

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

A-789
Revision 19
CURTISS-WRIGHT
C-46A
C-46D
C-46F

September 23, 1960

AIRCRAFT SPECIFICATION NO. A-789

Holder of Type Certificate L. B. Smith Aircraft Corporation
P. O. Box 456, Miami International Airport
Miami 48, Florida

I - Model C-46A and C-46D, Approved April 15, 1948 (Modified in accordance with United Services for Air, Inc.
Report No. 100)

Engines	2 P&W Military R-2800-75, -51 or -43	
Fuel	100/130 Min. octane aviation gasoline	
Engine limits	Maximum continuous, low blower: (Sea level) 43.2 in.Hg., 2400 rpm (1600 hp) (Straight line manifold variation with altitude to 5300 ft.) 41.5 in.Hg., 2400 rpm (1600 hp) or (See NOTE 6 for requirements) (Sea level) 44.0 in.Hg., 2550 rpm (1700 hp) (Straight line manifold variation with altitude to 5500 ft.) 43.0 in.Hg., 2550 rpm (1700 hp) Maximum continuous, high blower: (9000 ft.) 43.5 in.Hg., 2400 rpm (1450 hp) (13300 ft.) 43.0 in.Hg., 2400 rpm (1450 hp) Take-off (Two minutes), 52 in.Hg., 2700 rpm (2000 hp)	
Propellers	2 Ham. Std., hubs 23E50, Blades 6491-0 or 6801-0 (Blades 6491 and 6801 may be installed in same hub.) Diameter: Max. 15' 3/8", min. allowable for repairs 14' 8-1/2". Min. low pitch setting, 10° at 72" sta. or 2 Curtiss hubs C543S with Curtiss blades 814-3C3-18 or American blades C3821306 Max. diameter 13'6". Min. low pitch setting 17° at sta. 54.	
Airspeed limits	Maneuvering Cruising Never exceed Flaps extended Landing gear extended	163 mph (142 knots) True Ind. 240 mph (209 knots) True Ind. 270 mph (235 knots) True Ind. 135 mph (118 Knots) True Ind. 150 mph (130 knots) True Ind.
C.G. range (Gear extended)	(+308.0) to (+324.4) Effect of retracting landing gear is +21,029 in.lbs.	

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Maximum weight (See NOTE 11 for passenger operation)	45,000 lbs. only when cowling louvers on each engine are closed off; otherwise eligible for 44,000 lbs. and the following placard required: "Use of high blower, except for periodic exercise, unauthorized."		
No. seats	Variable - See approved loading schedule. Maximum passengers 62. Three emergency openings in addition to the main door must be provided. Crew: 2 pilots (+80) and engineer (+114)		
Baggage	(Maximum floor loading is 185 lbs. per sq. ft.) Comp. B, Sta. 128 to 194 1900 lbs. Comp. C, Sta. 194 to 276 4100 lbs. Comp. D, Sta. 128 to 276 3450 lbs. Comp. E, Sta. 276 to 358 4500 lbs. Comp. F, Sta. 358 to 440 4500 lbs. Comp. G, Sta. 399 to 542.5 1750 lbs. Comp. H, Sta. 440 to 542.5 5200 lbs. Comp. I, Sta. 542.5 to 615 3100 lbs. Comp. J, Sta. 615 to 704 2800 lbs.		
Fuel capacity	1406 gals. (Six tanks - 3 in each outer wing: two front, 236 gals. each (+304); two center, 292 gals. each (+340); two rear 175 gals. each (+374)) Fuselage fuel and oil tanks must be removed or placarded against use.		
Oil capacity	79.6 gals. (Two 39.8 gal. tanks) (+253)		
Control surface movements	Aileron	35° up	20° down
	Aileron tab	14° up	14° down
	Elevator	34° up	16° down
	Elevator trim tab	10° up	42° down
	Elevator spring tab	15° up	30° down
	Elevator "Vee" tab	31° up	20° down
	Rudder	18° right	18° left
	Rudder balance tab	25° right	25° left
	Wing flaps		35° down
Serial Nos. eligible	All Army C-46A and C-46D aircraft. Use manufacturer's number when available.		
Required equipment	See CAA Approved Airplane Flight Manual.		

II - Model C-46F, Approved January 31, 1949

The C46-D is basically the same as the C46-A. The C46-F is basically the same as the C46-A and D (modified in accordance with United Services For Air Report 100) except instrument panel re- arrangement, different ailerons, and the rudder is equipped with two tabs in lieu of one balance- trim tab as noted in United Services For Air Report 122.

