DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A8EA
Revision 25
Piper Aircraft, Inc
PA-31P
PA-31T
PA-31T1
PA-31T2
PA-31T3
PA-31P-350

July 30, 2013

TYPE CERTIFICATE DATA SHEET NO. A8EA

This data sheet which is a part of type certificate No. A8EA prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder	Piper Aircraft, Inc. 2926 Piper Drive Vero Beach, Florida 32960
Type Certificate Holder Record	The New Piper Aircraft, Inc transferred TC A8EA to Piper Aircraft, Inc on August 7, 2006.

I. - Model PA-31P (Pressurized Navajo), 6 - 8 PCLM (Normal Category). Approved November 26, 1969.

Engine	Two Lycoming TIGO-541-E series
Fuel	100/130 minimum grade aviation gasoline
Engine Limits	3200 r.p.m. (2133 propeller r.p.m.) 425 hp, from sea level to 15,000 ft. altitude. Full throttle operations at all altitudes. Maximum 45.5 inches Hg. manifold pressure.
Propeller and Propeller Limits	Hartzell Hub and Blade Models: HC-C3YN-2LU/JC9684-3R, HC-C3YN-2LUF/FJC9684-3R, or HC-C3YN-2LAUF/FJC9684-3R Pitch: High 85.7 ± 1° (Feathered) Diameter: 93.0” to 93.5”
Propeller Governor	2 Woodward 210664 or 2 Woodward 210463 2 Woodward 210464 used when aircraft is equipped with Synchronizer 2 Woodward 210665 used when aircraft is equipped with Synchronizer. 2 Woodward 210772 used when aircraft is equipped with Synchronizer.

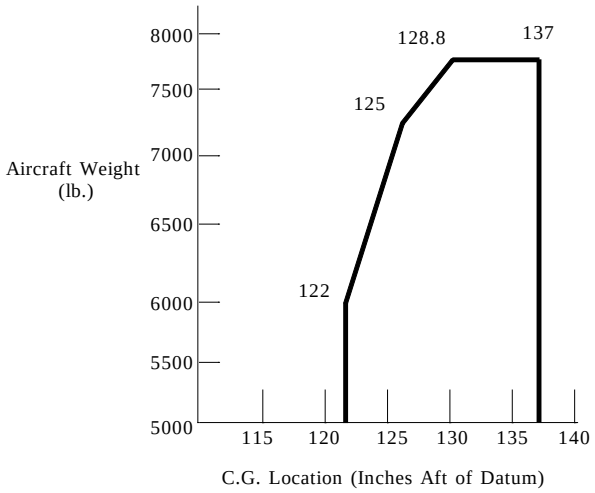
Airspeed Limits (CAS)

*V_{NE}	(Never exceed)	283 mph	(246 knots)
*V_{NO}	(Maximum structural cruise)	230 mph	(200 knots)
V_A	(Maneuvering)		
	Minimum weight - 6000 lb.	180 mph	(156 knots)
	Maximum weight - 7800 lb.	198 mph	(172 knots)
V_{FE}	(Flaps extended)		
	15° Flaps - Takeoff range	200 mph	(174 knots)
	Full flaps	150 mph	(130 knots)
V_{LO}	(Landing gear operating)		
	Extend	180 mph	(156 knots)
	Retract	150 mph	(130 knots)
V_{LE}	(Landing gear extended)	180 mph	(156 knots)
V_{MC}	(Minimum control speed) - 15° Flaps	95 mph	(83 knots)

*See NOTE 9 for variation of V_{NE} and V_{NO} at altitudes of 13,000 ft. and above.

C.G. Range (Gear Extended)

(+128.8) to (+137.0) at 7800 lb.
(+125.0) to (+137.0) at 7200 lb.
(+122.0) to (+137.0) at 6000 lb. or less
Straight line variation between points given.



Empty Weight C. G. Range: None

Maximum Weight: 7800 lb. - Takeoff
7800 lb. - Landing

No. of Seats: 6 - 8 Seats (2 at +119.0, 2 at +166.0, 2 at +198.0)
(2 optional: 1 at +229.0, 1 at +242.0)

Maximum Baggage: 400 lb. (200 lb. at +30, 200 lb. at +225)

Fuel Capacity: Total - 242 gallons
56 gallons at (+126.8) (Two wing tanks)
40 gallons at (+148.0) (Two wing tanks)
25 gallons at (+140.0) (Two nacelle tanks)
See NOTE 1 for unusable fuel data.

Oil Capacity: 36 quarts at (+83.0) (4.5 gallons each engine - 5 quarts unusable each engine)

Control Surface Movements	Aileron	24° Up	14° Down
	Aileron Tab 1 (Aileron Neutral)	15° Up	20° Down
(All measurements taken at trailing edge from neutral position)	Elevator	18° Up	20° Down
	Elevator Tab (Elevator Neutral)	10° Up	25° Down
	Rudder	35° Right	35° Left
	Rudder Tab (Rudder Neutral)	35° Right	18° Left
	Flaps		40° Down

Maximum Operating Altitude — 29,000 feet pressure altitude

Serial Numbers Eligible — 31P-1 through 31P-80 and 31P-7300110 through 31P-7730012 (See NOTE 7 and 8 for airworthiness certification eligibility in the United States).

II. - Model PA-31T (Cheyenne/Cheyenne II), 6 - 9 PCLM (Normal Category), Approved May 3, 1972.

Engine — Two Pratt Whitney of Canada Ltd. PT6A-28 (TC No. E4EA) or Two Pratt & Whitney PT6A-28 (TC No. E2NE).

Fuel — If fuel PWA 522 is not available, Aviation Gasoline MIL-G-5572, all grades, may be used for maximum of 150 hours between overhauls.

Oil — UACL PT6 Service Bulletin No. 1 lists approved brand oils.

