

ACCOMMODATION: As for Saratoga, but pilot's electrically heated windscreen plate optional for Turbo Saratoga SP.

SYSTEMS: As for Saratoga, but electrically driven hydraulic pump for landing gear actuation; built-in oxygen system of 1.81 m³ (64 cu ft) capacity and 95A alternator available optionally for Turbo Saratoga SP.

AVIONICS AND EQUIPMENT: Generally as listed for Saratoga, with amendments as noted in this entry, plus optional wing ice inspection light for Turbo Saratoga SP.

DIMENSIONS, EXTERNAL: As for Saratoga, except:

Length overall: Saratoga SP	8.45 m (27 ft 8 1/2 in)
Turbo Saratoga SP	8.69 m (28 ft 6 in)
Height overall	2.59 m (8 ft 6 in)
Wheel track	3.39 m (11 ft 1 1/2 in)
Wheelbase	2.43 m (7 ft 11 1/2 in)

WEIGHTS AND LOADINGS (A: Saratoga SP; B: Turbo Saratoga SP): As for Saratoga/Turbo Saratoga, except:

Weight empty: A	907 kg (1,999 lb)
B	943 kg (2,078 lb)

PERFORMANCE (at max T-O weight, except where indicated. A: Saratoga SP/two-blade propeller; B: Turbo Saratoga SP/two-blade propeller; C: Saratoga SP/three-blade propeller; D: Turbo Saratoga SP/three-blade propeller):

Max level speed at optimum altitude:	
A	164 knots (304 km/h; 189 mph)
B	191 knots (354 km/h; 220 mph)
D	195 knots (361 km/h; 225 mph)

Best power cruising speed at optimum altitude:	
at 75% power: A	159 knots (295 km/h; 183 mph)
B	177 knots (328 km/h; 204 mph)
at 65% power: A	153 knots (283 km/h; 176 mph)
B	166 knots (307 km/h; 191 mph)
at 55% power: A	144 knots (267 km/h; 166 mph)
B	152 knots (282 km/h; 175 mph)

Best econ cruising speed at optimum altitude:	
at 75% power: A	157 knots (291 km/h; 181 mph)

B	171 knots (317 km/h; 197 mph)
at 65% power: A	151 knots (280 km/h; 174 mph)
B	160 knots (296 km/h; 184 mph)
at 55% power: A	141 knots (261 km/h; 162 mph)
B	145 knots (269 km/h; 167 mph)

Stalling speed, flaps up:	
A	65 knots (121 km/h; 75 mph) CAS
B	63 knots (118 km/h; 73 mph) CAS

Stalling speed, flaps down:	
A	59 knots (110 km/h; 68 mph) CAS
B	60 knots (111 km/h; 69 mph) CAS

Max rate of climb at S:L: A	308 m (1,010 ft)/min
B	341 m (1,120 ft)/min

Service ceiling: A	5,090 m (16,700 ft)
*B	6,100 m (20,000 ft)
Absolute ceiling: A	5,595 m (18,350 ft)
*B	6,100 m (20,000 ft)

T-O run, and T-O to 15 m (50 ft):
as for Saratoga and Turbo Saratoga

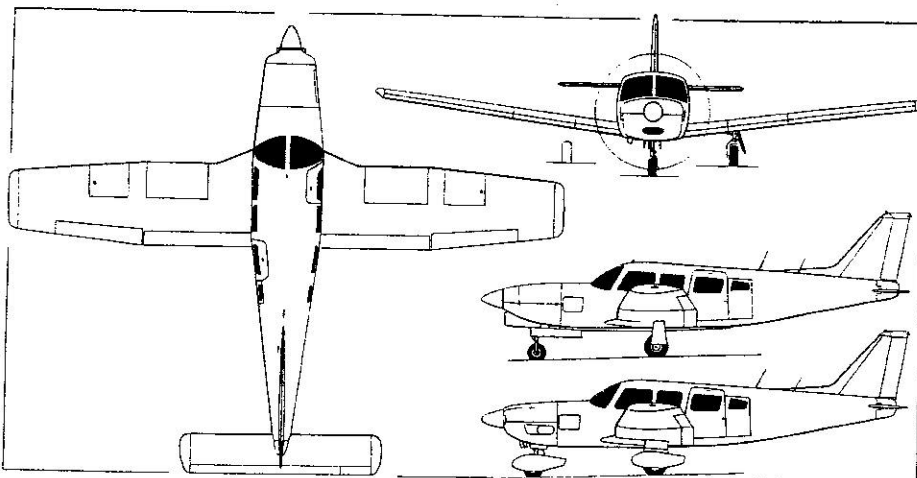
Landing from 15 m (50 ft), and landing run:
as for Saratoga and Turbo Saratoga

Range with max fuel, allowances for taxi, T-O, climb, descent, and 45 min reserves at max range power:

Best power settings at optimum altitude:	
75% power: A	784 nm (1,453 km; 903 miles)
B	730 nm (1,353 km; 840 miles)
65% power: A	828 nm (1,533 km; 953 miles)
B	790 nm (1,465 km; 910 miles)
55% power: A	869 nm (1,611 km; 1,001 miles)
B	843 nm (1,562 km; 971 miles)

Best econ power settings at optimum altitude:	
75% power: A	865 nm (1,603 km; 996 miles)
B	844 nm (1,564 km; 972 miles)
65% power: A	937 nm (1,736 km; 1,079 miles)
B	920 nm (1,704 km; 1,059 miles)
55% power: A	983 nm (1,822 km; 1,132 miles)
B	950 nm (1,760 km; 1,094 miles)

*Max certificated altitude



Piper PA-32R-301T Turbo Saratoga SP, with additional side view (bottom right) of PA-32-301 Saratoga (Pilot Press)

PIPER (PA-31-350) CHIEFTAIN

Announced on 11 September 1972, the PA-31-350 Chieftain is a lengthened version of the discontinued Navajo C/R, with the fuselage extended by 0.61 m (2 ft 0 in) and with 261 kW (350 hp) counter-rotating turbocharged engines.

The main cabin floor is designed to carry heavy concentrated loads of up to 976 kg/m² (200 lb/sq ft) and, in addition to the 6.14 m³ (217 cu ft) of cargo space in the main cabin, 91 kg (200 lb) of cargo or baggage can be carried in the forward nose compartment, and 68 kg (150 lb) in the rear of each engine nacelle.

Two optional interior groups of equipment are available, depending upon the proposed use of the aircraft:

Standard Interior Group. Six adjustable seats. Pilot and co-pilot seats adjust fore, aft, vertically and tilt, have headrests, folding armrests and under-seat oxygen mask storage. Passenger seats in club arrangement with headrests, folding armrests, seat belts, and magazine storage pockets on each seat back. Inertia reel safety harnesses standard on all forward-facing seats. 'No smoking/Fasten seat belt' sign. Pull-curtain cockpit divider. Choice of eleven interior colour schemes.

Commuter Interior Group. Ten forward facing seats. Eight adjustable and reclining passenger seats with oxygen mask stowage and magazine storage as above. 'No smoking/Fasten seat belt' sign. Pull-curtain cockpit divider. Choice of nine interior colour schemes. Adds 39.5 kg (87 lb) to basic empty weight.

Two optional equipment groups are available for the Chieftain, as follows:

Co-pilot Flight Instrument Group. Includes blind-flying instrumentation with 3 in attitude and directional gyros, clock, rate of climb indicator, sensitive altimeter, true airspeed indicator, heated pitot, alternate static source, and individual rheostat controlled lighting. Group available with electric or vacuum gyros: adding 5.6 kg (12.4 lb) or 5.9 kg (12.9 lb) respectively.

