

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

6A1  
Revision 48  
Twin Commander  
500  
500A  
500B  
500U  
520  
560  
560A  
560E  
500S

September 25, 2015

**TYPE CERTIFICATE DATA SHEET NO. 6A1**

This data sheet, which is a part of Type Certificate No. 6A1 prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the Airworthiness requirements of the Civil Air Regulations.

Type Certificate Holder: Twin Commander Aircraft LLC  
1176 Telecom Drive  
Creedmoor, NC 27522

Type Certificate Holder Record: Aero Design and Engineering Company, also known as Aero Commander Aircraft, transferred type certificate 6A1 to Rockwell-Standard & Associates in 1958.  
Rockwell transferred type certificate 6A1 to Gulfstream American Corporation on February 3, 1981.  
Gulfstream American Corporation transferred type certificate 6A1 to Gulfstream Aerospace Corporation on November 29, 1981.  
Gulfstream Aerospace Corporation transferred type certificate 6A1 to Twin Commander Aircraft Corporation on December 4, 1989.  
Twin Commander Aircraft Corporation transferred type certificate 6A1 to Twin Commander Aircraft LLC on June 15, 2004.

**I - Model L-3805 - Deleted July 29, 1969.**

**II - Model 520, 5 PCLM (Normal Category), Approved January 31, 1952**

Engines 2 Lycoming GO-435-C2 or 2 Lycoming GO-435-C2B with Bendix carburetor PS-5BD Setting 391486 or 2 Lycoming CO-435-C2B1 with Bendix carburetor PS-5BD Setting 391486.

Fuel 80/87 or 91/96 min. grade aviation gasoline

Engine limits Max. continuous 3000 r.p.m. (240 hp)  
Takeoff (5 minutes), 3400 r.p.m. (260 hp.)

Propeller and Propeller limits 1. (For GO-435-C2 only) 2 Hartzell constant speed propellers installed in accordance with Rockwell Dwg. 640007.  
a. HC-12x20-8C hubs with 9333C-3 blades  
Pitch settings at 30 in. station: Low 19°, high 36°  
Diameter: 90 in., 2 in. cutoff permitted  
b. Spinner: 2 Hartzell D-163  
c. Governor: 2 Hartzell A-1 and Hartzell "T-Drives"

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2. Or, (for GO-435-C2 only) 2 Hartzell feathering propellers installed in accordance with Rockwell Drawings 640008
  - a. HC-12x20-9C hubs with 9333C-3 blades  
Pitch settings at 30 in. Station: Low 19°, High 36°  
Diameter: 90 in., 2 in. cutoff permitted.
  - b. Spinner: 2 Hartzell D-163
  - c. Governor: 2 Hartzell A-1 & Hartzell "T-Drives"
3. Or, 2 Hartzell feathering propellers installed in accordance with Rockwell Drawings 640009 and 640012.
  - a. HC-82x20-2 hubs with 9333C-3 blades  
Pitch settings at 30 in. Station: Low 18°, High 28.5°, Feathered 89°  
Diameter: 90 in., 2 in. cutoff permitted.
  - b. Spinner: 2 Hartzell C-888 Dome and C-807-2 Bulkhead
  - c. Governor: 2 Hamilton Standard TQ12-G1A or  
2 Woodward 210075 or  
2 Woodward 210245 or  
2 Hartzell A-1 and Hartzell "T-Drives" (GO-435-C2 only)
4. Or, 2 Hartzell feathering propellers installed per Rockwell Drawing 640013.
  - a. HC-83x20-2 hubs with 8433 blades  
Pitch settings at 30 in. Station: Low 16°, High 26.3°, Feathered 87°  
Diameter: 84 in., No cutoff permitted
  - b. Spinner: 2 Hartzell C-888-3 dome and C-807-3 bulkhead or 2 Hartzell C-888-6 dome and C-807-7 bulkhead.
  - c. 2 Woodward 210075 or 210245

Airspeed limits	Maneuvering	142 m.p.h. (124 K) True Ind.	
	Max. structural cruising	200 m.p.h. (174 K) True Ind.	
	Never exceed	270 m.p.h. (234 K) True Ind.	
	Flaps extended 20°	150 m.p.h. (130 K) True Ind.	
	Flaps extended 40°	125 m.p.h. (109 K) True Ind.	
	Landing gear extended	180 m.p.h. (156 K) True Ind.	
C.G. range	(+168.6) to (+175.1) (Gear extended) Effect of retracting landing gear is +4110 in.-lb.		
Empty Wt. C.G. Range	None		
Datum	Located 152 in. fwd. of the wing leading edge.		
Leveling means	Longitudinal - Top of fuselage centerline, aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor.		
Maximum weight	5500 lb. (See NOTE 3 for 5700 lb. maximum weight).		
No. of seats	5 (2 at +104 and 3 at +165) See NOTE 6 for eligibility for 6 or 7 seats.		
Maximum baggage	350 lb. (+200)		
Fuel capacity	150 gal. total (5 inter-connected tanks) (+187) 145 gal. usable fuel (See NOTE 1 for unusable fuel).		
Oil capacity	6 gal. total (3 gal. each engine) (+152) 4.5 gal. usable oil (See NOTE 1 for unusable oil)		
Control surface movements	Elevator	20° ± 2 Up	15° ± 2 Down
	Elevator tab	2 1/2° ± 1 Up	26 1/2° ± 1/2 Down
	Rudder	15° ± 1 Right	15° ± 1 Left
	Rudder tab	13° ± 1/2 Right	26° ± 1/2 Left
	Aileron	23° ± 2 Up	15° ± 2 Down
	Flaps		40° ± 2 Down

Serial Nos. eligible	Under the delegation option provisions of Part 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to approve design and production changes on airplane serial numbers 520-1 to 520-150. (See NOTES 7 and 9 for serial number variations and SW-2 status.)
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### **III - Model 560, 7 PCLM (Normal Category), Approved May 28, 1954**

(Same as Model 520 except for increased weight, increased horsepower, and swept tail. Revised model incorporates structural modifications to the wing, landing gear, fuselage, vertical tail, and primary control system).