Engine Limits (2200 r.p.m.) — Static Sea Level Ratings PT6A-28

	Shaft Horsepower	Jet Thrust	Equiv. Shaft hp	Prop Shaft Speed	Maximum Permissible Turbine Interstage Temp. (°C)
Takeoff	620**	80	652	2200*	750
Maximum Cont.	620**	80	652	2200*	750
Strtg. Trans. (2 Sec.)					1090
Maximum Reverse	200			2068	

Engine Limits (2000 r.p.m.) — Static Sea Level Ratings PT6A-28, Special Configuration - Ref. Piper Drawing No. 51670 (See Equipment Items 13 and 17)

	Shaft Horsepower	Jet Thrust	Equiv. Shaft hp	Prop Shaft Speed	Maximum Permissible Turbine Interstage Temp. (°C)
Takeoff	620**	80	652	2200*	750
Maximum Cont.	620**	80	652	2200*	750
Strtg. Trans. (2 Sec.)					1090
Maximum Reverse	200			1920	

*See NOTE 6
**Available to ISA + 18°C

Propeller and Propeller Limits — Hartzell Hub and Blade Models:
HC-B3TN-3B/T-10173-HB-8 or HC-B3TN-3B/T-10173-B-8
Pitch: High 87° ± 1° (Feathered), Low 20.2° at 30 in. station.
Diameter: 93.0" to 93.5"

Propeller Governor — 2 Woodward 8210-003 Propeller Governors

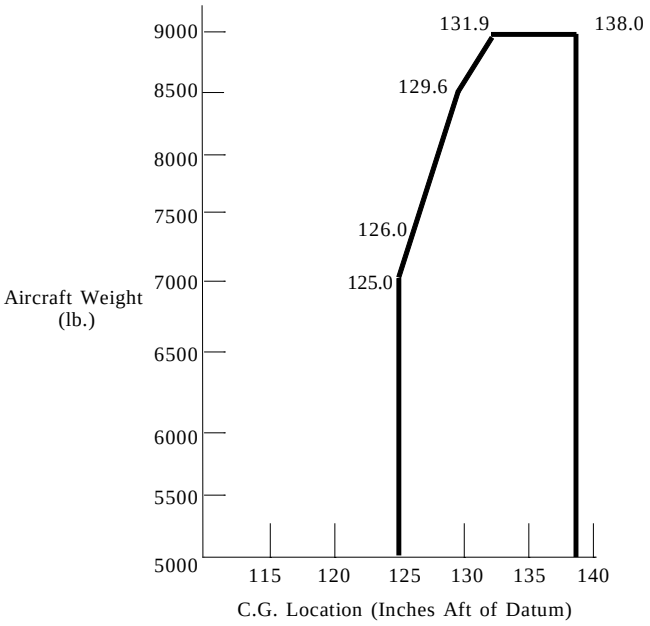
Airspeed Limits

V_{MO}	(Maximum operating - up to 12,000 ft.)	283 mph	(246 knots)
	See V_{MO} Chart for speeds above 12,000 ft. in Flight Manual		
V_A	(Maneuvering)		
	Minimum weight - 5,195 lb.	168 mph	(146 knots)
	Maximum weight - 9,000 lb. - up to 26,900 ft.	207 mph	(180 knots)
	See V_{MO} Chart for speeds above 26,900 ft. in Flight Manual		
V_{FE}	(Flaps extended)		
	15° flaps	200 mph	(174 knots)
	Full flaps	165 mph	(144 knots)
V_{LO}	(Landing gear - operating)		
	Extended	180 mph	(156 knots)
	Retracted	150 mph	(143 knots)
V_{LE}	(Landing gear extended)	180 mph	(156 knots)
V_{MC}	(Minimum control speed)	110 mph	(96 knots)

C.G. Range (Gear Extended)

(+131.9)	to (+138.0)	at	9000 lb.		(S/N 31T-7400002 through 31T-7720069)
(+129.6)	to (+138.0)	at	8500 lb.		(S/N 31T-7400002 through 31T-8120104)
(+126.0)	to (+138.0)	at	7170 lb.	or less	(S/N 31T-8020001 through 31T-8120104)
(+125.0)	to (+138.0)	at	6800 lb.	or less	(S/N 31T-7400002 through 31T-7920094)

Straight line variation between points given.



Empty Weight C. G. Range

None

Maximum Weight

9000 lb. - Takeoff
9000 lb. - Landing
9050 lb. - Ramp

No. of Seats

6 - 8 (2 at +119.0, 2 at +166.0, 2 at +198.0)
(2 Optional: 1 at +229.0, 1 at +242.0)

Maximum Baggage

500 lb. (300 lb. at +30, 200 lb. at +255)
Piper Kit No. 760 987 required for S/N 31T-7400002 through 31T-7520050 if more than 200 lb. forward baggage capacity is used.

Fuel Capacity
390 gallons maximum at (+138.9)
195 gallons when filled through wing tip filler (two wing tanks)
or
346 gallons maximum at (+138.9)
173 gallons when filled through wing tip filler (two wing tanks)
See NOTE 1 for unusable fuel data.

Oil Capacity
26 quarts at (+91.8) (13 quarts each engine - 3 quarts unusable each engine)

Control Surface Movements (All measurements taken at trailing edge from neutral position)

Aileron	24° Up	14° Down
Aileron Tab 1 (Aileron Neutral)	15° Up	20° Down
Elevator	16° Up	20° Down
Elevator Tab 1 (Elevator Neutral)	1° Up	36° Down
Rudder (Rudder Neutral)	35° Right	35° Left
Flaps		40° Down

Maximum Operating Altitude
29,000 ft. pressure altitude
31,000 ft. pressure altitude (S/N 31T-8020001 through 31T-8120104)

Serial Numbers Eligible
31T-7400002 through 31T-7400018; and
31T-7520001 through 31T-8120104
Note: For the serial number range specified (31T-7520001 through 31T-8120104, only serial numbers with the following format are eligible;
31T-XX20XXX where X is a number between zero (0) and nine (9) inclusive. The characters "31T" and "20" must appear in the positions shown.
For example, 31T-7820055 is a valid serial number for model PA-31T, but serial number 31T-7804010 is not.
(See NOTE 7 and 8 for airworthiness certification eligibility in the United States).