De-icing Group. Pneumatic de-icing boot installation for wing and tail unit leading-edges; electric propeller de-icing; ice inspection light; heated lift detector; fuselage ice protection shields; and electric windscreen de-icing and windscreen wiper port side: adding 28.4 kg (62.7 lb).

Re-certification for flight into known icing conditions, to newer, more stringent standards, applies to aircraft equipped with the optional De-icing Group.

A total of 1,821 Chieftains had been sold by 1 April 1985.

TYPE: Six/ten-seat passenger transport.

WINGS: Cantilever low-wing monoplane. Wing section NACA 63-415 at root, NACA 63-212 at tip, 1° aerodynamic twist, 2° 30' geometric twist. All-metal structure, with heavy stepped down main spar, front and rear spars, lateral stringers, ribs and stressed skin. Wings spliced on centreline with heavy steel plates. Flush riveted forward of main spar. Wing root leading-edge extended forward between nacelle and fuselage. Glassfibre wingtips. Balanced ailerons interconnected with rudder. Trim tab in starboard aileron. Electrically operated flaps. Pneumatic de-icing boots optional.

FUSELAGE: All-metal semi-monocoque structure.

TAIL UNIT: Cantilever all-metal structure, with sweptback vertical surfaces. Trim tabs in rudder and starboard elevator. Elevator horn anti-icing boots standard. Optional pneumatic de-icing boots.

LANDING GEAR: Hydraulically actuated retractable tricycle type, with single wheel on each unit. Manual hydraulic emergency extension. Mainwheels and tyres size 6-50-10, eight-ply rating, pressure 4-14 bars (60 lb/sq in). Steerable nosewheel and tyre size 6-00-6, six-ply rating, pressure 2-90 bars (42 lb/sq in). Toe controlled hydraulic disc brakes. Heavy duty brakes and toe operated brakes for co-pilot optional. Parking brake. Mainwheel doors close when gear is fully extended.

LANDING GEAR: Non-retractable tricycle type, with steerable nosewheel. Rubber cushioned shock absorber struts of SIAI-Marchetti design. Mainwheel tyres size 6-00-6; nosewheel tyre size 5-00-5. Tyre pressure (all units) 2-41 bars (35 lb/sq in). Independent hydraulically operated disc brake on each mainwheel.

POWER PLANT (AS 202/18A): One 134 kW (180 hp) Avco Lycoming AEIO-360-B1F flat-four engine, driving a Hartzell HC-C2YK-1BF/F7666A-2 two-blade constant-speed propeller with spinner. Hoffmann three-blade propeller optional. Two wing leading-edge fuel tanks with total capacity of 170 litres (37-4 Imp gallons). Refuelling point above each wing. Starboard tank has additional flexible fuel intake for aerobatics. Christen 801 fully aerobatic oil system, capacity 7-6 litres (1-6 Imp gallons).

POWER PLANT (AS 202/26A): One 194 kW (260 hp) Avco Lycoming fuel-injection engine, driving a Hartzell two-blade constant-speed propeller. Fuel capacity 174 litres (38-3 Imp gallons). Fuel and oil systems permit unrestricted inverted flight.

ACCOMMODATION: Seats for two persons side by side, in Aerobatic versions, under rearward sliding jettisonable transparent canopy. Space at rear in Utility versions for a third seat or 100 kg (220 lb) of baggage. Dual controls, cabin ventilation and heating standard.

SYSTEMS: Hydraulic system for brake actuation. One 12V 60A engine driven alternator and one 25Ah battery provide electrical power for engine starting, lighting, instruments, communications and navigation installations, and (AS 202/26A only) tailplane trim. 28V electrical system optional.

AVIONICS AND EQUIPMENT: Provision for VHF radio, VOR, ADF, Nav-O-Matic 200A autopilot, blind-flying instrumentation or other special equipment at customer's option. Clutch and release mechanism for glider towing optional.

DIMENSIONS, EXTERNAL:

Wing span	9-75 m (31 ft 11 1/4 in)
Wing chord: at root	1-88 m (6 ft 2 in)
at tip	1-16 m (3 ft 9 1/2 in)
Wing aspect ratio	6-51
Length overall	7-50 m (24 ft 7 1/4 in)
Length of fuselage	7-15 m (23 ft 5 1/2 in)
Height overall	2-81 m (9 ft 2 3/4 in)
Tailplane span	3-67 m (12 ft 0 3/4 in)
Wheel track	2-25 m (7 ft 4 1/2 in)
Wheelbase	1-78 m (5 ft 10 in)
Propeller diameter	1-88 m (6 ft 2 in)
Propeller ground clearance	0-31 m (1 ft 0 3/4 in)

DIMENSIONS, INTERNAL:

Cabin: Max length	2-15 m (7 ft 0 3/4 in)
Max width	1-02 m (3 ft 4 in)
Max height	1-10 m (3 ft 7 1/4 in)
Floor area	2-15 m ² (23-14 sq ft)

AREAS:

Wings, gross	13-86 m ² (149-2 sq ft)
Ailerons (total)	1-09 m ² (11-7 sq ft)
Trailing-edge flaps (total)	1-49 m ² (16-04 sq ft)
Fin	0-45 m ² (4-84 sq ft)
Rudder, incl tab	0-94 m ² (10-12 sq ft)
Tailplane	1-88 m ² (20-24 sq ft)
Elevators, incl tab	0-76 m ² (8-18 sq ft)

WEIGHTS AND LOADS:

Weight empty, equipped: 18A	700 kg (1,543 lb)
26A	793 kg (1,748 lb)
Max useful load (incl fuel):	
18A, Aerobatic	172 kg (379 lb)
18A, Utility	258 kg (568 lb)
26A, Aerobatic	188 kg (414 lb)
26A, Utility	292 kg (643 lb)
Max T-O and landing weight:	
18A, Aerobatic	950 kg (2,094 lb)
18A, Utility	1,050 kg (2,315 lb)
26A, Aerobatic	1,075 kg (2,370 lb)
26A, Utility	1,200 kg (2,645 lb)

Max wing loading:

18A, Utility	75-8 kg/m ² (15-52 lb/sq ft)
26A, Utility	86-6 kg/m ² (17-75 lb/sq ft)
Max power loading:	
18A, Utility	7-84 kg/kW (12-86 lb/hp)
26A, Utility	6-18 kg/kW (10-17 lb/hp)

PERFORMANCE (Utility category at max T-O weight):

Never-exceed speed:	
18A	173 knots (320 km/h; 199 mph)
26A	208 knots (385 km/h; 240 mph)
Max level speed at S/L:	
18A	130 knots (241 km/h; 150 mph)
Max cruising speed (75% power) at 2,440 m (8,000 ft):	
18A	122 knots (226 km/h; 141 mph)
26A	138 knots (256 km/h; 159 mph)
Econ cruising speed at 3,050 m (10,000 ft):	
18A (55% power)	109 knots (203 km/h; 126 mph)
Stalling speed, flaps up, engine idling:	
18A	62 knots (114 km/h; 71 mph)
26A	64 knots (117 km/h; 73 mph)
Stalling speed, flaps down, engine idling:	
18A	49 knots (90 km/h; 56 mph)
26A	53 knots (98 km/h; 61 mph)
Max rate of climb at S/L: 18A	276 m (905 ft)/min
26A	360 m (1,181 ft)/min
Service ceiling: 18A	5,490 m (18,000 ft)
26A	5,670 m (18,600 ft)
T-O run at S/L: 18A	210 m (689 ft)
26A	185 m (607 ft)
T-O to 15 m (50 ft) at S/L: 18A	400 m (1,312 ft)
26A	340 m (1,115 ft)
Landing from 15 m (50 ft): 18A, 26A	465 m (1,525 ft)
Landing run: 18A, 26A	210 m (690 ft)
Range with max fuel, no reserves:	
18A	521 nm (965 km; 600 miles)
26A	459 nm (850 km; 528 miles)
Max endurance: 18A	5 h 30 min
26A	4 h 54 min

PILATUS

PILATUS FLUGZEUGWERKE AG

CH-6370 Stans, near Lucerne

Telephone: (041) 63 11 33

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BOARD OF DIRECTORS:

W. Gubler (Chairman and General Manager)
D. C. Klöckner (Sales and Programmes)
P. Ebner (Finance and Administration)
W. Zbinden (Production)

MANAGERS:

W. Odermatt (Sales and Sales Support)
O. L. P. Masfield (Research and Development)
W. Volkart (Product Support)

PUBLIC RELATIONS: Ulrich Wenger

Pilatus Flugzeugwerke AG was formed in December 1939; details of its early history can be found in previous editions of *Jane's*. It is part of the Oerlikon-Bührle Group.