Engines	2 Lycoming GO-480-B or GO-480-B1C with Bendix carburetor PS-5BD setting 391569.												
Fuel	80/87 or 91/96 min. grade aviation gasoline												
Engine limits	Max continuous, 3000 r.p.m. (260 hp) Takeoff (5 minutes), 3400 r.p.m. (270 hp)												
Propeller and Propeller limits	<ol style="list-style-type: none"> <li>1. 2 Hartzell feathering propellers installed in accordance with Rockwell Dwgs. 640009 and 640012.               <ol style="list-style-type: none"> <li>a. HC-82x20-2 hubs with 9333C-3 blades Pitch settings at 30 in. station: Low 18°, High 28.5°, Feathered 89° Diameter: 90 in., 2 in. cutoff permitted</li> <li>b. Spinner: 2 Hartzell C-888 dome and C-807-2 Bulkhead or 2 Hartzell D-163</li> <li>c. Governor: 2 Hamilton Standard 1Q12-G1A or 2 Woodward 210075 or 210245 or 2 Hartzell A-1 and Hartzell "T-Drives"</li> </ol> </li> <li>2. Or, 2 Hartzell feathering propellers installed per Rockwell Dwg. 640013.               <ol style="list-style-type: none"> <li>a. HC-83x20-2 hubs with 8433 blades Pitch settings at 30 in. station: Low 16°, High 26.5°, feathered 87° Diameter: 84 in., No cutoff permitted.</li> <li>b. Spinner: 2 Hartzell C-888-3 dome and C-807-3 bulkhead or 2 Hartzell C-888-6 dome and C-807-7 bulkhead</li> <li>c. Governor: 2 Woodward 210075 or 210245</li> </ol> </li> </ol>												
Airspeed Limits	<table border="0"> <tr> <td>Maneuvering</td> <td>156 m.p.h. (135 K) True Ind.</td> </tr> <tr> <td>Max. structural cruising</td> <td>200 m.p.h. (174 K) True Ind.</td> </tr> <tr> <td>Never exceed</td> <td>270 m.p.h. (234 K) True Ind.</td> </tr> <tr> <td>Flaps extended - half</td> <td>150 m.p.h. (130 K) True Ind.</td> </tr> <tr> <td>Flaps extended - full</td> <td>125 m.p.h. (109 k) True Ind.</td> </tr> <tr> <td>Landing gear extended</td> <td>180 m.p.h. (156 K) True Ind.</td> </tr> </table>	Maneuvering	156 m.p.h. (135 K) True Ind.	Max. structural cruising	200 m.p.h. (174 K) True Ind.	Never exceed	270 m.p.h. (234 K) True Ind.	Flaps extended - half	150 m.p.h. (130 K) True Ind.	Flaps extended - full	125 m.p.h. (109 k) True Ind.	Landing gear extended	180 m.p.h. (156 K) True Ind.
Maneuvering	156 m.p.h. (135 K) True Ind.												
Max. structural cruising	200 m.p.h. (174 K) True Ind.												
Never exceed	270 m.p.h. (234 K) True Ind.												
Flaps extended - half	150 m.p.h. (130 K) True Ind.												
Flaps extended - full	125 m.p.h. (109 k) True Ind.												
Landing gear extended	180 m.p.h. (156 K) True Ind.												
C.G. range	(+168.6) to (+176.6) (Gear extended) Effect of retracting landing gear is +4110 in.-lb.												
Empty Wt. C.G. range	None												
Datum	Located 152 in. fwd. of the wing leading edge at center section												
Leveling means	Longitudinal - Top of fuselage centerline, aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor												
Maximum weight	6000 lbs.												
No. of seats	7 (2 at +104, 2 at +135, and 3 at +165)												
Maximum baggage	350 lb. (+200)												
Fuel capacity	150 gal. total (5 inter-connected tanks) (+187) 145 gal. usable fuel (See NOTE 1 for unusable fuel)												
Oil capacity	6 gal. total (3 gal each engine) (+152)												

4 1/2 gal. usable oil (See NOTE 1 for unusable oil)			
Control surface movements	Elevator	30° + 2°, -0 Up	10° ± 2° Down
	Elevator tab	2 1/2° ± 2° Up	20° ± 2° Down
	Rudder	15° ± 2° Right	15° ± 2° Left
	Rudder tab	26° ± 2° Right	26° ± 2° Left
	Aileron	23° ± 2° Up	15° ± 2° Down
	Flaps		40° ± 2° Down
Serial Nos. eligible	Under the delegation option provisions of Part 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to approve design and production changes on airplane serial numbers 560-151 to 560-230. (See NOTES 7 and 9 for serial number variations and SW-2 status.)		

#### **IV - Model 560-A, 7 PCLM (Normal Category), Approved July 1, 1955**

(Same as Model 560 except for engine installation, longer fuselage, structural changes to the wing, new landing gear design, revised fuel and oil systems.)