III. - Model PA-31T1 (Cheyenne I/IA), 6 - 7 PCLM (Normal Category), Approved March 6, 1978.

Engine
Two UACL PT6A-11

Fuel
If fuel PWA 522 is not available, Aviation Gasoline MIL-G-5572, all grades, may be used for maximum of 150 hours between overhauls.

Oil
UACL PT6 Service Bulletin No. 1 lists approved brand oils.

Engine Limits
Static Sea Level Ratings PT6A-11

	Shaft Horsepower	Jet Thrust	Equiv. Shaft hp	Prop Shaft Speed	Maximum Permissible Turbine Interstage Temp. (°C)
Takeoff	500**	70	528	2200*	700
Maximum Cont.	455**	65	481	2000*	685
Strtg. Trans. (2 Sec.)					1090
Maximum Reverse	200			2068	

*See NOTE 6
**Available to ISA + 18°C

Propeller and Propeller Limits
Hartzell Hub and Blade Models:
HC-B3TN-3B/T10173B-8
HC-B3TN-3B/T-10173K-8 for S/N 31T-8304001 through 31T-8304003, and 31T-1104004 through 31T-1104017
Pitch: High 87° (Feathered), Low 20.2° at 30 in. station.
Diameter: 93.0" to 93.5"

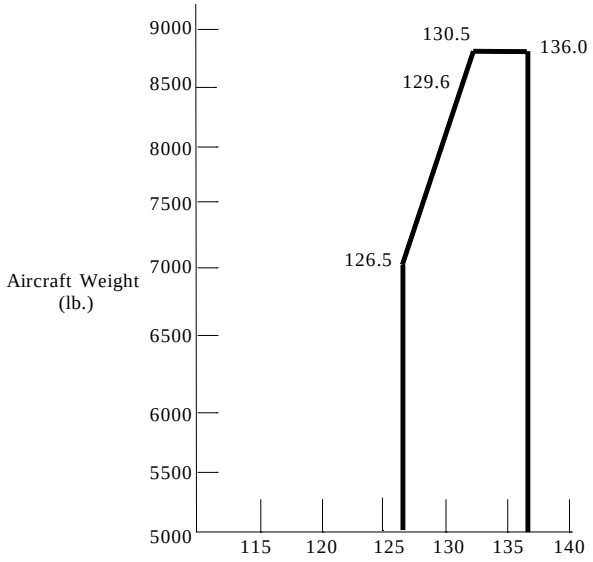
Propeller Governor
2 Woodward 8210-003 or 8210-035 Propeller Governors

Airspeed Limits (CAS)

V_{MO}	(Maximum operating -without tip tanks)	265 mph	(230 knots)
V_{MO}	(Maximum operating - with tip tanks - up to 9,500 ft.) (For speeds above 9,500 ft., see Flight Manual)	283 mph	(246 knots)
V_A	(Maneuvering - without tip tanks)		
	Minimum weight - 5,195 lb.	168 mph	(146 knots)
	Maximum weight - 8,700 lb. - up to 24,600 ft. (For speeds above 24,600 ft., see Flight Manual.)	207 mph	(180 knots)
V_A	(Maneuvering - with tip tanks)		
	Minimum weight - 5,195 lb.	168 mph	(146 knots)
	Maximum weight - 8,700 lb.--up to 27,700 ft. (For speeds above 27,700 ft., see Flight Manual.)	207 mph	(180 knots)
V_{FE}	(Flaps extended)		
	15° Flaps	200 mph	(174 knots)
	Full Flaps	165 mph	(143 knots)
V_{LO}	(Landing gear - operating)		
	Extend	180 mph	(156 knots)
	Retract	165 mph	(143 knots)
V_{LE}	(Landing gear extended)	180 mph	(156 knots)
V_{MC}	(Minimum control speed)	104 mph	(90 knots)

C.G. Range (Gear Extended)

(+130.5) to (+136.0) at 8700 lb.
(+129.6) to (+136.0) at 8500 lb.
(+126.5) to (+136.0) at 7200 lb. or less
Straight line variation between points given.



Empty Weight C. G. Range

None

Maximum Weight

8700 lb. - Takeoff
8700 lb. - Landing
8750 lb. - Ramp

No. of Seats

31T-7804001 through 31T-8104073 and 31T-8104101:
6 - 7 Seats (2 at +119.0, 2 at +166.0, 2 at +198.0)
(2 optional, 1 at +229.0)

31T-8304001 through 31T-8304003, 31T-1104004 through 31T-1104017:
6 - 7 Seats (2 at +116.96 to +121.09)
(2 at +149.85 to +172.85)
(2 at +196.50 to +212.35)
(1 at +232.60 to +240.50)

Maximum Baggage	31T-7804001 through 31T-8104073 and 31T-8104101: 500 lb. (300 lb. at +30, 200 lb. at +255) 31T-8304001 through 31T-8304003, and 31T-1104004 through 31T-1104017: 500 lb. (300 lb. at +37, 200 lb. at +260.0)
Fuel Capacity (Standard)	308 gallons maximum at (+138.9) 154 gallons (two wing tanks) when filled through nacelle filler.
Fuel Capacity (including optional tip tanks)	390 gallons maximum at (+138.9) 195 gallons (two wing tanks) when filled through wing tip filler. or 346 gallons maximum at (+138.9) 173 gallons (two wing tanks) when filled through nacelle filler. 31T-8304001 through 31T-8304003, and 31T-1104004 through 31T-1104017: 374 gallons maximum at (+138.3) 187 gallons (two wing tanks) when filled through nacelle filler. or 336 gallons maximum at (+138.3) 168 gallons (two wing tanks) when filled through nacelle filler. See NOTE 1 for unusable fuel data.
Oil Capacity	26 quarts at (+91.8) (13 quarts each engine - 3 quarts unusable each engine)