Current Pilatus products are the PC-6 Turbo-Porter single-engined utility transport, the PC-7 Turbo-Trainer and PC-9 turboprop trainer.

On 24 January 1979 Pilatus purchased the assets of Britten-Norman (Bembridge) Ltd of the UK, which has operated since then under the name Pilatus Britten-Norman Ltd (which see) as a subsidiary of Pilatus Aircraft Ltd.

PILATUS PC-6 TURBO-PORTER

US Army designation: UV-20A Chiricahua

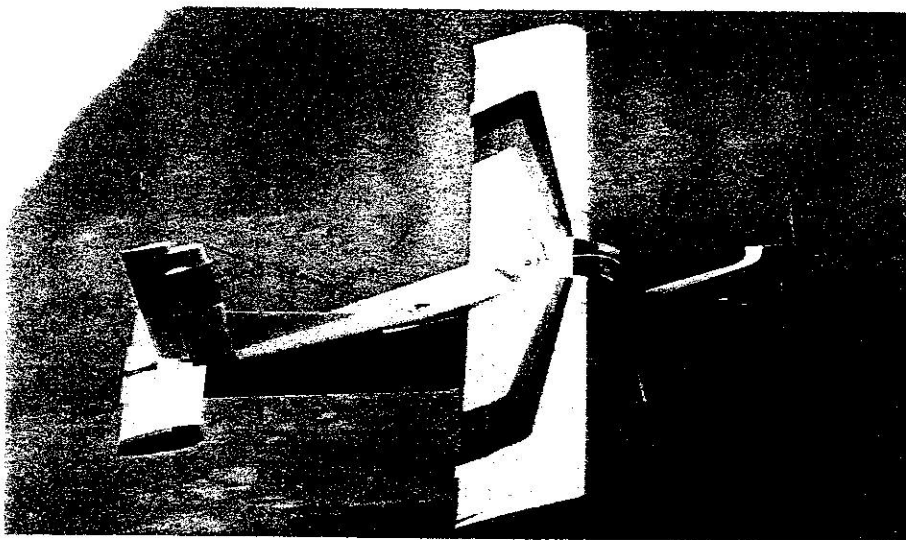
The Pilatus PC-6 is a single-engined multi-purpose utility aircraft, with STOL characteristics permitting operation from unprepared strips under harsh environmental and terrain conditions. The aircraft can be converted rapidly from a pure freighter to a passenger transport, and can be adapted for a great number of different missions, including supply dropping, search and rescue, ambulance, aerial survey and photography, parachuting, cropspraying, water bombing, rainmaking and glider or target towing as well as operation from soft ground, snow, glacier or water, and long-range operations.

The first of five PC-6 piston engined prototypes made its first flight on 4 May 1959, and 20 pre-series PC-6s, with 253-5 kW (340 hp) Avco Lycoming engines, had been delivered by the Summer of 1961. Subsequent versions have included the piston engined PC-6 and PC-6/350 Porters; and the PC-6/A, A1, A2, B and C2-H2 Turbo-Porters, with various turboprop power plants. Descriptions of all these can be found in the 1974-75 and earlier editions of *Jane's*.

Swiss built piston engined variants have the name Porter, and turboprop powered variants are known as Turbo-Porters. In the USA, where the PC-6 was manufactured by Fairchild, it is known simply as the Porter, irrespective of the type of power plant fitted.

The standard production version in recent years has been the **PC-6/B2-H2 Turbo-Porter**, certificated on 30 June 1970 and powered by a PT6A-27 turboprop engine. Other versions can be made available on request.

The B1 and B2 versions can be fitted with an air inlet filter for operation in desert conditions and for agricultural applications.



The second Pilatus PC-6/B2-H4 Turbo-Porter, with increased operating weights and additionally fitted with weather radar and area navigation avionics

Flight testing began in 1984 of a new version, designated **PC-6/B2-H4**, in which for CAR.3 operations (commercial operations with fare paying passengers) the maximum take-off weight has been increased by 600 kg (1,323 lb), resulting in a payload increase of 570 kg (1,257 lb). This was achieved by improving the aerodynamic efficiency of the wings with new tip fairings, enlarging the dorsal fin, installing uprated mainwheel shock absorbers and a new tailwheel assembly, and a slight strengthening of the airframe. While the H4 modification can be retrofitted to all existing PC-6/B1-H2 and B2-H2 models equipped with electrically operated longitudinal trim, all new-production Porters from mid-1985 are of the H4 version only.

By the Summer of 1985 more than 460 PC-6 aircraft, of all models, had been delivered (including US licence manufacture), and were operating in more than 50 countries. Production was then continuing at a rate of one per month. Military operators include the air forces of Angola, Argentina, Australia, Austria, Bolivia, Burma, Chad, Ecuador, Oman, Peru, Sudan, Switzerland and Thailand, and the US Army. Recent customers for the civil version have been based in Colombia, England, Guatemala, Hungary, New Zealand, Switzerland, the USA and Zaire.

Pilatus markets a Q-STOL (Quiet STOL) conversion kit for the B1 and B2 Turbo-Porters fitted with PT6A-20 or -27 turbine engines. This includes a system whereby propeller speed can be altered independently of the engine power setting, and is claimed to reduce the noise level by more than 10 dB for T-O and 20 dB for landing.

The structural description which follows is applicable to the B2-H2 version except where indicated. Details of the agricultural Turbo-Porter are given separately.

TYPE: Single-engined STOL utility transport.

WINGS: Braced high-wing monoplane, with single streamline-section bracing strut each side. Wing section NACA 64-514 (constant). Dihedral 1°. Incidence 2°. Single-spar all-metal structure. Entire trailing-edge hinged, inner sections consisting of electrically operated all-metal double-slotted flaps and outer sections of all-metal single-slotted ailerons. No airbrakes or de-icing equipment. Trim tabs and/or Flettner tabs on ailerons optional; ground adjustable tabs are mandatory if these are not fitted.

FUSELAGE: All-metal semi-monocoque structure.

TAIL UNIT: Cantilever all-metal structure. Variable incidence tailplane. Flettner tabs on elevator.

LANDING GEAR: Non-retractable tailwheel type. Oleo shock absorbers of Pilatus design in all units. Steerable/lockable tailwheel. Goodyear Type II mainwheels and GA 284 tyres size 24 x 7 or 7-50 x 10 (pressure 2-21 bars; 32 lb/sq in); oversize Goodyear Type III wheels and tyres optional, size 11-0 x 12, pressure 0-88 bars (12-8 lb/sq in). Goodyear tailwheel with size 5-00-4 tyre. Goodyear disc brakes. Pilatus wheel/ski gear or Edo 58-4580 or 679-4930 floats optional.

