DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

4A15
Revision 7
MITCHELL

(L-13) Centaur 101
Centaur 102

June 23, 2009

TYPE CERTIFICATE DATA SHEET NO. 4A15

Type Certificate Holder	Mitchell Trimotor Aircraft Corporation c/o Unipunch Products, Inc. 527 3rd Avenue PO Box 17 Clear Lake, Wisconsin 54005
Type Certificate Holder Record	Consolidated Vultee Aircraft Corporation transferred type certificate (TC) to Leasair Incorporated February 6, 1962 Leasair Incorporated transferred TC to Paul C. Mitchell, Jr. November 5, 1962 Paul C. Mitchell, Jr. transferred TC to Mitchell Trimotor Aircraft Corporation July 12, 1965

I. - Model Centaur 101 (Longren L-13), 4 PLCM (Normal Category), Approved May 16, 1956

Engine	Lycoming R-680-E3 Series		
Fuel	87 min. grade aviation gasoline		
Engine Limits	Takeoff (Two minutes), 2300 rpm (300 hp) All other operations, 2200 rpm (285 hp)		
Airspeed Limits	Maneuvering 114 mph (99 Knots) Design Cruising 118 mph (102 Knots) Never Exceed 150 mph (130 Knots) Flap Speed 89 mph (77 Knots)		
C. G. Range	(+106.8) to (+117.0)		
Empty Weight C.G. Range	None		
Maximum Weight	3550 lb.		
Number of Seats	4. Two at (+107) and two at (+151)		
Maximum Baggage	159 lb. (+192)		
Fuel Capacity	112.5 gallon total and usable. Two wing tanks, 52.5 gallons each (+121), one header tank in fuselage, 7.5 gallons (+118). 60.0 gallons total and usable for airplanes with a single 52.5 gallon wing tank and the 7.5 gallon header tank.		
Oil Capacity	5 gallons (+52)		
Control Surface Movements	Flaps		35° Down
	Elevator	32° Up	20° Down
	Elevator Tab	20° Up	14° Down
	Aileron	30° Up	30° Down
	Aileron Tab Left Side	21° Up	21° Down
	Rudder	11" Right	11" Left
	Rudder Tab	1.5" Right	1.5" Left

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Serial Numbers Eligible	Consolidated Vultee Aircraft Corp. Serial numbering retained. All C.V.A.C. military models L-13 series aircraft when modified in accordance with Centaur Aircraft Company approved data.
Required Equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: Items 1(a), 1(b), 102, 103, 201(a), 205, 301, 302, 303 and 304.

II. - Model Centaur 102, 6 PLCM (Normal Category), Approved September 29, 1961.

Same as Model 101 except for engine installation and interior arrangement.

Engine	Jacobs R-755-A2		
Fuel	80 min. grade aviation gasoline		
Engine Limits	All operations	2200 rpm	(300 hp.)
Airspeed Limits (True Ind.)	Maneuvering	114 mph	(99 Knots)
	Design Cruising	118 mph	(102 Knots)
	Never Exceed	150 mph	(130 Knots)
	Flap Speed	89 mph	(77 Knots)
C.G. Range	(+106.8) to (+117.0)		
Empty Weight C.G. Range	None.		
Maximum Weight	3550 lbs.		
Number of Seats	6. Two at (+101) and two at (+133) and two at (+163)		
Maximum Baggage	159 lb. (+188.5)		
Fuel Capacity	60 U.S. gallons total and usable. One wing tank, 52.5 gallons (+121), and one header tank in fuselage 7.5 gallons (+118).		
Oil Capacity	6.5 gallons (+101.8)		

Control Surface Movements		
Flaps		35° Down
Elevator	32° Up	20° Down
Elevator Tab	20° Up	14° Down
Aileron	30° Up	30° Down
Aileron Tab Left Side	21° Up	21° Down
Rudder	11" Right	11" Left
Rudder Tab	1.5" Right	1.5" Left

Serial Numbers Eligible	Consolidated Vultee Aircraft Corp. Serial numbering retained. All C.V.A.C. military models L-13 series aircraft when modified in accordance with Centaur Aircraft Company approved data.
Required Equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: Items 1(c), 1(d), 103, 104, 105, 201(a), 205, 304, 306 , 307 and 308.