Engines	2 Lycoming GO-480-D1A or 2 Lycoming GO-480-C1B6 with Bendix carburetor PS-5BD setting 391621 (3-spring elevator bungee system must be incorporated per Dwg. 530000 Chg X) or 2 Lycoming GO-480-G1B6 with Bendix carburetor PS-5BD setting 391621 (oil cooler outlet gills must be changed per Service Letter 62. Oil Temp gage markings changed per Service Letter 63).		
Fuel	80/87 min. grade aviation gasoline 100/130 min grade (GO-480-C1B6)		
Engine Limits	Maximum continuous	3000 r.p.m. (260 hp)	
	Takeoff (5 minutes)	3400 r.p.m. (275 hp)	
Propeller and propeller limits	1. 2 Hartzell feathering propellers installed per Rockwell Drawing 640013. a. HC-83x20-2 hubs with 8433 blades Pitch settings at 30 in. station: Low 16°, High 26.5°, Feathered 87° Diameter: 84 in. No cutoff permitted. b. Spinners: 2 Hartzell C-888-3 dome and C-807-3 bulkhead or 2 Hartzell C-888-6 dome and C-807-7 bulkhead or 2 Hartzell 836-78 Assemblies c. Governors:2 Woodward 210075 or 210245 2. 2 Hartzell feathering propellers installed per Rockwell Drawing 640017 (For Lycoming GO-480-C1B6 only) a. HC-83x20-2 hubs with 8833-2 blades Pitch settings at 30 in. Station: Low 17°, Feathered 82° to 84° Diameter: 86 in., No cutoff permitted. b. Spinners: 2 Hartzell C-888-3 dome and C-807-3 bulkhead or 2 Hartzell C-888-6 dome and C-807-7 bulkhead or 2 Hartzell 836-78 Assemblies c. Governors:2 Woodward 210075 or 210245		
Airspeed Limits	Maneuvering	160 m.p.h. (139 K) True Ind.	
	Max. structural cruising	210 m.p.h. (182 K) True Ind.	
	Never exceed	270 m.p.h. (234 K) True Ind.	
	Flaps extended - half	150 m.p.h. (130 K) True Ind.	
	Flaps extended - full	130 m.p.h. (113 K) True Ind.	
	Loading gear extended	180 m.p.h. (156 K) True Ind.	
C.G. range (gear extended)	(+166.4) to (+176.5) Effect of retracting landing gear is: inclined gear 6210 in. -lb., vertical gear 5745 in. -lb. C.G. limit restriction with Lear L-2C automatic pilot installed is (+166.4) to (+175.8).		
Empty Wt. C.G. range	None		

Datum	Located 152 in. fwd. of the wing leading edge at center section.		
Leveling means	Longitudinal - Top of fuselage centerline, aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor		
Maximum weight	6000 lbs.		
No. of seats	7 (2 at +94, 2 at +128, and 3 at +168)		
Maximum baggage	350 lb. (+200)		
Fuel capacity	158.5 gal. total (5 inter-connected tanks) (+187) 156 gal. usable fuel (See NOTE 1 for unusable fuel) Auxiliary fuel tanks 2@33.5 gal (Requires extra oil. See NOTE 4 for requirements)		
Oil capacity	8.5 gal. total (4.25 gal. each tank) (+191) 6.5 gal. required usable oil (See NOTE 1 for unusable oil and NOTE 4 for usable oil requirements with auxiliary fuel tanks installed).		
Control surface movements	Elevator	30° + 1° Up -0°	10° ± 2° Down
	Elevator tab	2 1/2° + 2° Up -1/2°	20° ± 2° Down
	Rudder	15° + 2° Right -0°	15° + 2° Left (Serial Nos.231-330) -0°
	Rudder	20° + 2° Right -0°	20° + 2° Left (Serial Nos. 331 & Subs) -0°
	Rudder tab	26° ± 2° Right	26° ± 2° Left
	Aileron	23° ± 2° Up	15° ± 2° Down
	Flaps		40° ± 2° Down
Serial Nos. eligible	Under the delegation option provisions of Part 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to approve design and production changes on airplane serial numbers 560-A-437 to 560-A-884. (See NOTES 7 and 9 for serial number variations and SW-2 status.)		

#### **V. Model 560-E, 7 PCLM (Normal Category), Approved February 21, 1957**

(Same as Model 560A except for engine installation, structural changes to the wing, wheel and brake installation, revised fuel system, and new landing gear location.)

Engine	2 Lycoming GO-480-C1B6 or GO-480-G1B6, Bendix carburetor PS-5BD, Parts Listing No. 391621.		
Fuel	100/130 min. grade aviation gasoline		
Engine limits	Maximum continuous, 3000 r.p.m. (280 hp) Takeoff (5 minutes), 3400 r.p.m. (295 hp)		
Propeller and propeller limits	2 Hartzell feathering propeller installed per Rockwell Dwg. 640017 a. HC-83x20-2 hubs with 8833-2 blades Pitch settings at 30 in. station: Low 17°, Feathered 82° to 84° Diameter: 86 in., No cutoff permitted b. Spinner: 2 Hartzell C-888-3 dome and C-807-3 bulkhead or 2 Hartzell C-888-6 dome and C-807-7 bulkhead or 2 Hartzell 836-78 assemblies c. Governors:2 Woodward 210075 or 210245		
Airspeed limits	Maneuvering	160 m.p.h. (139 K) True Ind.	
	Max. structural cruising	210 m.p.h. (182 K) True Ind.	