ME 20

POWER PLANT (PC-6/B2-H2 and B2-H4): One 507 kW (680 shp) Pratt & Whitney Canada PT6A-27 turboprop engine (flat rated at 410 kW; 550 shp at S.L.), driving a Hartzell HC-B3TN-3D T-10178 C or CH, or T10173 C or CH constant-speed fully-feathering reversible-pitch propeller with Beta mode control. Standard fuel in integral wing tanks, usable capacity 480 litres (127 US gallons; 105.5 Imp gallons) normal, 644 litres (170 US gallons; 142 Imp gallons) maximum. Two underwing auxiliary tanks, each of 190 or 245 litres (50 or 65 US gallons; 42 or 54 Imp gallons), available optionally. Oil capacity 12.5 litres (2.75 Imp gallons; 3.3 US gallons).

ACCOMMODATION: Cabin has pilot's seat forward on port side, with one passenger seat alongside, and is normally fitted with six quickly removable seats, in pairs, to the rear of these for additional passengers. Up to 11 persons, including the pilot, can be carried in 2-3-3-3 high density layout; or up to eight parachutists, who can be dropped from heights up to 7,620 m (25,000 ft); or two stretchers plus three attendants in ambulance configuration. Floor is level, flush with door sill, and is provided with seat rails. Forward opening door beside each front seat. Large rearward sliding door on starboard side of main cabin. Double doors, without central pillar, on port side. Hatch in floor 0.58 × 0.90 m (1 ft 10½ in × 2 ft 11½ in), openable from inside cabin, for aerial camera or for supply dropping. Hatch in cabin rear wall 0.50 × 0.80 m (1 ft 7 in × 2 ft 7 in) permits stowage of six passenger seats or accommodation of freight items up to 5.0 m (16 ft 5 in) in length. Walls lined with lightweight soundproofing and heat insulation material. Adjustable heating and ventilation systems provided. Dual controls optional.

SYSTEMS: Cabin heated by engine bleed air. Scott 8500 oxygen system optional. 200A 30V starter/generator and 24V 34Ah (optionally 40Ah) nickel-cadmium battery.

EQUIPMENT: Generally to customer's requirements, but can include stretchers for ambulance role, aerial photography and survey gear, agricultural equipment (see separate description) or an 800 litre (176 Imp gallon; 211 US gallon) water tank in cabin, with quick release system, for firefighting role. The 1,330 litre tank (see under description of agricultural versions) can also be used in the firebombing role.

DIMENSIONS, EXTERNAL (H2 and H4 except where indicated):
Wing span: H2 15.13 m (49 ft 8 in)
H4 13.87 m (45 ft 6¼ in)

Wing span over navigation lights:

H2 15.20 m (49 ft 10½ in)

H4 1.90 m (6 ft 3 in)

Wing chord (constant) 7.96

Wing aspect ratio: H2 7.96

Length overall: H2 10.90 m (35 ft 9 in)

H4 11.00 m (36 ft 1 in)

Height overall (tail down) 3.20 m (10 ft 6 in)

Elevator span 5.12 m (16 ft 9½ in)

Wheel track 3.00 m (9 ft 10 in)

Wheelbase 7.87 m (25 ft 10 in)

Propeller diameter 2.56 m (8 ft 5 in)

Cabin double door (port) and sliding door (starboard):

Max height 1.04 m (3 ft 5 in)

Width 1.58 m (5 ft 2¼ in)

DIMENSIONS, INTERNAL:

Cabin, from back of pilot's seat to rear wall:

Length 2.30 m (7 ft 6½ in)

Max width 1.16 m (3 ft 9½ in)

Max height (at front) 1.28 m (4 ft 2½ in)

Height at rear wall 1.18 m (3 ft 10½ in)

Floor area 2.67 m² (28.6 sq ft)

Volume 3.28 m³ (107 cu ft)

AREAS:

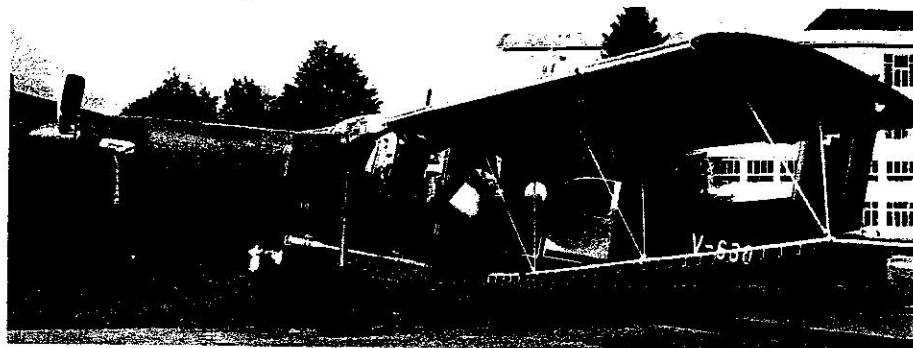
Wings, gross 28.80 m² (310 sq ft)

Ailerons (total) 3.83 m² (41.2 sq ft)

Flaps (total) 3.76 m² (40.5 sq ft)

Fin 1.70 m² (18.3 sq ft)

Rudder, incl tab 0.96 m² (10.3 sq ft)



Pilatus PC-6/B2-H2M Turbo-Porter of the Swiss Air Force, equipped with NBC-simulation spraygear

Tailplane 4.03 m² (43.4 sq ft)
Elevator, incl tab 2.11 m² (22.7 sq ft)

WEIGHTS AND LOADINGS:

Weight empty, equipped: H2 1,218 kg (2,685 lb)

H4 1,260 kg (2,778 lb)

Max fuel load 508 kg (1,120 lb)

Max T-O and landing weight:

Normal (CAR 3):

H2, all landing gears 2,200 kg (4,850 lb)

H4 with wheels (standard) 2,800 kg (6,173 lb)

H4 with skis and wheels 2,600 kg (5,732 lb)

H4 with Edo 679-4930 floats 2,485 kg (5,478 lb)

Restricted (CAR 8):

H2, Edo 679-4930 floats 2,490 kg (5,490 lb)

H2, skis and wheels 2,271 kg (6,000 lb)

H2, standard wheels 2,770 kg (6,100 lb)

Max cabin floor loading 488 kg/m² (100 lb/sq ft)

Max wing loading (Normal) 76.4 kg/m² (15.65 lb/sq ft)

Max power loading (Normal) 5.37 kg/kW (8.82 lb/shp)

PERFORMANCE (at max T-O weight, Normal category):

Never-exceed speed

151 knots (280 km/h; 174 mph) IAS

Max cruising speed at 3,050 m (10,000 ft):

H2 140 knots (259 km/h; 161 mph)

Econ cruising speed at 3,050 m (10,000 ft):

H2 129 knots (240 km/h; 150 mph)

H4 115 knots (213 km/h; 132 mph)

Max manoeuvring speed:

H2 106 knots (196 km/h; 122 mph) IAS

Max speed with flaps extended:

H2 82 knots (152 km/h; 94 mph) IAS

Stalling speed, power off, flaps up:

H2 50 knots (94 km/h; 58 mph) IAS

Stalling speed, power off, flaps down:

H2 44 knots (82 km/h; 51 mph) IAS

H4 49 knots (91 km/h; 57 mph)

Max rate of climb at S/L: H2 387 m (1,270 ft)/min

H4 253 m (830 ft)/min

Service ceiling: H2 8,535 m (28,000 ft)

H4 6,250 m (20,500 ft)

T-O run at S/L: H2 110 m (360 ft)

H4 152 m (500 ft)

T-O to 15 m (50 ft) at S/L: H2 235 m (771 ft)

Landing from 15 m (50 ft) at S/L: H2 218 m (715 ft)

Landing run at S/L: H2 80 m (262 ft)

H4 116 m (381 ft)

Max range, no reserves:

H2, internal fuel only 566 nm (1,050 km; 652 miles)

H2, with external fuel 875 nm (1,620 km; 1,007 miles)

H4, with external fuel 770 nm (1,427 km; 886 miles)

Endurance, no reserves:

H2, internal fuel only 4 h 20 min

H2, with external fuel 6 h 45 min

g limits +3.72/-1.5

PILATUS PC-6 TURBO-PORTER (AGRICULTURAL VERSIONS)

The Turbo-Porter can, if required, be equipped for agricultural duties, the necessary equipment being easily removable when not required, to permit the use of the aircraft for other work. Approx 40 Turbo-Porters have been completed in agricultural configuration: these are in service in Indonesia, Sudan, Switzerland, Thailand and Zaïre.