Control Surface Movements (All measurements taken at trailing edge from neutral position)			
	Aileron	24° Up	14° Down
	Aileron Tab 1 (Aileron Neutral)	15° Up	20° Down
	Elevator	16° Up	20° Down
	Elevator Tab (Elevator Neutral)	1° Up	36° Down
	Rudder	35° Right	35° Left
	Rudder Tab (Rudder Neutral)	20° Right	45° Left
	Flaps		40° Down

Maximum Operating Altitude	29,000 ft. pressure altitude
Serial Numbers Eligible	31T-7804001 through 31T-8104073; 31T-8104101; 31T-8304001 through 31T-8304003; and 31T-1104004 through 31T-1104017 Note: only serial numbers with the following format are eligible: 31T-XX04XXX where X is a number between zero (0) and nine (9) inclusive. The characters "31T" and "04" must appear in the positions shown. For example, 31T-7804010 is a valid serial number for model PA-31T1, but serial number 31T-7820055 is not. (See NOTE 7 and 8 for airworthiness certification eligibility in the United States).

IV. - Model PA-31T2 (Cheyenne IIXL), 6 - 10 PCLM (Normal Category), Approved February 12, 1981.

Engine	2 UACL PT6A-135
Fuel	If fuel PWA 522 is not available, Aviation Gasoline MIL-G-5572, all grades, may be used for maximum of 150 hours between overhauls (See PWA Service Bulletin No. 1244).

Oil

CPW 202 or PWA 521 Type II (See PWA PT6 Service Bulletin No. 1001 for approved brands.)

Engine Limits

Static Sea Level Ratings PT6A-135

	Shaft Horsepower	Torque ft-lb.	Prop Shaft Speed	Maximum Permissible Turbine Interstage Temp. (°C)
Takeoff	620**	1714	1900*	805
Maximum Cont.	620***	1714	1900*	805
Strtg. Trans. (2 Sec.)				1090
Maximum Reverse	200	655	1815	805

*See NOTE 11
**Available to ISA +23°C
***Available to ISA +24°C

Propeller and Propeller Limits

Hartzell Hub and Blade Models:
HC-B3TN-3B/T10178B-8R
Pitch: High 88.2° ± .5° (Feathered); Low 20.2° ± 1°; Reverse -11° ± 5° at 30 in. station.
Diameter: 93.0" to 93.5"

Propeller Governor

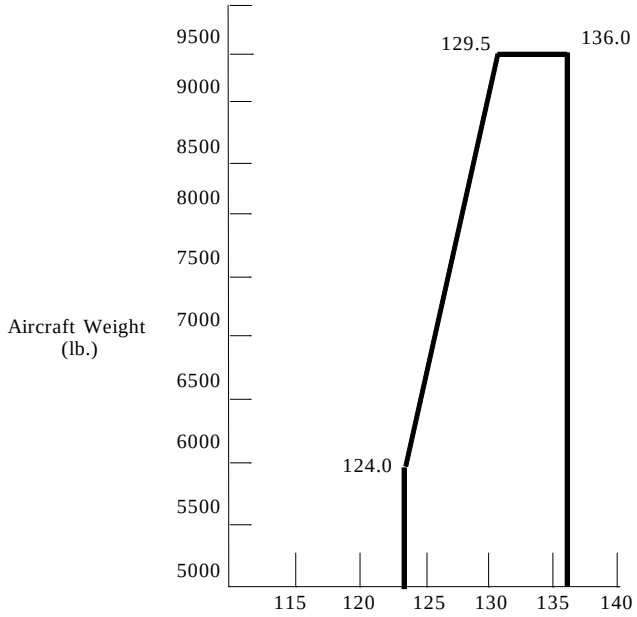
2 Woodward 8210-003 Propeller Governors

Airspeed Limits (CAS)

V_{MO}	(Maximum operating - up to 12,000 ft.)	283 mph	(246 knots)
	(For speeds above 12,000 ft., see Flight Manual)		
V_A	(Maneuvering)		
	Minimum weight - 5,704 lb.	176 mph	(153 knots)
	Maximum weight - 9,474 lb. - up to 25,300 ft.	215 mph	(187 knots)
	(See V_{MO} chart for speeds above 25,300 ft. in Flight Manual)		
V_{FE}	(Flaps extended)		
	15° Flaps	200 mph	(174 knots)
	Full Flaps	166 mph	(144 knots)
V_{LO}	(Landing gear operating)		
	Extend	180 mph	(156 knots)
	Retract	165 mph	(143 knots)
V_{LE}	(Landing gear extended 200 lb. at (+255))	180 mph	(156 knots)
	(Nitrogen system)	138 mph	(120 knots)
V_{MC}	(Minimum control speed)	110 mph	(96 knots)

C.G. Range (Gear Extended

(+124.0) to (+136.0) at 5850 lb. and less
(+129.5) to (+136.0) at 9474 lb.
Straight line variation between points given.
Location of datum is 137.0 inches forward of the main spar centerline.



Empty Weight C. G. Range

None

Maximum Weight

9474 lb. - Takeoff
9000 lb. - Landing
9540 lb. - Ramp
7600 lb. - Maximum Zero Fuel Weight

No. of Seats

6 - 8 Seats (2 at +95.0, 2 at +142.6 (aft facing))
(2 at +165.9 (fwd facing))
(2 at +196.5, or 1 at +229.0 and 1 at +242.0)

6 - 8 Seats (2 at +95.0)
(2 at +130.9)
(2 at +165.9)
(1 at +229.0)
(1 at +242.0)

6 - 10 Seats * (2 at +95.0)
(2 at +130.9)
(2 at +165.6)
(2 at +196.5)
(1 at +229.0)
(1 at +242.0)

*For aircraft modified per Piper Dwg. No. 02252. See Equipment Item No. 23.