Engines	2 P&W Military R-2800-75, -51 or -43
Fuel	100/130 min. octane aviation gasoline

Engine limits	<p>Maximum continuous, low blower: (Sea level) 43.2 in.Hg., 2400 rpm (1600 hp) (Straight line manifold variation with altitude to 5300 ft.) 41.5 in.Hg., 2400 rpm (1600 hp) or (See NOTE 6 for requirements) (Sea level) 44.0 in.Hg., 2550 rpm (1700 hp) (Straight line manifold variation with altitude to 5500 ft.) 43.0 in.Hg., 2550 rpm (1700 hp) Maximum continuous, high blower: (9000 ft.) 43.5 in.Hg., 2400 rpm (1450 hp) (13300 ft.) 43.0 in.Hg., 2400 rpm (1450 hp) Takeoff (two minutes), 52 in.Hg., 2700 rpm (2000 hp)</p>										
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C.G. range (Gear extended)	<p>(+308.0) to (+324.4) Effect of retracting landing gear is +21,029 in.lbs.</p>										
Maximum weight (See NOTE 11 for passenger operation)	<p>45,000 lbs. only when cowling louvers on each engine are closed off; otherwise eligible for 44,000 lbs. and the following placard required: "Use of high blower, except for periodic exercise, unauthorized."</p>										
No. seats	<p>Variable - See approved loading schedule. Maximum passengers 62. Three emergency openings in addition to the main door must be provided. Crew: 2 pilots (+80) and engineer (+114)</p>										
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Fuel capacity	<p>1406 gals. (Six tanks - 3 in each outer wing: two front, 236 gals. each (+304); two center, 292 gals. each (+340); two rear, 175 gals. each (+374). Fuselage fuel and oil tanks must be removed or placarded against use.</p>										
Oil capacity	<p>79.6 gals. (Two 39.8 gal. tanks) (+253)</p>										

Control surface movements	Aileron	12.5° up	11.5° down
	Aileron tab	12.5° up	13.5° down
	Elevator	34° up	16° down
	Elevator trim tab	10° up	42° down
	Elevator spring tab	15° up	30° down
	Elevator "Vee" tab	31° up	20° down
	Rudder	20° right	20° left
	Rudder trim tab	30° right	30° left
	Rudder spring tab	20° right	20° left
	Wing flaps		35° down
	Serial Nos. eligible	All Army C46-F aircraft. Use manufacturers' number when available.	
Required equipment	See CAA Approved Airplane Flight Manual.		

Specifications Pertinent to All Models

Datum	Nose of fuselage - Station 0
Leveling means	Lugs provided on right cabin floor at Stations 276 and 378.
Certification basis	Type Certificate No. 789 (CAR 3, Normal Category) (Airplanes which have been modified in accordance with Supplemental Type Certificate No. SA4-33 owned by Aircraft Engineering Foundation, INC., Meacham Field, Fort Worth, Texas, are eligible for transport category certification under the terms of Special Regulation 406A.)
Export eligibility	Eligible for export to all countries, subject to the provisions of MOP 2-4 except as follows: (a) Canada: Landplane - eligible Skiplane - not eligible
Equipment	See CAA Approved Airplane Flight Manual

- NOTE 1. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system). In addition, one of the following pertinent CAA Approved Airplane Flight Manuals, issued by United Services for Air, Inc. must be carried in the pilot's compartment at all times.
- CAA Approved Airplane Flight Manual for the Curtiss Model C-46A and D (modified) dated April 15, 1948, and revised (revision No. 9) August 20, 1949.
 - CAA Approved Airplane Flight Manual for the Curtiss Model C-46F (modified) dated January 31, 1949.
- NOTE 2. The following placards must be placed in the locations noted:
- On the instrument panel in full view of the pilot:
"This airplane must be operated in accordance with the limitations in Part I of the CAA Approved Airplane Flight Manual."
 - "No acrobatic maneuvers including spins approved."
- NOTE 3.
- The fuel boost pumps must be used during take-off, landing and for all operations at altitudes over 10,000 ft.
 - The flaps should be operated through several complete cycles during each engine warm-up.
- NOTE 4. Prior to civil certification the following must be accomplished:
- The manufacturer's nameplate should be altered to include the date of conversion. In case the original nameplate is not sufficiently large to include this additional information, a similar plate should be installed near the original plate. Under no circumstances should the original or any succeeding nameplate be removed from the aircraft.
 - The instruments should be marked for the approved limitations.
 - Cargo compartments should be placarded for the correct maximum capacity and for a maximum floor loading of 185 lbs. per sq. ft.