	Never exceed	270 m.p.h. (234 K) True Ind.
	Flaps extended - half	150 m.p.h. (130 K) True Ind.
	Flaps extended - full	130 m.p.h. (113 K) True Ind.
	Landing gear extended	180 m.p.h. (156 K) True Ind.
C.G. range (gear extended)	(+166.0) to (+175.1) Effect of retracting landing gear is +6655 in. -lb.	
Empty Wt. C.G. range	None	
Datum	Located 152 in. fwd. of wing leading edge at center section.	
Leveling means	Longitudinal - Top of fuselage centerline aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor.	
Maximum weight	6500 lb.	
No. of seats	7 (2 at +94, 2 at +128, and 3 at +168)	
Maximum baggage	350 lb (+200)	
Fuel capacity	Center tank 158.5 gal. (+187), usable fuel 156 gal. Outboard tanks, 33.5 gal. each (+178), usable fuel 33.5 gal. each. Total capacity 225.5 gal., usable fuel 223 gal. (See NOTE 1 for system fuel.)	
Oil capacity	8.5 gal. total (4.25 gal. each tank) (+191) 8.5 gal. usable (See NOTE 1 for system oil)	
Control surface movements	Elevator	30° + 1° Up -0°
		10° + 2° Down -0°
	Elevator tab	2 1/2° + 2° Up -1/2°
		20° + 2° Down -0°
	Rudder	20° + 2° Right -0°
		20° + 2° Left -0°
	Rudder tab	26° + 2° Right -0°
		26° + 2° Left -0°
	Aileron	23° ± 2° Up
	Flaps	15° ± 2° Down 40° ± 2° Down
Serial Nos. eligible	Under the delegation option provisions of Pat 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to approve design and production changes on airplane serial numbers 560-E-434 to 560-E-884. (See NOTES 7 and 9 for serial number variations and SW-2 status.)	

#### **VI - Model 500, 7 PCLM (Normal Category), Approved July 24, 1958**

(Same as 560E except for decreased gross weight, powerplants, and 560A landing gear.)

Engines	2 Lycoming O-540-A2B, Carburetor MA 4-5, Parts Listing No. 10-4057.
Fuel	91/96 min. grade aviation gasoline
Engine limits	For all operations, 2575 r.p.m. (250 hp)
Propeller and propeller limits	2 Hartzell two-bladed feathering propellers <ol style="list-style-type: none"> <li>HC-82XX-2C1 hubs with 8433-4 blades HC-A2XX-2C1 hubs with V8433-4 blades HC-A2VK-2C1 hubs with V8433-4 blades Pitch setting at 30 in. station: Low 14°, Feathered 82° to 84° Diameter: 80 in., no cutoff permitted <u>Note:</u> Any combination of the three approved propellers may be used; however, for best synchronization and matched response times, the</li> </ol>

	propellers should be used in pairs of like model numbers.		
	b. Spinners:	2 Hartzell 835-6 assemblies	
	c. Governors:	2 Ham-Std. 1M12-60A or 2 Woodward 210400	
Airspeed limits	Maneuvering	160 m.p.h. (139 K) True Ind.	
	Max. structural cruising	210 m.p.h. (182 K) True Ind.	
	Never exceed	270 m.p.h. (234 K) True Ind.	
	Flaps extended - half	150 m.p.h. (130 K) True Ind.	
	Flaps extended - full	130 m.p.h. (113 K) True Ind.	
	Landing gear extended	180 m.p.h. (156 K) True Ind.	
C.G. range	(+166.0) to (+175.1) (Gear extended) Effect of retracting landing gear +6210 in. -lb.		
Empty Wt. C.G. range	None		
Datum	Located 152 in. fwd. of wing leading edge at center section.		
Leveling means	Longitudinal - Top of fuselage centerline aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor.		
Maximum weight	6000 lb.		
No. of seats	7 (2 at +94, 2 at +128, 3 at +168)		
Maximum baggage	350 lb. (+200)		
Fuel capacity	158.5 gal. total (5 inter-connected tanks) (+187) 156 gal. usable fuel		
Oil capacity	6 gal. total (3 gal. each engine) 9.25 qt. usable per engine		
Control surface movements	Elevator	30° +1 Up -0	10° +2 Down -0
	Elevator tab	2 1/2° +2 Up -1/2	20° +2 Down -0
	Rudder	20° +2 Right -0	20° +2 Left -0
	Rudder tab	26° +2 Right -0	26° +2 Left -0
	Aileron	23° ± 2 Up	15° ± 2 Down
	Flaps		40° ± 2 Down
Serial Nos. eligible	Under the delegation option provisions of Part 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to approve design and production changes on airplane serial numbers 500-618 to 500-852. (See NOTES 7 and 9 for serial number variations and SW-2 status.)		

#### **VII - Model 500-A, 7 PCLM (Normal Category), Approved April 7, 1960**

(Same as 500 except for fuel injection engine and new landing gear.)