Maximum Baggage

500 lb. (300 lb. at +3)
(200 lb. at +255)

Fuel Capacity

390 gallons maximum at (+138.9)
195 gallons (two wing tanks) when filled through wing tip filler.
or
346 gallons maximum at (+138.9)
173 gallons (two wing tanks) when filled through nacelle filler.
See NOTE 1 for unusable fuel data.

Control Surface Movements

(All measurements taken at trailing edge from neutral position)

Aileron	24° Up	14° Down
Aileron Tab (Aileron Neutral)	15° Up	20° Down
Elevator	16° Up	20° Down
Elevator Tab (Elevator Neutral)	1° Up	36° Down
Rudder	35° Right	35° Left
Rudder Tab (Rudder Neutral)	20° Right	45° Left
Flaps	40° Down	

Maximum Operating Altitude

31,000 ft. pressure altitude

Serial Numbers Eligible

31T-8166001 through 31T-8166076, and 31T-1166001 through 31T-1166008
(See NOTE 7 and 8 for airworthiness certification eligibility in the United States).

V. - Model PA-31T3 (T-1040), 9 - 11 PCLM (Normal Category), Approved February 25, 1982.

Engine

Two UACL PT6A-11

Fuel

If fuel PWA 522 is not available, Aviation Gasoline MIL-G-5572, all grades, may be used for maximum of 150 hours between overhauls.

Oil

UACL PT6 Service Bulletin 1 lists approved brand oils.

Engine Limits

Static Sea Level Ratings PT6A-11

	Shaft Horsepower	Jet Thrust	Equiv. Shaft hp	Prop Shaft Speed	Maximum Permissible Turbine Interstage Temp. (°C)
Takeoff	500**	70	528	2200*	700
Maximum Cont.	500**	70	528	2200*	700
Strtg. Trans. (2 Sec.)					1090
Maximum Reverse	200			2112	

*See NOTE 6.
**Available to ISA + 18°C

Propeller and Propeller Limits

Hartzell Hub and Blade Models:
HC-B3TN-3B/T-10173B-8
Pitch: High 87° ± 1° (Feathered), Low 20.2° at 30 in. station.
Diameter: 93.0” to 93.5”

Propeller Governor

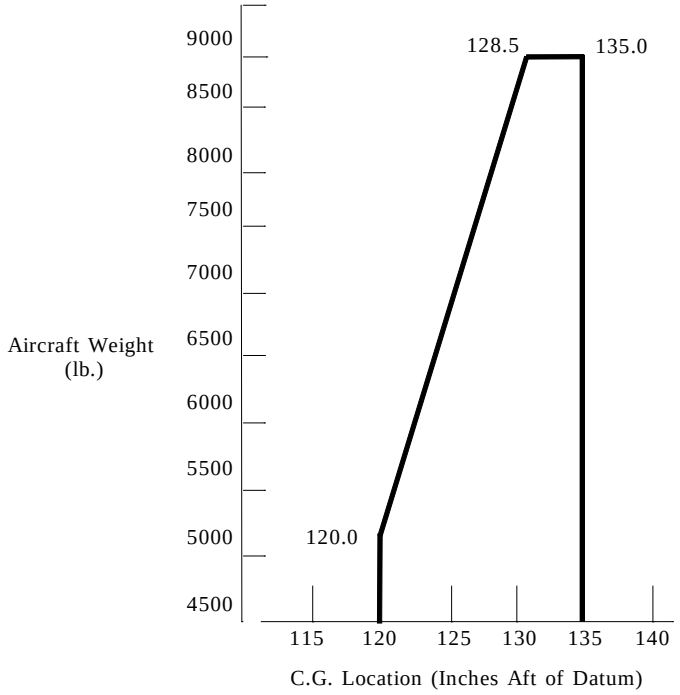
2 Woodward 8210-003 or 8210-035 Propeller Governors

Airspeed Limits (CAS)

V_{MO}	(Maximum operating - up to 12,000 ft.)	265 mph	(230 knots)
	(See V_{MO} chart for speeds above 12,000 ft. in Flight Manual)		
V_A	(Maneuvering)		
	Minimum weight - 4924 lb.	166 mph	(144 knots)
	Maximum weight - 9000 lb.	210 mph	(183 knots)
	(Up to 23,600 ft., see V_{MO} chart for speeds above 23,600 ft. in Flight Manual)		
V_{FE}	(Flaps extended)		
	15° flaps	200 mph	(174 knots)
	Full flaps	165 mph	(143 knots)
V_{LO}	(Landing gear operating)		
	Extend	180 mph	(156 knots)
	Retract	165 mph	(143 knots)
V_{LE}	(Landing gear extended)	180 mph	(156 knots)
V_{MC}	(Minimum control speed)	103 mph	(90 knots)

C.G. Range (Gear Extended)

(+128.5) to (+135.0) at 9000 lb.
(+120.0) to (+135.0) at 5200 lb. or less
Straight line variation between points given.