- (d) The following should be added to the engine nameplates:
"CAA Specification No. 5E-8."
- (e) A fire resistant enclosure or an adequate fire warning and fire extinguishing system must be provided for the fuel burning heater compartment and adequate drainage must also be provided in accordance with United Services for Air, Inc. Report 100.
- (f) A single master switch or a "gang" control on the present battery and generator switches must be provided to cut off all electrical power in one operation, including the auxiliary power unit, in accordance with United Services for Air, Inc. Report 100.
- (g) An emergency shut-off valve must be provided in each engine oil system. This valve should be located just aft of the firewall in each engine nacelle and should cut off all flow of oil to the engine accessory compartment except that the shut-off should not prevent feathering the propeller (Hamilton Standard Propeller).
- (h) An emergency shut-off valve must be provided in each engine nacelle to shut off the flow of hydraulic fluid forward of the firewall.
- (i) A fire resistant enclosure or an adequate fire warning and fire extinguishing system must be provided if an auxiliary power plant is installed.
- (j) (Deleted August 11, 1947)
- (k) (Deleted May 16, 1949)
- (l) The alternate filtered air ducts of the induction system running through firewalls should be removed and the valve of this system should be secured in the closed position. Also the openings then existing in the firewalls must be sealed with .015" stainless steel.
- (m) The auxiliary power plant is installed, the APU circuit breaker must be made accessible.
- (n) The glider release mechanism must be removed or placarded against use.
- (o) Original fuselage fuel and oil tanks must be removed or placarded against use. The auxiliary fuel tank installation by United Services for Air, Inc., Dwg. U20-7010 may be used in this airplane.
- (p) The oil cooler control rod opening in the firewall must be sealed.
- (q) If No. 3 (rear) fuel tanks are removed, it is necessary also to remove the position designation placard for these tanks on the fuel selector valves.
- (r) The left hand elevator trim tab control should be in accordance with Drawing 20-530- 5763, change A.
- (rr) Modifications as covered in U.S. for Air Report No. 100, Revised 11/1/48, for C-46A and D aircraft and U.S. for Air Report No. 122, dated 4/2/48, for C-46F aircraft.

If the airplane is to be operated at night, the following must also be accomplished:

- (s) Automatic reset circuit breakers must be installed in the landing light circuit in the nacelle junction box. Automatic reset circuit breakers must be installed in place of the manual reset circuit breakers in the generator circuit in the nacelle junction box.
- (t) The tail position light must be replaced with one of an approved type.
- (u) The resistance units in the position light circuits must be removed and the switch replaced with a single throw type or proper jumpers must be incorporated in the present switches.
- (v) The separate switches for the wing and tail position lights must be replaced with a single switch or the present switches must be "ganged" for single operation.
- (w) (Deleted May 16, 1949).

If certification to carry passengers under the provisions of CAR 42-2 is desired the following must be accomplished:

- (x) (For Models C-46A and D only). Modifications covered in United Services for Air, Inc. Report 126 (Rev. 2-25-49) or United Services for Air, Inc. Fire Prevention Kits 1-126 (dated May 6, 1949) or 1a-126 (revised July, 1949).

NOTE 5. (For Models C-46A and D only). Cargo may be carried in rear lower compartment when modifications covered by U.S. Air, Inc. Fire Prevention Kit 1B-126 (dated May 6, 1949 - Revised August 15, 1949) have been incorporated. These modifications required for passenger operations only.

NOTE 6. Use of the alternate engine rating requires the following:

- (a) Remarking of powerplant instruments in accordance with CAR 3.759.
- (b) Addition of alternate engine rating to limitations section of Airplane Flight Manual.
- (c) No increase in the performance values contained in the Airplane Flight Manual authorized unless officially substantiated by the applicant.