Engines	2 Continental IO-470-M
Fuel	100/130 min. grade aviation gasoline
Engine limits	For all operations, 2625 r.p.m. (260 hp)
Propeller and	2 Hartzell two-bladed feathering propeller

propeller limits	<p>a. HC-A2XF-2 hubs with 8433-4 blades, HC-A2VF - 2 hubs with V8433 - 4 blades Pitch setting at 30 in. Station: Low 12.5°, Feathered 81.0°. Diameter: 80 in., 2 in. cutoff permitted. NOTE: Letters appearing after the dash numbers of the above listed hub do not affect eligibility; however, for the best synchronization, hubs with different numbers should not be combined on the same airplane.</p> <p>b. Spinners: 2 Hartzell C-2530 assemblies or 2 Hartzell C-2509-1 assemblies</p> <p>c. Governors: 2 Woodward 210310 or 210410 (Per Rockwell Dwg. 640030 when Rockwell propeller unfeathering system is installed) NOTE: Governor part numbers may differ from governor type numbers. For best synchronization, governors with different part numbers should not be combined on the same airplane.</p>		
Airspeed limits	Maneuvering	145 m.p.h. (126 K) True Ind.	
	Max. structural cruising	230 m.p.h. (200 K) True Ind.	
	Never exceed	288 m.p.h. (250 K) True Ind.	
	Flaps extended - half	150 m.p.h. (130 K) True Ind.	
	Flaps extended - full	136 m.p.h. (118 K) True Ind.	
	Landing gear extended	180 m.p.h. (156 K) True Ind.	
C.G. range	<p>(+166.0) to (+174.4) (Gear extended) Effect of retracted landing gear +10.073 in.-lb.</p>		
Empty Wt. C.G. range	None		
Datum	Located 152 in. fwd. of wing leading edge at center section.		
Leveling means	<p>Longitudinal - top of fuselage centerline aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor</p>		
Maximum weight	6000 lb. (See NOTE 3 for 6250 lb. maximum weight)		
No. of seats	7 (2 at +94, 2 at +128, 3 at +168)		
Maximum baggage	350 lb (+200)		
Fuel capacity	159.5 gal. total (5 interconnected tanks) (+187) (156 gal. usable fuel)		
Oil capacity	<p>6 gal. total (12 qt. each engine) (+146) Usable oil - 8 qt. (each engine)</p>		
Control surface movements	Elevator	30° +1 Up -0	10° + 2 Down -0
	Elevator tab	2 1/2° + 2 Up -1/2	20° + 2 Down (500-A-871 thru -0 500-A-970) 26° + 2 Down (500-A-971 and -0 up)
	Rudder	20° + 2 Right -0	20° +2 Left -0
	Rudder tab	26° + 2 Right -0	26° + 2 Left -0
	Aileron	23° ± 2 Up	15° ± 2 Down
	Flaps		40° ± 2 Down
Serial Nos. eligible	<p>Under the delegation option provisions of Part 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to approve design and production changes on airplane serial numbers 500-A-875 to 500-A-1276-99. (See NOTES 7 and 9 for serial number variations and SW-2 status.)</p>		



**VIII - Model 500-B, 7 PCLM (Normal Category), Approved July 13, 1960**

Engines	2 Lycoming IO-540-B1A5, or 2 Lycoming IO-540-B1C5 or 2 Lycoming IO-540-E1A5 or 2 Lycoming IO-540-E1B5. (See NOTE 8 for engine requirements.) Aero Commander vapor separator is required with IO-540-B1C5 and IO-540-E1A5 and IO-540-E1B5. Fuel injector is Bendix RS10B1, Parts Listing No. 391787-1.		
Fuel	100/130 min. grade aviation gasoline		
Engine limits	Maximum continuous, 2575 r.p.m. (290 hp) Takeoff. 2575 r.p.m. (290 hp)		
Propeller and Propeller Limits	2 Hartzell three-bladed feather propellers a. HC-A3XK-2 Hubs with 8433-4 blades or HC-A3XK-2A Hubs with 8433-4 blades or HC-A3VK-2 Hubs with V8433-4 blades or HC-A3VK-2A Hubs with V8433-4 blades or HC-C3YR-2 Hubs with C8468-6R blades or HC-C3YR-2F Hubs with FC8468-6R blades or HC-C3YR-2U Hubs with C8468-6R blades or HC-C3YR-2UF Hubs with FC8468-6R blades Pitch settings at 30 In. Station: Low 12.5° to 13.0° feathered 85.5° (Aircraft S/N 893 thru 1014 may have feathered angle of 82.5° unless Service Letter 101 has been complied with). Diameter: 80 in. No cutoff permitted NOTE: Hubs with different part numbers should not be combined on the same airplane. b. Spinners: 2 Hartzell C-2513 Assemblies (for HC-A3XK and HC-A3VK series hubs 2 Hartzell C-3258 Assemblies (for HC-C3YR series hubs) c. Governors: 2 Woodward 210400 or 210401 (Per Rockwell Dwg. 640030 when Rockwell propeller unfeathering system is installed.) NOTE: Governor part numbers may differ from governor type numbers. For best synchronization, governors with different part numbers should not be combined on the same airplane.		
Airspeed limits	Maneuvering	155 m.p.h. (135 K) True Ind.	
	Max. structural cruising	230 m.p.h. (200 K) True Ind.	
	Never exceed	288 m.p.h. (250 K) True Ind.	
	Flaps extended - half	150 m.p.h. (130 K) True Ind.	
	Flaps extended - full	136 m.p.h. (118 K) True Ind.	
	Landing gear extended	180 m.p.h. (156 K) True Ind.	
C.G. range	(+166.0) to (+174.4) (Gear extended) Effects of retracted landing gear 10,073 in.-lb. A/C S/N 893 thru 1631 <u>without</u> Service Bulletin No. 128 or No. 129 installed.		
	Forward -	166.0 inches aft of datum (20% MAC)	
	Aft -	174.40 inch aft of datum (32% MAC)	
	Forward -	161.8 inches aft of datum (14% MAC) at 5600 lbs. -166.0 inches aft of datum (20% MAC) at 6750 lbs.	
	Straight line variation between points		
	Aft -	173.0 inches aft of datum (30% MAC) at 6750 lbs.	
	C.G. variation of lighter weights: Inches aft of datum = 174.5 - 10,073/Wt.		