Empty Weight C.G. Range

None

Maximum Weight

9000 lb. - Takeoff
9000 lb. - Landing
9050 lb. - Ramp
7600 lb. - Maximum Zero Fuel Weight

No. of Seats

9 - 11 Seats (2 at +95.0, 2 at +130.9,
2 at +164.6, 2 at +193.6,
1 at +222.6, 2 at +253.5)

Maximum Baggage	Standard Total			700 lb.	
	With Optional Cargo Pod			1050 lb.	
		Fuselage		300 lb. at (+13)	
				100 lb. at (+268)	
		Nacelle Lockers		150 lb. each side at (+182)	
		Cargo Pod		350 lb.	
	See Supplement 8 to Airplane Flight Manual - Piper Report 2297 for data concerning C.G.				
	Minimum Zero Fuel Weight for loading Nacelle Lockers - 5066 lb.				
Fuel Capacity (Standard)	300 gallons maximum at (+135.9) (150 gallons each wing)				
	See NOTE 1 for unusable fuel data.				
Oil Capacity	26 quarts at (+91.8) (13 quarts each engine - 3 quarts unusable each engine)				
Control Surface Movements	Aileron		24° Up	14° Down	
	Aileron Tab 1		15° Up	20° Down	
(All measurements taken at trailing edge from neutral position)	(Aileron Neutral)				
	Elevator		16° Up	20° Down	
	Elevator Tab		1° Up	36° Down	
	(Elevator Neutral)				
	Rudder		35° Right	35° Left	
	Rudder Tab		20° Right	45° Right	
	(Rudder Neutral)				
	Flaps			40° Down	
Maximum Operating Altitude	24,000 ft. pressure altitude				
Serial Numbers Eligible	31T-8275001 through 31T-8475001, and 31T-5575001				

VI. - Model PA-31P-350 (Mojave), 6 - 7 PCLM (Normal Category), Approved June 9, 1983.

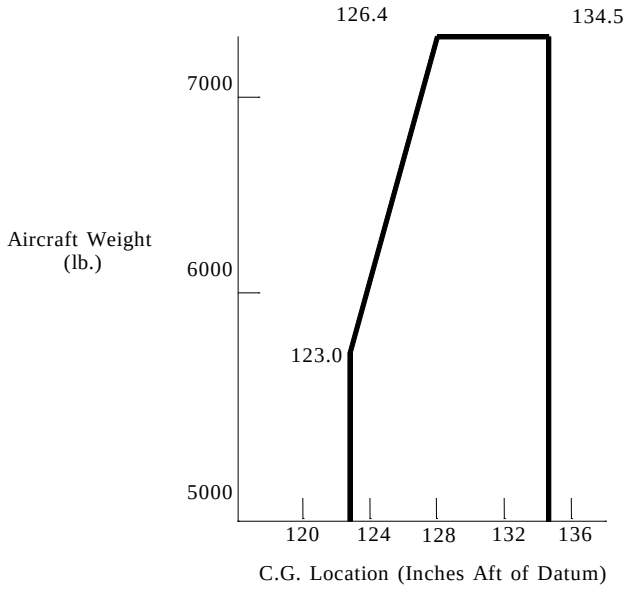
Engine	Two Lycoming TIO-LTIO-540V2AD	
Fuel	100 or 100LL minimum grade aviation gasoline	
Engine Limits	2600 r.p.m., 42 in. Hg., 350 hp. to 18,000 ft.	
	Above 18,000 ft., 2600 r.p.m., reduce manifold pressure to 33.6 in. Hg. at 25,000 ft.	
	(Straight line variation between 18,000 ft. and 25,000 ft.)	
Propeller and Propeller Limits	Hartzell Hub and Blade Models:	
	HC-I3YR-2UF/FC7854 or HC-I3YR-2UF/FC7854K (Left)	
	HC-I3YR-2LUF/FJC7854 or HC-I3YR-2LUF/FJC7854K (Right)	
	Pitch:	High 16.5° to 19.5°; Low 12.5° ± 0.1°; Feather 80° ± 0.5° at 30 in. station.
	Diameter:	80 in.
		No reduction permitted.
Propeller Governor	1 Hartzell Model V-1	
	1 Hartzell Model V-1L	

Airspeed Limits (CAS)

V_{NE}	(Never exceed- up to 12,264 ft.)	271 mph	(236 knots)
	For speeds above 12,264 feet, see Flight Manual		
V_{NO}	(Maximum structural cruise speed)	215 mph	(187 knots)
V_A	(Maneuvering speed at maximum gross weight)	188 mph	(164 knots)
V_{FE}	(Flaps extended)		
	15°	184 mph	(160 knots)
	Full flaps	150 mph	(130 knots)
V_{LO}	(Landing gear operating)		
	Extend	180 mph	(156 knots)
	Retract	150 mph	(130 knots)
V_{LE}	(Landing gear extended)	180 mph	(156 knots)
V_{MC}	(Minimum control speed)	85 mph	(74 knots)

C.G. Range (Gear Extended)

(+126.4) to (+134.5) at 7200 lb.
(+123.0) to (+134.5) at 5600 lb. or less
(+126.5) to (+134.5) at 7245 lb. ramp weight
Straight line variation between points given.



Empty Weight C.G. Range

None

Maximum Weight

7200 lb. - Takeoff
7000 lb. - Landing
7245 lb. - Ramp
6700 lb. - Maximum Zero Fuel Weight

No. of Seats

6 - 7 Seats (2 at +116.96 to +121.09)
(2 at +149.85 to +162.60)
(2 at +196.50 to +212.35)
(1 at +232.60 to +240.50)

Maximum Baggage

Total - 680 lb.
Fuselage - 300 lb. at +37.0
200 lb. at +260.40
Nacelle Lockers, 90 lb. each side at +180.00

Fuel Capacity	242 gallons maximum at (+134.9) (12.5 gallons each wing) See NOTE 1 for unusable fuel data.					
Oil Capacity	26 quarts at (+77.5) (13 quarts each side) 13 quarts unusable at (+77.5) (6.5 quarts each side)					
Control Surface Movements	Aileron	(± 1°)	24°	Up	14°	Down
	Aileron Tab	(± 1°)	15°	Up	20°	Down
(All measurements taken at trailing edge from neutral position)	(Aileron Neutral)					
	Elevator	(± 1°)	16°	Up	20°	Down
	Elevator Tab	(± 1°)	9°	Up	36°	Down
	(Elevator Neutral)					
	Rudder	(+ 0°, - 1°)	30°	Left	30°	Right
	Rudder Tab	(± 1°)	40°	Left	18°	Right
	(Rudder Neutral)					
	Flaps	(± 1°)	40°	Down		
Maximum Operating Altitude	25,000 ft. pressure altitude					
Serial Numbers Eligible	31P-8414001 through 31P-8414050.					