For liquid spraying, a stainless steel tank (capacity 1,330 litres; 292.5 Imp gallons; 351.5 US gallons) is installed behind the two front seats, and 46- or 62-nozzle spraybooms are fitted beneath the wings. In this configuration the aircraft can cover a swath width of 45 m (148 ft). An ultra-low-volume system, using four to six atomisers or two to six Micronairs, is also available, permitting increase in swath width up to 400 m (1,310 ft).

For dusting with granulated materials, the lower part of the standard tank can be replaced by a discharge and dispersal door permitting coverage of a swath width of up to 20 m (66 ft). A Transland spreader can be fitted for dust application (swath up to 30 m; 100 ft). Effective swath width of these versions is 13-40 m (43-131 ft), the optimum being approx 20 m (66 ft).

Both versions are fitted with small doors in the fuselage sides, giving access to the tank/hopper for servicing, removal or replenishment, and two single seats or a bench seat for three persons can be installed at the top of the fuselage. Optional items include an engine air intake screen and a loading door for chemical in the top of the fuselage.

AVIONICS AND EQUIPMENT: Optional avionics include Decca Mk 8A navigator, Decca Hi-Fix radio, Decca Doppler 72 radar, gyrosyn CL-11 compass and SR 54A radio altimeter.

WEIGHTS (liquid spray system):

Weight empty, incl spray system, oil and pilot 1,440 kg (3,170 lb)

Fuel 380 kg (837 lb)

Chemical 950 kg (2,093 lb)

Max T-O weight 2,770 kg (6,100 lb)

Max landing weight 2,200 kg (4,850 lb)

PERFORMANCE (liquid spray version, PT6A-27 engine, at max T-O weight):

Never-exceed speed 120 knots (222 km/h; 138 mph)

Operating speed approx 90 knots (167 km/h; 104 mph)

Operating height 6-8 m (20-26 ft)

Stalling speed, power off, flaps down 49 knots (91 km/h; 57 mph)

T-O run 180 m (590 ft)

T-O to 15 m (50 ft) 390 m (1,280 ft)

Landing from 15 m (50 ft) 345 m (1,132 ft)

Landing run 130 m (427 ft)

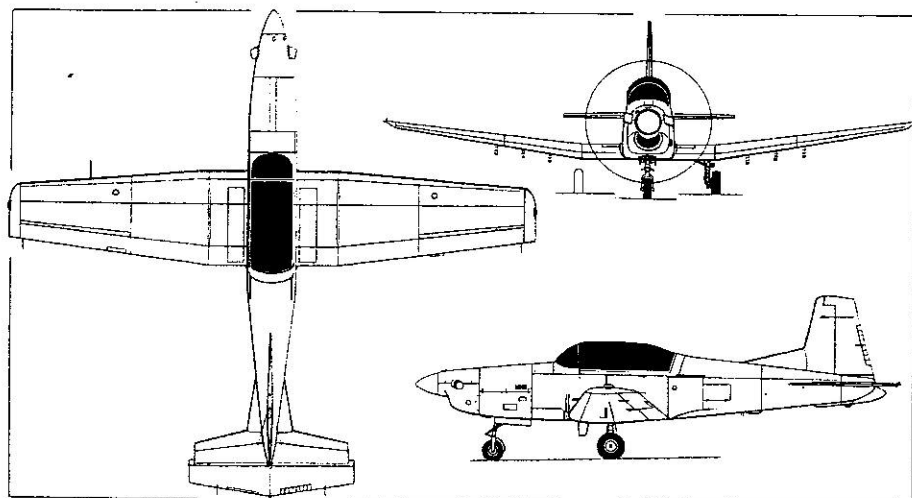
Spraying duration with full spray tank 6 min

PILATUS PC-7 TURBO-TRAINER

Swiss Air Force designation: PC-7/CH

The PC-7 Turbo-Trainer is a fully acrobatic two-seat training aircraft, powered by a 410 kW (550 shp) Pratt & Whitney Canada PT6A-25A turboprop engine. It can be used for basic, transition and aerobatic training, and, with suitable equipment installed, for IFR and tactical training. It received FAA certification to FAR Pt 23 (Aerobatic and Utility categories) on 12 August 1983, and also meets the requirements of a selected group of US military specifications (Trainer category). As a single-seater, it is flown from the front seat. The PC-7 also holds type certificates from the Swiss Federal Office for Civil Aviation (5 December 1978/6 April 1979) and the French DGAC (16 May 1983).

The first production PC-7 was flown on 18 August 1978, and deliveries began in December of that year. Sales totalled more than 370 by 1 June 1985, of which more than 340 had been delivered. Customers include the air forces of Abu Dhabi (14), Angola (12), Austria (16), Bolivia (36), Burma (17), Chile (10 for Navy), Guatemala (12), Iraq (52), Malaysia (44), Mexico (55), Switzerland (40) and undisclosed countries; other customers include CIPRA of France (2), Swissair (1) and two US private owners (1 each).



Pilatus PC-7 Turbo-Trainer (Pratt & Whitney Canada PT6A-25A turboprop engine) (Pilot Press)

DIMENSIONS, INTERNAL:

Cabin, incl rear baggage area:

Length	3.84 m (12 ft 7 in)
Max width	1.07 m (3 ft 6 in)
Max height	1.27 m (4 ft 2 in)
Floor area	3.72 m ² (40 sq ft)
Volume	3.85 m ³ (135.9 cu ft)
Baggage compartment: fwd	0.51 m ³ (18 cu ft)

AREAS:

Wings, gross	17.47 m ² (188.1 sq ft)
Ailerons (total)	1.06 m ² (11.40 sq ft)
Trailing-edge flaps (total)	1.98 m ² (21.30 sq ft)
Fin	1.46 m ² (15.67 sq ft)
Rudder, incl tab	0.81 m ² (8.75 sq ft)
Tailplane	4.95 m ² (53.30 sq ft)
Elevators, incl tabs	1.84 m ² (19.80 sq ft)

WEIGHTS AND LOADINGS:

Weight empty	1,562 kg (3,443 lb)
Max T-O weight	2,495 kg (5,500 lb)
Max landing weight	2,449 kg (5,400 lb)
Max ramp weight	2,506 kg (5,526 lb)
Max wing loading	143.4 kg/m ² (27.6 lb/sq ft)
Max power loading	5.60 kg/kW (9.2 lb/hp)

PERFORMANCE (at max T-O weight, except cruising speeds at average cruise weight):