- NOTE 7. The following brake blocks are satisfactory replacements for the original blocks in Hayes brakes No. H-2-257-1 on C-46 aircraft:
 (a) M.E. Williams Enterprises No. MEW-1000
 (b) Slick Airways No. 00340
 (c) Flying Tiger Line, Inc. PS 265
- NOTE 8. Seat installations meeting the requirements of CAR 4a are eligible for certification in the subject model aircraft.
- NOTE 9. Slick Airways exhaust manifold, P/N 00237, is an acceptable replacement for the original manifold assembly.
- NOTE 10. B.G. Goodrich Part No. 37572 propeller deicer fluid feed strips eligible for Hamilton Standard propellers, length 52 in. from discharge tube. Installation should be in accordance with Hamilton Standard Service Bulletin No. 210. Usable ceiling reduction of 250 ft. required when deicing boots are installed.
- NOTE 11. In accordance with this Aircraft Specification, SR-391 and SR-406, the maximum allowable weight for the carriage of passengers for remuneration or hire is 44,000 lbs., unless the following are accomplished:
 (a) If the cowling louvres are closed off then the maximum allowable weight for the carriage of passengers for remuneration or hire is 44,300 lbs.
 (b) If (a) above is accomplished and Hamilton Standard propeller blades 6491-6 to 6491-9 (modified in accordance with Pan American World Airways Report No. LA424 or with Propeller Service of Miami, Inc. Report No. C-3614) are installed, the maximum weight permitted for the carriage of passengers for remuneration or hire is 45,000 lbs.
- NOTE 12. Models C-46A and C-46D are eligible for operation as a cargo carrier at a maximum takeoff and landing weight of 48,000 pounds and a maximum zero fuel weight of 47,500 pounds when modified in accordance with L.B.S./A.C.E.S. Report No. AC20T-LG-1, Report No. AC20T-100-1, Report No. AC20T-100-2, Report No. AC20T-100-3, Report No. AC20T-100-4, and Report AC20T-100-5, and when equipped with a suitable FAA Approved Airplane Flight Manual specifying such operation.

Model C-46F is eligible for operation as a cargo carrier at a maximum takeoff and landing weight of 48,000 pounds and a maximum zero fuel weight of 47,500 pounds when modified in accordance with L.B.S./A.C.E.S. Report No. AC20T-LG-1, and when equipped with a suitable FAA Approved Airplane Flight Manual specifying such operation.

- NOTE 13. The following control surface travel tolerances are applicable:

	C46A, C-46D		C-46E, C46F	
	Unbalance Permitted	Spanwise C.G. of Surface of Airplane Sta.	Unbalance Permitted	Spanwise C.G. of Surface of Airplane Sta.
Aileron	+5 ± 20 in. lb.	(1)	+ 5 ± 20 in. lb.	285.5 ± 2.5
Aileron trim tab	(1)	(1)	+12.2 ± 2 in. lb.	200 ± 2
Elevator (each)	(2)	(2)	+410 ± 70 in. lb.	109 ± 2
Elevator vee tab	(2)	(2)	- 12.2 ± 1.0 in. lb.	109 ± 2
Elevator spring tab	(2)	(2)	+ 1.0 ± 1.0 in. lb.	37 ± 2
Elevator trim tab	(1)	(1)	+12.0 + 1 in. lb.	106 ± 2
Rudder	+170 ± 70 in. lb.		- 5	
Rudder spring tab	(3)		+170 ± 70 in. lb.	108 ± 2
			+ 35.8 + 0 in. lb.	84 ± 2
			- 5	
Rudder trim tab	(1)		+17.5 + 1.5 in. lb.	151 ± 2
			- 5	

General Notes: The surface tabs should be balanced prior to balancing the control surface to which they are attached. All control rods, etc., should be in their normal position when balancing surface, but disconnected at the control surface horn.

(+) Plus unbalance indicates that the center of gravity of the control surface is aft of the hinge line, i.e., T.E. heavy.

- Footnotes:
- (1) Not available.
 - (2) Models C-46A and C-46D require installation of C-46F type elevator prior to certification. Use values shown for C-46F.
 - (3) Does not apply to C-46A and C-46D.

NOTE 14. The installation of a CO2 fire extinguishing system in accordance with L.B. Smith Aircraft Corporation Report No. R-5.161.09, revised September 8, 1958, is eligible as an alternate with the existing CF3 BR fire extinguishing system on aircraft previously modified by S.T.C. SA2-422.

NOTE 15. Airplanes of the models shown on this specification which have been converted to the model "Super 46C" (per STC No. SA2-422) may be made eligible for operation at maximum takeoff weight up to 50,650 lbs. and maximum landing weight up to 49,000 lbs., when installations per L.B. Smith Report No.5.007.02 are made. AEF/LBSmith Aircraft Corporation AFM Supplement, dated September 12, 1958, to Super 46C AFM is required.

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