DATA PERTINENT TO ALL MODELS

Datum

137 inches forward of the main spar centerline.

Leveling Means

Top of two rivnuts on right side of nose near access door.

Certification Basis

Type Certificate No. A8EA issued February 24, 1966, reissued June 25, 1966 and October 25, 1972, obtained by the manufacturer under the delegation option authorization.
Date of Type Certificate application March 15, 1962.

CAR 3 effective May 15, 1956, through Amendment 3-8, effective December 18, 1962; and FAR 23.205, 23.1545, 23.1563 and 23.1585 as amended by Amendment 23-3, effective November 11, 1965; and FAR 23.1557(c) as amended by Amendment 23-7, effective September 14, 1969.
Eastern Region Engineering and Manufacturing Branch letter of December 6, 1965, addresses the showing of equivalent safety with regard to CAR 3.682, 3.771 and 3.772.

In addition:

Model PA-31T: Special Conditions Nos. 23-3-EA-1 Docket No. 9245 including Amendment No. 1 and AEA-210 letter of November 11, 1971, and FAR 23.991 as amended by Amendment 23-7, effective September 14, 1969.

Model PA-31T1: Special Conditions No. 23-3-EA-1 Docket No. 9245 including Amendment No. 1 and AEA-210 letter of November 11, 1971, as amended by AEA-210 letter of February 1, 1978, referring to Amendment 23-14 and FAR 23.991 as amended by Amendment 23-7, effective September 14, 1969, and SFAR 27 (Fuel Venting).

Model PA-31T2: Special Conditions No. 23-3-EA-1 Docket No. 9245 including Amendment No. 1 and AEA-210 letter of November 11, 1971, as amended by AEA-210 letter of February 1, 1978, referring to Amendment 23-14 and FAR 23.991 as amended by Amendment 23-7, effective September 14, 1969.
Noise Certification - FAR 36 up to Amendment 10, as applicable.
Fuel Venting Emissions - SFAR 27 up to Amendment 3, as applicable.

Certification Basis

Model PA-31T3: Special Conditions No. 23-3-EA-1 Docket No. 9245 including Amendment No. 2 and AEA-210 letter of November 11, 1971, as amended by AEA-210 letter of February 1, 1978, referring to Amendment 23-14 and FAR 23.991 as amended by Amendment 23-7, effective September 14, 1969.

Noise Certification - FAR 36 up to Amendment 10, as applicable.

Fuel Venting Emissions - SFAR 27 up to Amendment 3, as applicable.

Model PA-31P-350: FAR 23.75(a) and 23.77 as amended by Amendment 23-7, effective September 14, 1969, and FAR 23.145, 23.161, 23.173, and 23.175 as amended by Amendment 23-14, effective December 20, 1973.

Noise Certification - FAR 36 up to Amendment 12, as applicable.

Production Basis

Approved for manufacture of spare parts only under Production Certificate No. 206.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. In addition, the following items of equipment are required:

1. Stall Warning Indicator
   (a) Deleted April, 1978
   (b) Installed per Piper Drawing 46600 on Model PA-31P
2. Deleted April, 1978
3. Deleted April, 1978
4. D.O.A. No. EA-1 approved Airplane Flight Manual Report No. 1615 dated January 23, 1970 for Model PA-31P, S/N 31P-1 through 31P-80, and 31P-7300110 through 31P-7630019.
5. Deleted April, 1978
6. Deleted April, 1978
7. Deleted April, 1978
8. Deleted April, 1978
9. D.O.A. No. EA-1 Approved Airplane Flight Manual per Piper Report 1740 dated May 3, 1972, issued February 11, 1974, for Model PA-31T, S/N 31T-7400002 through 31T-7620057.
10. Deleted April, 1978
11. Deleted April, 1978
12. Stability Augmentation System (SAS) installed per Piper Drawing 51770 for PA-31T, S/N 31T-7400002 through 31T-8120104.
13. D.O.A. No. EA-1 Approved Airplane Flight Manual per Piper Report 1942 dated June 20, 1975, for Model PA-31T, S/N 31T-7400002 through 31T-7620057 when airplane is modified per Piper Drawing No. 51670. (2000 r.p.m.).
14. D.O.A. No. EA-1 Approved Pilot's Operating Handbook per Piper Report 2047 dated October 14, 1976, for Model PA-31P, S/N 31P-7730001 through 31P-7730012.
15. D.O.A. No. EA-1 Approved Pilot's Operating Handbook per Piper Report 2048 dated October 21, 1976, for Model PA-31T, S/N 31T-7720001 through 31T-7920094.
16. D.O.A. No. EA-1 Approved Pilot's Operating Handbook per Piper Report 2124 dated May 15, 1978, for Model PA-31T1, S/N 31T-7804002 through 31T-8104073; 31T-8104101; 31T-8304001 through 31T-8304003; and 31T-1104004 through 31T-1104017.

17a. When PA-31T, S/N 31T-7720001 through 31T-7920094 are modified per Piper Dwg. No. 51670 (2000 r.p.m.), Piper Supplemental Report No. 2092 dated August 12, 1977, "2000 R.P.M. Limitation" must be added to the basic Pilot's Operating Handbook.

17b. When PA-31T, S/N 31T-8020001 through 31T-8120104 are modified per Piper Dwg. No. 51670 (2000 r.p.m.), Piper Supplement Report No. 2259 dated June 27, 1980, "2000 R.P.M. Limitation" must be added to the basic Pilot's Operating Handbook.