SPECIFICATIONS PERTINENT TO ALL MODELS

Datum	86.5 in. forward of win leading edge. (Fuselage Station 0)
Leveling Means	Use plane of cabin floor.
Certification Basis	Type Certificate No. 4A15 (CAR 3), 1949, Amendments 1 through 14.

Production Basis — None. Prior to original certification of aircraft converted in the United States, a FAA representative must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data and a check of the flight characteristics.

Equipment — A plus (+) or minus (-) sign preceding the weight of an item indicates net weight change when that item is installed.

Propellers and Propeller Accessories

1. Propeller

(a) Ham. Std. hub 2B20 with 6135A-6 to 6135A-10 blades — 105 lb. (+18)
Diameter Limits: Max. 8'2".
No further reduction permitted.
Pitch Setting at 42" station:
with 6135A-6, -7 and -8 blades 19° High, 6½° Low
with 6135A-9 and -10 blades 19° High, 8° Low

and (b) Ham. Std. constant speed governor, 1M12 — 4 lb. (+24)

(c) Ham. Std. hub 2B20 with 6135-15. -16 blades.
Diameter Limits: Max. 93", Min. allowable for repairs 91-1/8".
No further reduction permitted.
Pitch Setting at 42" station: 10.3° to 12° low, 25.3° to 27° high.

and (d) Propeller governor, Hamilton Model 1A4G5.

Engine and Engine Accessories - Fuel and Oil System

101. Starter electrical, Eclipse Type E80 — 20 lb. (+53)

102. Fuel pump engine driven, Thompson Type AM-4100 — 2.5 lb. (+45)

103. Fuel pump wobble, hand D2, Model TDF-400-1 — 3 lb. (+66)

104. Vacuum pump, Pesco Type B-2A — 4 lb. (+55)

105. Fuel pump, Pesco Model No. 2P-R400 Romec RD-4140

Landing Gear

201. 2 Main wheel-brake assemblies, 27 in. Type I (SC)
(a) Hays Model G31A, 6 or 8-ply tires — 127 lb. (+86)

205. 1 Tail wheel, 10 in. 6-ply smooth contour — 6 lb. (+356)

Electrical Equipment

301. Generator, Bendix Type N-75-2SB — 24 lb. (+51)

302. Regulator, Bendix Model 17 style "A" — 2 lb. (+72)

303. Reverse current relay, AN3025-1 — 1 lb. (+65)

304. Battery 24 volt, 12AC7D — 34 lb. (+195)

305. Landing Lights, GE4523 — 1 lb. (+95)

306. Generator, Leece Neville L3 24V 35 AMP

307. Reverse current relay, AN3025-1

308. Voltage regulator, Eclipse 1042-7A or AN3206

NOTE 1. Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be in each aircraft at the time or original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system).

NOTE 2. The following placards must be displayed:

A. For Model 101:

(a) On instrument panel in full view of the pilot:
(1) "This airplane must be operated as a normal category airplane in compliance with FAA approved operating limitations in the form of instruction markings and placards. No acrobatic maneuvers including spins approved."

(b) Below airspeed indicator:
(1) "Maneuvering speed 114 mph."

(c) In baggage compartment:
(1) "Maximum baggage allowable 159 lb."

(d) On left door panel or readily visible:

"Maximum Weight and C.G. Range"

Maximum weight	3550 lb.
Most Fwd., C.G.	+106.8" from datum
Most Aft, C.G.	+117.0" from datum

Datum is 86.5" fwd of wing leading edge.

Airspeed Limits

Vne	Maximum glide or dive	150 mph.	TIAS
Vc	Maximum design cruising speed	118 mph.	
Vp	Maneuvering Speed	114 mph.	
Vf	Maximum flap down speed	89 mph.	