Empty Wt. C.G. range	None		
Datum	Located 152 in. fwd. off wing leading edge at center section.		
Leveling means	Longitudinal - top of fuselage centerline aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor.		
Maximum weight	6750 lb.		
No. of seats	7 (2 at +94, 2 at +128, 3 at +168) See NOTE 5 for eligibility for 8 seats.		
Maximum baggage	350 lb. (+200)		
Fuel capacity	159.6 gal. total (5 interconnected tanks) (+187) 156 gal. usable fuel		
Oil capacity	6 gal. total (12 qt. each engine) (+146)		
Control surface movements	Elevator	30° +1 Up. -0	10° + 2 Down -0
	Elevator tab	2 1/2° + 2 Up 26° +2 Down -1/2	-0
	Rudder	20° + 2 Right -0	20° + 2 Left -0
	Rudder tab	26° + 2 Right -0	26° + 2 Left -0
	Aileron	23° ± 2 Up	15° ± 2 Down
	Flaps		40° ± 2 Down
Serial Nos. eligible	Under the delegation option provisions of Part 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to: Issue Airworthiness Certificates for airplane serial numbers 500-B-1551-197 to 500-B-1631; and approve design and production changes on airplane serial numbers 500-B-893-1 to 500-B-1631. (See NOTES 7 and 9 for serial number variations and SW-2 status.)		

**IX - Model 500-U, 7 PCLM (Normal and Utility Category), Approved December 11, 1964**

Engines	2 Lycoming IO-540-E1A5 or 2 Lycoming IO-540-E1B5. Rockwell Commander 4630193 vapor separator is required. Fuel injector is Bendix RS10B1, Parts Listing No. 391787-1.		
Fuel	100/130 min. grade aviation gasoline		
Engine limits	Maximum continuous, 2575 r.p.m. (290 hp) Takeoff, 2575 r.p.m. (290 hp)		
Propeller and propeller limits	2 Hartzell three-bladed feather propellers		
	a. HC-A3XK-2 Hubs with 8433-4 blades or HC-A3XK-2A Hubs with 8433-4 blades or HC-A3VK-2 Hubs with V8433-4 blades or HC-A3VK-2A Hubs with V8433-4 blades or HC-C3YR-2 Hubs with C8468-6R blades or HC-3YR-2F Hubs with FC8468-6R blades or HC-C3YR-2U Hubs with C8468-6R blades or HC-C3YR-2UF Hubs with FC8468-6R blades or Pitch setting at 30 in. Station: Low 12.5° to 13.0°, feathered 85.5° Diameter: 80 inch., No cutoff permitted. NOTE: Hubs with different part numbers should not be combined on the same airplane. b. Spinners: 2 Hartzell C-2513 Assemblies (for HC-A-3XK and HC-A3VK series hubs).		

	c.	Governors:	2 Hartzell C-3258 Assemblies (for HC-C3YR series hubs). 2 Woodward 210400 or 210401 (per Rockwell Dwg. 640030 when Rockwell propeller unfeathering system is installed.)	
		NOTE:	Governor part numbers may differ from governor type numbers. For best synchronization, governors with different part numbers should not be combined on the same airplane.	
Airspeed limits		Maneuvering	163 m.p.h. (142 K) True Ind.	
		Max. structural cruising	230 m.p.h. (200 K) True Ind.	
		Never exceed	288 m.p.h. (250 K) True Ind.	
		Flaps extended - half	150 m.p.h. (130 K) True Ind.	
		Flaps extended - full	136 m.p.h. (118 K) True Ind.	
		Landing gear extended	180 m.p.h. (156 K) True Ind.	
C.G. range		(+166.0) to (+174.4) (Gear extended)		
		Effects of retracted landing gear 10,073 in.-lb.		
		A/C Serial No. 1635 thru 1780 Forward -	166.0 inches aft of datum	
		<u>without</u> Service Bulletin No. 128 or	(20% MAC)	
		No. 129 installed.	Aft -	174.40 inches aft of datum
				(32% MAC)
		Aircraft Serial No. 1635 thru 1780	Forward -	161.8 inches aft of datum
		<u>with</u> Service Bulletin No. 128 or		(14% MAC) at 5600 lbs.
		No. 129 installed		-166.0 inches aft of datum
				(20% MAC) at 6750 lbs.
			Straight line variation between points.	
			Aft - 173.0 inches aft of datum (30% MAC)	
			at 6750 lbs.	
			C.G. variation at lighter weights:	
			Inches aft of datum = 174.5 - 10,073/Wt.	
Empty Wt. C.G.range		None		
Datum		Located 152 in. fwd. of wing leading edge at center section.		
Leveling means		Longitudinal - Top of fuselage centerline aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor.		
Maximum weight		6750 lbs.		
No. of seats		7 (2 at +94, 2 at +128, 3 at +168) (See NOTE 5 for eligibility for 8 seats).		
Maximum baggage		350 lb. (+200)		
Fuel capacity		159.6 gal. total (5 interconnected tanks) (+187) 156 gal. total (12 qt. each engine) (+146)		
Control surface movements		Elevator	30° + 1 Up - 0	10° + 2 Down - 0
		Elevator tab	2 1/2° + 2 Up - 1/2	26° + 2 Down - 0
		Rudder	20° + 2 Right - 0	20° + 2 Left - 0
		Rudder tab	26° + 2 Right -0	26° + 2 Left -0
		Aileron	23° ± 2 Up	15° ± 2 Down
		Flaps		40° ± 2 Down
Serial Nos. eligible		Under the delegation option provisions of Part 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to: Issue Airworthiness Certificates and approve design and production changes on airplane serial numbers 500-U-1635 thru 1780. (See NOTES 7 and 9 for serial number variations and SW-2 status.)		