Max level speed at S/L	208 knots (386 km/h; 239 mph)
Max cruising speed, 2,500 rpm at 1,525 m (5,000 ft)	203 knots (376 km/h; 234 mph)
Cruising speed, 2,500 rpm at 3,050 m (10,000 ft)	198 knots (367 km/h; 228 mph)
Econ cruising speed, 2,100 rpm at 3,660 m (12,000 ft)	163 knots (302 km/h; 188 mph)
Stalling speed, power off:	
flaps up	84 knots (156 km/h; 97 mph) IAS
flaps down	74 knots (137 km/h; 85 mph) IAS
Max rate of climb at S/L	533 m (1,750 ft)/min
Rate of climb at S/L, one engine out	120 m (394 ft)/min
Service ceiling	6,306 m (20,688 ft)
Service ceiling, one engine out	2,220 m (7,284 ft)
T-O run	428 m (1,403 ft)
T-O to 15 m (50 ft)	723 m (2,371 ft)
Landing from 15 m (50 ft)	761 m (2,498 ft)
Landing run	439 m (1,439 ft)
Range with 734 litres (194 US gallons) usable fuel, with allowances for engine start, taxi, T-O, climb and 45 min reserves at econ cruise power:	
max cruising speed (power/altitude settings as above)	1,150 nm (2,130 km; 1,324 miles)
cruising speed (power/altitude settings as above)	1,325 nm (2,455 km; 1,526 miles)
econ cruising speed (power/altitude settings as above)	1,575 nm (2,919 km; 1,814 miles)

BEECHCRAFT BARON MODEL 58P

Design of this pressurised version of the Model 58 Baron started in June 1972; the first flight of the prototype was made in August 1973. Certification under FAR Part 23 was received in May 1974; the first production aircraft flew later the same year. Examples of the Model 58P produced prior to 1979 are powered by two 231 kW (310 hp) Continental TSIO-520-L (or -LB) engines. Current production aircraft have more powerful TSIO-520-WB engines, and introduced propeller synchrophasers as standard equipment in 1981.

Deliveries of production aircraft began in late 1975, and a total of 469 Baron 58Ps had been delivered by 1 January 1985. A total of 18 Baron 58Ps had been delivered to the US Forest Service by 17 June 1982, for use as lead aircraft in smoke jumping operations, as well as for reconnaissance, administration and cargo missions.

TYPE: Four/six-seat cabin monoplane.

WINGS: As for Model 58.

FUSELAGE: As for Model 58, except structural reinforcement to cater for pressurisation.

TAIL UNIT: As for Model 58.

LANDING GEAR: Electrically retractable tricycle type. Main units retract inward, nosewheel rearward; all three units have fairing doors. Beechcraft oleo-pneumatic shock absorbers. Goodrich mainwheels and tyres size 19-50 x 6-75-8 10-ply rating, pressure 5-24 to 5-66 bars (76 to 82 lb/sq in). Steerable nosewheel with shimmy damper, with tyre size 5-0-5, pressure 3-79-4-14 bars (55-60 lb/sq in). Goodrich single-disc hydraulic brakes. Parking brake.

POWER PLANT: Two 242 kW (325 hp) Continental TSIO-520-WB turbocharged flat-six engines, each driving a McCauley three-blade constant-speed fully-feathering metal propeller with spinner. Propeller synchrophasers standard, unfeathering accumulators optional. Electrically operated engine cowl flaps. Integral fuel tanks in wings, with standard capacity of 651 litres (172 US gallons) of which 628 litres (166 US gallons) are usable. Optional maximum capacity of 742 litres (196 US gallons) of which 719 litres (190 US gallons) are usable. Refuelling points in outboard leading-edge of wings and, for optional maximum fuel, in wingtips. Oil capacity 22.7 litres (6 US gallons). Electric anti-icing for wings and

harness and inertia reel. Fifth and sixth seats optional, as is club layout. Doors on starboard side, adjacent to co-pilot, and at trailing-edge of wing on port side. Baggage space in aft cabin and in fuselage nose, with door on starboard side of nose. Openable storm window for pilot on port side. Cabin heated and pressurised. Air-conditioning optional. Windscreens defrosting by hot air. Windscreens electric anti-icing optional.

SYSTEMS: Garrett pressurisation system with max differential of 0.27 bars (3.9 lb/sq in), giving a 3,050 m (10,000 ft) cabin environment to a height of 6,705 m (22,000 ft). Beechcraft 14,000 BTU air-conditioning optional. Janitor 35,000 BTU heater. Engine driven compressors supply air for flight instruments, pressurisation control and optional pneumatic de-icing boots. Electrical system powered by two 28V 60A alternators, with two 12V 25Ah storage batteries. Two 24V 100A alternators optional. Hydraulic system for brakes only. Oxygen system of 0-42 m³ (15 cu ft) optional.

AVIONICS AND EQUIPMENT: Standard avionics package comprises King KX 155 nav/com (720-channel com transceiver and 200-channel nav receiver) with KI 208 VOR/LOC converter-indicator, KR 87 ADF with KI 227 indicator, microphone, headset and cabin speaker. Optional avionics by Bendix, Collins, King and Sperry. Standard equipment as for Model 58, plus dual rotating beacons, and exterior urethane paint. Optional equipment includes engine and flight hour recorders, true airspeed indicator, electrically operated elevator trim, cabin fire extinguisher, executive writing desk, internally illuminated instruments, strobe lights, wing ice lights, and static wicks.

DIMENSIONS, EXTERNAL:

Wing span	11.53 m (37 ft 10 in)
Wing chord: at root	2.13 m (7 ft 0 in)
at tip	0.90 m (2 ft 11 1/2 in)
Length overall	9.12 m (29 ft 11 in)
Height overall	2.79 m (9 ft 2 in)
Tailplane span	4.85 m (15 ft 11 in)
Wheel track	2.92 m (9 ft 7 in)
Wheelbase	2.72 m (8 ft 11 in)
Propeller diameter	1.98 m (6 ft 6 in)
Propeller ground clearance	0.28 m (10 1/2 in)
Passenger door (stbd, fwd):	
Height	0.91 m (3 ft 0 in)
Width	0.94 m (3 ft 1 in)
Height to sill	0.51 m (1 ft 8 in)
Passenger door (port, rear):	
Height	0.89 m (2 ft 11 in)
Width	0.58 m (1 ft 11 in)
Height to sill	0.79 m (2 ft 7 in)
Baggage door (nose, stbd):	
Height	0.38 m (1 ft 3 in)
Width	0.64 m (2 ft 1 in)

DIMENSIONS, INTERNAL: As for Model 58

AREAS: As for Model 58

WEIGHTS AND LOADINGS:

Weight empty, equipped	1,826 kg (4,026 lb)
Max T-O and landing weight	2,812 kg (6,200 lb)
Max ramp weight	2,830 kg (6,240 lb)
Max zero-fuel weight	2,585 kg (5,700 lb)
Max wing loading	161.1 kg/m ² (33 lb/sq ft)
Max power loading	5.81 kg/kW (9.54 lb/hp)

PERFORMANCE (at max T-O weight, except cruising speeds at average cruise weight):