Maneuvering Load Factors

Do not exceed 3.8 load factor	flaps up
Do not exceed 1.9 load factor	flaps down

Instrument Marking

Red Radial	--	Maximum or minimum allowable
Yellow Arc	--	Cautionary range
Green Arc	--	Normal operating range
White Arc	--	Flap operating range

Engine and Propeller Limits

Engine Lycoming R-680-E3 Series
Maximum power S.L. 300 BHP at 2300 RPM full throttle 2 min.
Maximum continuous power 285 BHP S.L. at 2200 RPM 28.0" Hg.
Maximum cylinder temperature (head) 525°F or 274°C.
Oil capacity 5 US gallons
Maximum oil temperature 200°F. or 93°C.
Propeller Ham. Std. 2B20 with 6135A-6 to 6135A-10 blades
Diameter Limits: 8' 6" max., 8' 2" min.
Pitch settings at 42" station:

With 6135A-6, -7 and -8 blade	19° High, 6 ½° Low
With 6135A-9 and -10 blade	19° High, 8° Low

Fuel System

Use 87 Octane minimum grade aviation fuel.
Fuel system consists of 2 fuel tanks, one in each wing, with a capacity of 52.5 gallons each. One header tank in fuselage, 7 ½ U.S. gallon, fed directly by the wing tanks. The total usable fuel is 112.5 U.S. gallon. If airplane is equipped with one wing fuel tank, the total usable fuel will be 52.5 gallons plus 7 ½ gallons in header tank or 60 U.S. gallon.

NOTE - Fuselage tank (7 ½ gallons) is not gauged. When fuel level is below 7½ gallons in fuselage tank a red light on the instrument panel will come on. Switch to opposite wing tank provided there is fuel remaining in tank.

WARNING - Should red light fail to go out or no fuel remains in wing tanks, land as soon as practical as there is approximately 16 minutes fuel remaining in the aircraft at M.C. power.

Baggage Compartment

Do not exceed 159 lb. at station 192.

B. For Model 102:

(a) On instrument panel in full view of the pilot:
"This airplane must be operated as a normal category airplane in compliance with FAA approved operating limitations in the form of instruction markings and placards. No acrobatic maneuvers including spins approved."

(b) Below airspeed indicator:
"Maneuvering speed 114 mph."

(c) In baggage compartment:
(1) "Maximum baggage allowable 159 lb."

(d) On left door panel or readily visible:

"Maximum Weight and C.G. Range

Maximum weight	3350 lb.
Most Fwd., C.G.	+106.8" from datum
Most Aft, C.G.	+117.0" from datum

Datum is 86.5" fwd. of wing leading edge.

Airspeed Limits

Vne	Maximum glide or dive	150 mph	TIAS
Vc	Maximum design cruising speed	118 mph.	
Vp	Maneuvering speed	114 mph.	
Vf	Maximum flap down speed	89 mph.	

Maneuvering Load Factors

Do not exceed 3.8 load factor	flaps up
Do not exceed 1.9 load factor	flaps down

Instrument Marking

Red Radial	--	Maximum or minimum allowable
Yellow Arc	--	Cautionary range
Green Arc	--	Normal operating range
White Arc	--	Flap operating range

Engine and Propeller Limits:

Engine Jacobs R755 A2
Max. power, S.L. = 300 bhp at 2200 rpm, full throttle
Max. continuous power, S.L. = 300 bhp at 2200 rpm, full throttle
Max. Cyl. Hd Temp. = 500 deg F (260 deg C)
Max. Oil Temp. = 200 deg F (93 deg C)
Oil capacity - 6.5 US gallon
Prop = Ham. Std. 2b20 Hub, 6135A Blade, 7' 7-1/8" to 7' 9" diameter
Stops set for 10.3 to 12 deg low, 25.3 to 27 deg high pitch.
Measured at 42 inch station.

Fuel System

Use 80 octane minimum grade aviation fuel
Fuselage stump tank (7 ½) is not gauged. When Fuel Low Level Warning Light on instrument panel lights (red), fuel is below 7½ gallons. Should red light fail to go out, or no fuel remains in wing tank(s), land as soon as practical as there is approximately 16 minutes fuel remaining at METO power.

Baggage Compartment

Do not exceed 159 lb. at station 188.5"

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