Engines	2 Lycoming IO-540-E1A5 or 2 Lycoming IO-540-E1B5. Rockwell Commander 4630193 vapor separator is required. Fuel injector is Bendix RS10B1, Parts Listing No. 391787-1.	
Fuel	100/130 min. grade aviation gasoline	
Engine limits	Maximum continuous, 2575 r.p.m. (290 hp) Takeoff, 2575 r.p.m. (290 hp)	
Propeller and propeller limits	<ol style="list-style-type: none"> <li>1. 2 Hartzell three-bladed feathering propellers <ol style="list-style-type: none"> <li>a. HC-A3XK-2 hubs with 8433-4 blades or HC-A3VK-2 hubs with V8433-4 blades Pitch setting at 30 in. Station: Low 12.5° to 13.0°, Feathered 85.5° Diameter: 80 in., no cutoff permitted NOTE: Letters appearing after the dash numbers of the above listed hub do not affect eligibility; however, for the best synchronization, hubs with different numbers should not be combined on the same airplane.</li> <li>b. Spinners: 2 Hartzell C-2513 assemblies</li> <li>c. Governors: 2 Woodward 210400 or 210401 (Per Rockwell Dwg. 640030 when Rockwell propeller unfeathering system is installed). NOTE: Governor part numbers may differ from governor type numbers. For best synchronization, governors with different part numbers should not be combined on the same airplane.</li> </ol> </li> <li>2. 2 Hartzell three-bladed feathering propellers <ol style="list-style-type: none"> <li>a. HC-3YR-2 hubs with C8468-6R blades or HC-C3YR-2UF hubs with FC8468-6R blades. Pitch settings at 30 in. Station: Low 12.5° to 13.0°, Feather 85.5°. Diameter: 80 in. no cutoff permitted NOTE: Letters appearing after dash numbers of the above listed hubs do not affect eligibility; however, for best synchronization, hubs with different numbers should not be combined on same airplane.</li> <li>b. Spinner: 2 Hartzell C-3258 assemblies</li> <li>c. Governors: 2 Woodward 210400 or 210401 (Per Rockwell Dwg. 640030 when Rockwell propeller unfeathering system is installed). NOTE: Governor part numbers may differ from governor type numbers. For best synchronization, governors with different part numbers should not be combined on the same airplane.</li> </ol> </li> </ol> <p>(With Prop Sync. System): One each Woodward 210585 and 210586 (per Rockwell Dwg. 890314 without prop unfeathering system) or one each Woodward 210584 and 210587 (per Rockwell Dwg. 890314 with prop unfeathering per Rockwell Dwg. 640030.)</p>	
Airspeed limits	Maneuvering Max. Structural Cruising Never exceed Flaps extended - half Flaps extended - full Landing gear extended	163 m.p.h. (142 K) True Ind. 230 m.p.h. (200 K) True Ind. 288 m.p.h. (250 K) True Ind. 150 m.p.h. (130 K) True Ind. 136 m.p.h. (118 K) True Ind. 180 m.p.h. (156 K) True Ind.
C.G. range	(+166.0) to (+174.0) (Gear extended) Effects of retracted landing gear 10,073 in.-lb. A/C S/N 1755 thru 3155 Forward - 166.0 in. Aft of Datum Without SB 128 or 129 (20% MAC) installed. Gear Extended Aft - 174.4 in. Aft of Datum (32% MAC) A/C S/N 1755 thru 3155 Forward 161.8 in. Aft of Datum(14% MAC) at 5600 lb	

	With SB 128 or 129 installed and 3156 and Subs.		166.0 in. Aft of Datum (20% MAX) at 6750 lbs Straight Line Variation Between Points
	Gear Extended	Aft -	173.0 in. Aft of Datum (30% MAC) at 6750 lbs C.G. Variation at Lighter Weights: In Aft of Datum = 174.5-10,073/Wt
Empty Wt. C.G. range	None		
Datum	Located 152 in. fwd. of wing leading edge at center section.		
Leveling means	Longitudinal - top of fuselage centerline aft of wing trailing edge. Lateral - Transverse beams at front or rear of baggage compartment floor.		
Maximum weight	6750 lb.		
No. of seats	7 (2 at 94, 2 at +128, 3 at +168) See NOTE 5 for eligibility for 8 seats		
Maximum baggage	500 lb (+214)		
Fuel capacity	159.6 gal. total (5 interconnected tanks) (+187) 156 gal. usable fuel		
Oil capacity	6 gal. total (12 qt. each engine) (+146)		
Control surface movements	Elevator	30° + 1 Up - 0	10° + 2 Down - 0
	Elevator tab	2 1/2° + 2 Up - 1/2	26° + 2 Down - 0
	Rudder	20° + 2 Right - 0	20° + 2 Left - 0
	Rudder tab	26° + 2 Right - 0	26° + 2 Left - 0
	Aileron	23° ± 2 Up	15° ± 2 Down
	Flaps		40° ± 2 Down
Serial Nos. eligible	Under the delegation option provisions of Part 21 of the Federal Aviation Regulations, Delegation Option Manufacturer No. SW-2 is authorized to: Issue Airworthiness Certificates and approve design and production change on airplane serial numbers 500-S-1755, 1756, 1767, 1781 thru 1876 and 3050 through 3323. (See NOTES 7 and 9 for serial number variations and SW-2 status.)		