Max level speed	261 knots (483 km/h; 300 mph)
Max cruising speed at approx 77% power:	
at 4,575 m (15,000 ft)	222 knots (412 km/h; 256 mph)
at 6,100 m (20,000 ft)	232 knots (430 km/h; 267 mph)
at 7,620 m (25,000 ft)	241 knots (447 km/h; 277 mph)
Cruising speed at approx 75% power:	
at 4,575 m (15,000 ft)	220 knots (407 km/h; 253 mph)

at 6,100 m (20,000 ft)	229 knots (425 km/h; 264 mph)
at 7,620 m (25,000 ft)	237 knots (439 km/h; 273 mph)
Cruising speed at approx 62% power:	
at 4,575 m (15,000 ft)	201 knots (372 km/h; 231 mph)
at 6,100 m (20,000 ft)	210 knots (389 km/h; 242 mph)
at 7,620 m (25,000 ft)	218 knots (404 km/h; 251 mph)
Econ cruising speed at approx 53% power:	
at 4,575 m (15,000 ft)	185 knots (343 km/h; 213 mph)
at 6,100 m (20,000 ft)	194 knots (359 km/h; 223 mph)
at 7,620 m (25,000 ft)	202 knots (375 km/h; 233 mph)
Stalling speed, power off:	
flaps up	84 knots (156 km/h; 97 mph)
flaps down	78 knots (145 km/h; 90 mph)
Max rate of climb at S/L	450 m (1,475 ft)/min
Rate of climb at S/L, one engine out	68 m (223 ft)/min

Service ceiling	above 7,620 m (25,000 ft)
Service ceiling, one engine out	3,725 m (12,220 ft)
T-O run	474 m (1,555 ft)
T-O to 15 m (50 ft)	806 m (2,643 ft)
Landing from 15 m (50 ft)	740 m (2,427 ft)
Landing run	420 m (1,378 ft)
Range with 719 litres (190 US gallons) usable fuel, and allowances for engine start, taxi, T-O, climb and 45 min reserves at econ cruising speed:	

at approx 77% power	
at 4,575 m (15,000 ft)	917 nm (1,699 km; 1,056 miles)
at 6,100 m (20,000 ft)	960 nm (1,779 km; 1,105 miles)
at 7,620 m (25,000 ft)	1,013 nm (1,877 km; 1,166 miles)
at approx 75% power:	
at 4,575 m (15,000 ft)	930 nm (1,723 km; 1,071 miles)
at 6,100 m (20,000 ft)	975 nm (1,807 km; 1,122 miles)
at 7,620 m (25,000 ft)	1,030 nm (1,908 km; 1,186 miles)
at approx 65% power:	
at 4,575 m (15,000 ft)	1,098 nm (2,035 km; 1,264 miles)
at 6,100 m (20,000 ft)	1,122 nm (2,079 km; 1,292 miles)
at 7,620 m (25,000 ft)	1,160 nm (2,150 km; 1,335 miles)
at approx 53% power:	
at 4,575 m (15,000 ft)	1,289 nm (2,382 km; 1,356 miles)
at 6,100 m (20,000 ft)	1,220 nm (2,261 km; 1,405 miles)
at 7,620 m (25,000 ft)	1,235 nm (2,288 km; 1,422 miles)

BEECHCRAFT BARON MODEL 58TC

This turbocharged version of the Baron Model 58, of which 150 had been delivered by 1 January 1984, is no longer in production. A description of the aircraft may be found in the 1984-85 edition.

BEECHCRAFT KING AIR MODEL C90A

The King Air C90A is a pressurised 6/10-seat twin-turboprop business aircraft which superseded the Models 90, A90, B90, C90 and C90-1 King Air. Performance is improved by new 'pilot' cowlings which improve engine efficiency and reduce drag. The air inlet area of the pitot cowlings is 387 cm² (60 sq in), compared with 748 cm² (116 sq in) on the King Air C90-1. The reduced air intake area and sealed ducting increase the ram air flow to the engines



ME 2

by flight test by Bell and hub

Manufacturers to copter Experiment aircraft for some attack (SCAT) and items. Bell began a five variants of the for helicopters and the US Army sub-helicopter rather. HX requirement, single main rotor, single main rotor from the ACAP, 11.200 in 895 kW (1,200 hp) for the LHX, 11:58 m (38 ft) rotors turning at 2.29 m (7.5 ft) 2.3855 kg (7,500 lb) (185 US gallons), 196 mph at max US Army specific, 11:58 m (38 ft) Stinger missiles, mm cannon. the LHX is the (ARTI) contract to design a which will fly all missions. The an fly itself while assigning priority Flight Systems, in the ARTI context, the digital four-blade Model 17-30A, but once selected loting task to the (ARTI) designation, can interrupt the al control at any



possible LHX

NACA 63-215 2". Incidence 2". (y) laminate and a two half-shells, in allers and on. Anti-icing of

surised structure fibre stringers.

fibre epoxy lam-rich. Electrically No trim tabs. recycle type with tracts rearward, tie shock absorbers and tyres size

POWER PLANT: One 324 kW (435 hp) Continental GTSIO-520-F flat-six engine, flat rated to an altitude of 5,970 m (19,000 ft), driving a Hartzell three-blade constant-speed metal propeller. One integral fuel tank in each wing, with a combined capacity of 667 litres (176 US gallons), of which 644 litres (170 US gallons) are usable. Refuelling points at wingtips. Oil capacity 14.2 litres (3.75 US gallons).

ACCOMMODATION: Pilot and five passengers in enclosed cabin. Door on starboard side. Stowage for 90.7 kg (200 lb) of baggage.

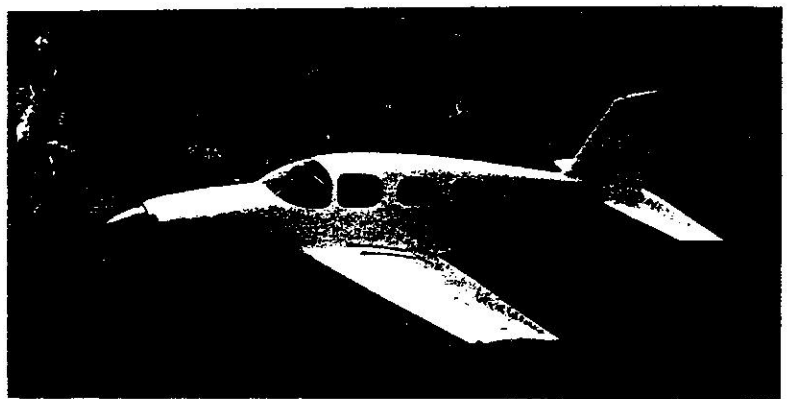
DIMENSIONS, EXTERNAL:
Wing span 10.67 m (35 ft 0 in)
Wing aspect ratio 6.7
Length overall 8.81 m (28 ft 11 in)
Propeller diameter 2.08 m (6 ft 10 in)

AREA:
Wings, gross 16.96 m² (182.6 sq ft)

WEIGHTS AND LOADINGS:
Weight empty 1,098 kg (2,420 lb)
Max T-O weight 1,905 kg (4,200 lb)
Max wing loading 112.3 kg/m² (23.0 lb/sq ft)
Max power loading 5.88 kg/kW (9.65 lb/hp)

PERFORMANCE:
Max cruising speed at 7,315 m (24,000 ft) 283 knots (525 km/h; 326 mph)

Cruising speed:
75% power at 6,100 m (20,000 ft) 258 knots (478 km/h; 297 mph)
75% power at 7,315 m (24,000 ft) 269 knots (499 km/h; 310 mph)
65% power at 6,100 m (20,000 ft) 248 knots (458 km/h; 285 mph)



Prototype Bellanca Model 25 Skyrocket during NASA ACEE testing

65% power at 7,925 m (26,000 ft) 261 knots (483 km/h; 300 mph)
Stalling speed, flaps down 57 knots (105 km/h; 65 mph)
Max rate of climb at S/L 613 m (2,011 ft)/min
Service ceiling above 9,145 m (30,000 ft)
T-O run 207 m (680 ft)
T-O to 15 m (50 ft) 388 m (1,274 ft)
Landing from 15 m (50 ft) 496 m (1,628 ft)
Landing run 261 m (857 ft)
Range, 45 min reserves:
65% power at 6,100 m (20,000 ft) 1,586 nm (2,937 km; 1,825 miles)
75% power at 7,315 m (24,000 ft) 1,492 nm (2,763 km; 1,717 miles)

BELLANCA

BELLANCA INC

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Telephone: (612) 762 1501

CHAIRMAN OF THE BOARD: James M. Miller
PRESIDENT: Charles F. Holm
VICE-PRESIDENT: Marge Mitchell
SECRETARY/TREASURER: Gerald E. Sather

This company, then known as Viking Aviation, acquired in 1982 the assets of the former Bellanca Aircraft Corporation (see 1981-82 and earlier editions of *Jane's*), which went into liquidation in 1981. The executives of Viking Aviation were mainly from Miller Flying Service, Schiller & Associates, and Weber's Aero Repair, and they remain as executives of Bellanca Inc.