18. D.O.A. No. EA-1 Approved Pilot's Operating Handbook per Piper Report 2210 for Model PA-31T, S/N 31T-8020001 through 31T-8120104.

Equipment (cont.)

19. D.O.A. No. EA-1 Approved Pilot's Operating Handbook per Piper Report 2272 dated May 26, 1981, for Model PA-31T2, S/N 31T-8166001 through 31T-8166076, and 31T-1166001 through 31T-1166008.
20. D.O.A. No. EA-1 Approved Pilot's Operating Handbook per Piper Report 2297 dated February 25, 1982, for Model PA-31T3, S/N 31T-8275001 through 31T-8475001, and 31T-5575001.
21. D.O.A. No. EA-1 Approved Pilot's Operating Handbook per Piper Report 2311 dated May 6, 1983, for Model PA-31T1, S/N 31T-8304001 through 31T-8304003, and 31T-1104004 through 31T-1104017.
22. D.O.A. No. EA-1 Approved Pilot's Operating Handbook per Piper Report Number 2313, dated June 9, 1983, for Model PA-31P-350, S/N 31P-8414001 through 31P-8414050.
23. When Model PA-31T2, S/N 31T-8166001 through 31T-8166076, and 31T-1166001 through 31T-1166008 are modified per Piper Dwg. No. 02252, Piper Supplement 8 Report 2272 dated July 6, 1983, must be added to the basic Pilot's Operating Handbook.

NOTE 1 Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary must be provided for each aircraft at the time of original certification. All of the fuel and oil can be drained. However, the certificated empty weight and corresponding center of gravity location must include unusable fuel of 36 lb. at (+129.0) for Model PA-31P; 54 lb. at (+129.0) for Models PA-31T and PA-31T1; 54 lb. at (+133.0) for Model PA-31T2; 54 lb. at (+125.0) for Model PA-31T3; 30 lb. at (+125.1) for Model PA-31P-350.

NOTE 2 All placards required in the approved Airplane Flight Manual must be installed in the appropriate locations.

In addition, the following placard must be displayed in full view of the pilot:

"THIS AIRCRAFT MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS. NO ACROBATIC MANEUVERS (INCLUDING SPINS) APPROVED."

NOTE 3 For Models PA-31T, PA-31T1, PA-31T2 and PA-31T3, the elevator downspring, P/N 51484, must be replaced upon the accumulation of 2,000 hours time-in-service, and thereafter at every 2000 hours time-in-service.

NOTE 4 Deleted April, 1978

NOTE 5 Deleted April, 1978

NOTE 6 The maximum propeller shaft overspeed limit is 110% of all ratings and may be employed for sustained periods in emergencies. 100% propeller shaft speed is defined as 2200 r.p.m. and is the operating limit. Gas generator speeds up to 102.5% are permissible for 10 seconds and to 101.5% for unlimited periods subject to applicable temperature and other limits. 100% gas generator speed is defined as 37,500 r.p.m..

NOTE 7 Any aircraft with a letter prefix on the serial number is not eligible for Airworthiness Certification in the United States; for example, AR31-XXXXXXX.

NOTE 8 The following S/N are not eligible for Airworthiness Certification in the United States:

PA-31P:
31P-7400211, 31P-7400213, 31P-7400219, 31P-7400230, 31P-7530016, and 31P-7530021.

PA-31T:
31T-7920017, 31T-7920031, 31T-7920033, 31T-7920050, 31T-7920076, 31T-7920080, 31T-7920085, 31T-8020013, 31T-8020028, 31T-8020040, 31T-8020047, 31T-8020054, 31T-8020077, 31T-8020079, 31T-8020092, 31T-8120015, 31T-8120032, 31T-8120037, 31T-8120047, 31T-8120051, 31T-8120062, and 31T-8120064.

PA-31T1:
31T-7904045.

PA-31T2:
31T-8166019, 31T-8166035, 31T-8166053, 31T-8166059,and 31T-8166073.

NOTE 9 For Model PA-31P - Reduce V_{NO} and V_{NE} speeds as follows:

Altitude (1000 feet)	V_{NO} (mph)	V_{NE} (mph)
13	230	278
15	230	268
17	230	258
19	221	248
21	212	238
23	203	228
25	194	218
27	185	208
29	176	198

NOTE 10 Refer to Type Certificate Data Sheet No. A20SO for Models PA-31, PA-31-300, PA-31-325, and PA-31-350. Models PA-31, PA-31-300, PA-31-325 and PA-31-350, originally produced under this type certificate are now under Type Certificate A20SO. Information pertaining to these model aircraft is published on Type Certificate Data Sheet A20SO. This applies to the following serial numbered aircraft:

PA-31	S/N 31-2 through 31-900 and 31-7300901 through 31-7812073
PA-31-300	S/N 31-2 through 31-511
PA-31-325	S/N 31-7300932 through 31-7812072
PA-31-350	S/N 31-5001 through 31-5004 and 31-7305005 through 31-7852079

This NOTE reflects a split in the original Type Certificate for administrative purposes. All serial numbered aircraft subsequent to the above are manufactured under Type Certificate A20SO. Refer to Type Certificate Date Sheet A20SO for all information pertaining to Models PA-31, PA-31-300, PA-31-325, and PA-31-350.

NOTE 11 The maximum propeller shaft overspeed limit is 110% of all ratings and may be employed for sustained periods in emergencies. 100% propeller shaft speed is defined as 33,000 r.p.m. power turbine and 1900 r.p.m. propeller speed. This is the normal steady state operating limit. Gas generator speeds up to 102.6% are permissible for 2 seconds and to 101.5% for unlimited periods subject to applicable temperature and other limits. 100% gas generator speed (N_g) is defined at 37,500 r.p.m..

...END...