### **Specifications Pertinent to All Models**

Certification Basis	Type Certificate No. 6A1 Application for Type Certificate November 5, 1945.
	Civil Air Regulations (CAR) Part 3, Normal Category:
Model 520:	CAR 3 effective November 1, 1949, through Amendment 3-6 dated June 4, 1951.
Model 560:	CAR 3 effective November 1, 1949, through Amendment 3-11 dated May 17, 1954, except paragraph 3.668 of Amendment 3-7, dated March 5, 1952.
Model 560-A:	CAR 3 effective November 1949, through Amendment 3-12 dated May 18, 1954, except paragraph 3.668 of Amendment 3-7 dated March 5, 1952.
Model 560-E:	CAR 3 effective November 1, 1949, through Amendment 3-12 dated May 18, 1954, and CAR 3.431 as amended May 15, 1956.
Model 500:	CAR 3 effective November 1, 1949, through Amendment 3-12 dated May 18, 1954, and CAR 3.431 as amended May 15, 1956.
Model 500-A:	CAR 3 effective May 15, 1956, including Amendments 3-3 and 3-4 effective October 6, 1958.

Model 500-B CAR 3 effective May 15, 1956, including Amendments 3-3 and 3-4 effective October 6, 1958.

CAR 3, Normal and Utility Category:

Model 500-S: CAR 3 effective May 15, 1956, including Amendments 3-3 and 3-4 effective October 6, 1958.

Model 500-U: CAR 3 effective May 15, 1956, including Amendments 3-3 and 3-4 effective October 6, 1958.

#### Production Basis

Production Certificate No. 203.

#### Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in this aircraft for certification. This equipment must include a current airplane flight manual.

In addition, the following item(s) are required:

Stall warning system 167 detector Safe Flight Mod. "S" indicator per Rockwell Drawings 850016 and 850017.

#### NOTE 1:

Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions, must be provided for each aircraft at the time of original airworthiness certification and at all times thereafter.

The certificated empty weight and corresponding center of gravity location must include unusable fuel (included in total fuel capacity) and undrainable oil (including in total oil capacity) as follows:

<u>Model</u>	<u>520</u>	<u>560</u>	<u>560-A</u>	<u>560-E</u>	<u>500</u>
Fuel	30 lb.(+186)	30 lb.(+186)	15 lb.(+187)	15 lb.(+187)	15 lb. (+187)
Oil	10 lb.(+152)	10 lb.(+152)	15 lb.(+191)	15 lb.(+191)	0 lb.

<u>Model</u>	<u>500-A</u>	<u>500-B</u>	<u>500-U</u>	<u>500-S</u>
	5630127	5630127	5630127	5630127
	Fuel Sump	Fuel Sump	Fuel Sump	Fuel Sump
Fuel	22 lb.(+187)	22 lb.(+187)	22 lb.(+187)	22 lb. (+187).
Oil	0 lb.	0 lb.	0 lb.	0 lb.
	5630184	5630184	5630184	5630184
	Fuel Sump	Fuel Sump	Fuel Sump	Fuel Sump
	17.5 lb.(+187)	17.5 lb.(+187)	17.5 lb.(+187)	17.5 lb.(+187)
	0 lb.	0 lb.	0 lb.	0 lb.

#### NOTE 2:

On Models 520, 560, 560-A, 560-E, 500, 500-A, 500-B, 500-U and 500-S, the placards specified in the Airplane Flight Manual must be displayed in front of and in clear view of the pilot.

#### NOTE 3:

- Airplane serial numbers 520-31 through 520-150 eligible for a maximum weight of 5700 lb. when modified in accordance with Aero Commander Drawing SC26-520. The C.G. range then becomes: (+169.15) to (+176.5).
- Airplane serial numbers 500A-875-2 and up eligible for a maximum weight of 6250 lb. when modified in accordance with Aero Commander Service Change No. 50, dated 12 August 1960. The C.G. range then becomes (+168.1) to (+174.4).

#### NOTE 4:

Model 680 outboard fuel tank are eligible on Model 560-A with no increase in unusable fuel. However, when outboard tanks installed, 4.25 gal. of oil must be carried in each oil tank rather than 3.25 gal. as required for center fuel tank only. Oil dip sticks are calibrated for both 3.25 and 4.25 gal.

#### NOTE 5:

The Models 500-B, 500-U, and 500-S are eligible as eight-place aircraft when modified in accordance with Aero Commander Drawing 6100023. No weight and balance or gross weight change is required for this modification.

- NOTE 6: Emergency exit in accordance with Rockwell Installation Drawing 5870041. Only airplanes with structural provision for center seats re. Rockwell Dwg. 5870027 eligible as 6 or 7 place.
- NOTE 7: In some cases the serial number contains the basic number plus a dash followed by a second set of numbers. This second number is a model unit number and the basic serial number applies with or without the second number. Example as follows: Aircraft: 500B-1551-197 can be referred to as S/N 1551-197 or by S/N 1551.
- NOTE 8: Any combination of these engines is eligible to be installed on Model 500B aircraft. See Aero Commander Service Change No. 77 for proper engine accessories.
- NOTE 9: Delegation Option Authorization No. SW-2 expired July 17, 1986.

...END...