The company's initial activity was limited to provision of product support for the Bellanca Viking series of four-seat light business aircraft (of which 1,598 had been built by January 1979) and various 14 Series models; replacement parts for the Viking are being manufactured under FAA-PMA approval. Bellanca Inc holds the type certificates and production inventory for Models 14-19, 14-19-2, 14-19-3, 14-19-3A, 17-30, 17-31, 17-31TC, 17-30A, 17-31A and 17-31ATC. Production of the Bellanca Viking resumed in 1984. Sales are handled exclusively by Miller Flying Service, PO Box 190, Plainview, Texas 79072.

In 1984 Bellanca Inc also acquired the FAA type certificate and production jigs for the Eagle Aircraft Eagle agricultural biplane (see 1983-84 *Jane's*). Bellanca provides support for existing Eagles, and in early 1985 was evaluating the market prior to making a decision to restart production. Eagle Aircraft built 96 of these biplanes, of which about 80 were in service at the beginning of 1985.

BELLANCA VIKING SERIES

There are three current aircraft in the Viking series, developed from the earlier Bellanca 260C and Standard Viking 300 (see 1971-72 *Jane's*), as follows:

Model 17-30A Super Viking 300A. Powered by a 224 kW (300 hp) Continental IO-520-K flat-six engine, driving

a McCauley two- or three-blade metal constant-speed propeller.

Model 17-31A Super Viking 300A. This is identical to the foregoing version except for the installation of a 224 kW (300 hp) Lycoming IO-540-K1E5 engine, driving a Hartzell three-blade constant-speed propeller.

Model 17-31ATC Turbo Viking 300A. Powered by a 224 kW (300 hp) Lycoming IO-540-K1E5 engine with two Rajay turbochargers. Hartzell three-blade constant-speed propeller.

TYPE: Six-seat light business aircraft.
WINGS: Cantilever low-wing monoplane. Bellanca B wing section. Dihedral 4° 30'. Incidence 0° at root, -3° at tip. Structure consists of two laminated Sitka spruce spars, mahogany plywood and spruce ribs and mahogany plywood skin, covered with Dacron. Dacron covered wooden ailerons and electrically actuated flaps.

FUSELAGE: Welded 4130 steel tube structure, covered with Dacron. Two-piece glassfibre engine cowling, suspended from firewall.

TAIL UNIT: Strut braced welded 4130 steel tube structure, covered with Dacron. Sweptback vertical surfaces. Trim tab in port elevator.

LANDING GEAR: Tricycle type, with Auto-Axion electro-hydraulic retraction, which lowers gear automatically during approach if pilot omits to do so, and prevents accidental retraction on ground. Manual emergency extension. Nosewheel retracts rearward, mainwheels forward into underwing fairings, optionally enclosed by doors. Spring-air-oil shock absorbers. Mainwheel tyres size 6-00-6 six-ply. Steerable nosewheel. Goodyear type 2-747 hydraulic disc brakes. Parking brakes.

POWER PLANT: One flat-six engine (details given under model descriptions). Six fuel tanks in wings with total usable capacity of 257 litres (68 US gallons). Optional auxiliary fuel tank in fuselage, increasing max usable capacity to 314 litres (83 US gallons). Refuelling points above each wing and on starboard side of fuselage. Oil capacity 11.5 litres (3 US gallons).

ACCOMMODATION: Four seats in pairs in enclosed cabin. Dual controls standard, with brakes on port side only.

Moulded glassfibre door on starboard side of cabin. Tinted glass. Baggage space, capacity 84 kg (186 lb) aft of rear seats, with glassfibre external door and in-flight access. Provision for tube carrying skis, max weight 9 kg (20 lb). Heating, ventilation and windscreen defrosting standard.

SYSTEMS: 12V electrical system, with Prestolite 60A alternator, solid-state regulator and 12V 33Ah battery. Hydraulic system for brakes only. Partial provisions for oxygen system.

AVIONICS AND EQUIPMENT: Standard equipment includes cylinder head temperature gauge, manifold pressure gauge, sensitive altimeter, internally-illuminated instruments with rheostat controls, stall warning system, anti-glare instrument panel cover, individually adjustable seats with shoulder harness, arm and headrests, pilot's storm window, tinted windows, map pockets, super soundproofing, dome light, map light, landing/taxi light, navigation lights, quick oil drain, tie-down rings and towbar. With factory installed radio equipment the following additional equipment is standard: Narco omni antenna. Electro Voice microphone, power cable, Narco VP-10 broad-band transmitting antenna and microphone jacks. Mitchell Century I, II or III autopilot optional, with optional accessories which include radio tracker, radio coupler and automatic trim for Century II or III, glideslope coupler for Century III, electric trim and switch kits. Optional radio and navigation equipment includes Bendix, Collins, King and Narco VHF transceivers, transponders and marker beacon receivers; Bendix, Collins, King, Kett and Narco ADF radio receivers; King and Narco DME and Narco course line computer. Miscellaneous optional equipment includes full blind-flying instrumentation, turn co-ordinator, outside air temperature gauge, vacuum gauge, 8-day clock, exhaust gas temperature gauge, strobe lights, heated pitot, emergency locator transmitter, boom microphone and control wheel switch, co-pilot brakes, cabin fire extinguisher, golf club/ski container, reclining front seats, inertia reel shoulder harness for each seat, cabin entry step, sun visor, external power socket, electrical operation of elevator trim, stereo tape player, Whelen strobe lights, Alcor engine analyser, Avion digital engine analyser, Astro-tech elapsed digital timer, alternate static source, altitude encoder, true airspeed indicator and Hobbs flight hour meter.

DIMENSIONS, EXTERNAL:
Wing span 10.41 m (34 ft 2 in)
Length overall 8.02 m (26 ft 4 in)
Height overall 2.24 m (7 ft 4 in)
Tailplane span 3.71 m (12 ft 2 in)
Wheel track 2.74 m (9 ft 0 in)
Wheelbase 2.24 m (7 ft 4 in)
Propeller diameter 2.03 m (6 ft 8 in)
Cabin door: Height 0.95 m (3 ft 1 1/2 in)
Max width 0.88 m (2 ft 10 1/2 in)
Baggage compartment door:
Height 0.61 m (2 ft 0 in)
Width 0.51 m (1 ft 8 1/4 in)

DIMENSIONS, INTERNAL:
Cabin:
Length, firewall to rear wall 3.10 m (10 ft 2 in)
Max width 1.09 m (3 ft 7 in)
Max height 1.19 m (3 ft 11 in)
Baggage compartment volume 0.34 m³ (12.08 cu ft)



Bellanca 17-30A Super Viking 300A (Mike Jerram)

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