

FEDERAL AVIATION AGENCY

A-772 Revision 17 CURTISS-WRIGHT Army C-46A C-46D C-46E C-46F  April 4, 1960
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AIRCRAFT SPECIFICATION NO. A-772

Holder of Type Certificate      Flying Tiger Line, Inc.  
 Lockheed Air Terminal  
 Burbank, California

I - Model C-46A and C-46D (Normal Category), Approved September 30, 1948  
 The C-46D is basically the same as the C-46A.

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., 2500 rpm (1600 hp) (Straight line manifold variation with altitude to 5300 ft.) 41.5 in.Hg., 2400 rpm (1600 hp) or (See NOTE 5 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)	
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	163 mph (142 knots) True Ind.
	Cruising	240 mph (209 knots) True Ind.
	Never exceed	270 mph (235 knots) True Ind.
	Flaps extended	135 mph (117 Knots) True Ind.
	Landing gear extended	150 mph (131 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 10 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	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 (See Curtiss-Wright report 20Z16)
	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° up	25° left (See Slick Airways Report B-04)
	Wing flaps	35° down	
Serial Nos. eligible	All Army C-46A and C-46D aircraft. Use manufacturer's serial number when available.		
Required equipment	See FAA Approved Airplane Flight Manual.		

II - Models C-46E and C-46F (Normal Category), Approved April 3, 1947 and September 30, 1948 respectively.

The C-46F is basically the same as the C-46A except instrument panel arrangement, different ailerons and rudder equipped with two tabs in lieu of one balance-trim tab. The C-46F is also basically the same as C-46E (modified in accordance with Slick Report B-01) except for the shape of the nose and items noted in Slick Report B-02.

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 5 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)          (13500 ft.) 43.0 in.Hg., 2400 rpm (1450 hp)          Takeoff (two minutes), 52 in.Hg., 2700 rpm (2000 hp)</p>																		
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Maximum weight (See NOTE 10 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."          For 48,000 lbs. (takeoff) and 46,800 lbs. (landing) see NOTE 4.</p>																		
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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 C-46E and C-46F aircraft. Use manufacturers' number when available.	
Required equipment	See FAA Approved Airplane Flight Manual.		

Specifications Pertinent to All Models

Datum	Nose of fuselage - Station 0
Leveling means	Lugs on right cabin floor at Stations 276 and 378.
Certification basis	Type Certificate No. 772 (CAR 3, Normal Category) (Airplanes which have been modified in accordance with Supplemental Type Certificate No. SA4-33 owned by Flying Tiger Line, Inc., Lockheed Air Terminal, Burbank, California, 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: <ul style="list-style-type: none"> <li>(a) Canada: Landplane - eligible</li> <li>          Skiplane - not eligible</li> </ul>

NOTE 1. Current weight and balance report including listing 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 CAA Approved Airplane Flight Manuals, issued by Slick Airways, Inc. or by Skyways International, Inc. (in the case of the C-46E) must be carried in the pilot's compartment at all times.

- (a) CAA Approved Operating Limitations (Airplane Flight Manual) for the Curtiss-Wright Model C-46A & D airplane dated September 30, 1948 and including revisions through May 29, 1952.
- (b) CAA Approved Operating Limitations (Airplane Flight Manual) for the Curtiss-Wright Model C-46E airplane dated July 31, 1947 and including revisions through November 5, 1951. (Issued by Slick Airways, Inc.)
- (c) CAA Approved Operating Limitations (Airplane Flight Manual) for the Curtiss-Wright Model C-46E airplane dated September 30, 1946. (Issued by Skyways International, Inc.)
- (d) CAA Approved Operating Limitations (Airplane Flight Manual) for the Curtiss-Wright Model C-46F airplane dated September 30, 1948 and including revisions through May 20, 1952.
- (e) See NOTE 4 for Flight Manual for 48,000 lbs. gross weight.

NOTE 2. The following placards must be placed in the locations noted:

- (a) On the instrument panel in full view of the pilot:
  - "This airplane must be operated in compliance with the approved operating limitations. No acrobatic maneuvers including spins approved."
  - "Do not lower landing gear above 150 mph TIAS or wing flaps above 135 mph TIAS."
  - "This airplane serviced with 91 octane fuel in front and rear tanks. Use of 91 octane fuel permitted only in accordance with the limitations of the Civil Aeronautics Administration Approved Flight Manual."
  - (Required only when 91 octane fuel is used.)

"In case of fire:

1. Shut off fuel, oil and hydraulic
2. Feather propeller
3. Turn off ignition
4. Close cowl and oil cooler flaps
5. Retract landing gear
6. Pull fire extinguisher
7. Land as soon as possible."

- (b) At the fuel selector valve:  
 "Front tank, 226 U.S. gal., 91 octane fuel  
 Center tank, 292 U.S. gal., 100 octane fuel  
 Rear tank, 175 U.S. gal., 91 octane fuel"  
 (Required only when 91 octane fuel is used)  
 "Use rear (No. 3) fuel tanks in level flight only."
- (c) At the front tank filler neck:  
 "Fill tank to one inch above filler neck collar."  
 (Required only when 91 octane fuel is used.)

NOTE 3.

Prior to civil certification the following must be accomplished:

- (a) 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.
- (b) The instruments should be marked for the approved limitations.
- (c) 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:  
 "FAA 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 Slick Airways Report No. B-01.
- (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 Slick Airways Report No. B-01.
- (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.
- (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 for the auxiliary power plant in accordance with Slick Airways Report No. B-01.
- (j) (Deleted August 11, 1947)
- (k) (Deleted October 18, 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 circuit breaker must be made accessible.
- (n) The glider release mechanism must be removed or placarded against use.
- (o) Fuselage fuel and oil tanks must be removed or placarded against use.
- (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 Slick Airways Report B-01, revised March 22, 1946, for C- 46E aircraft, Slick Airways Report B-02, dated August 22, 1947 for C-46F aircraft and Slick Airways Report B-04 revised January 3, 1948 for C-46A and D aircraft.

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

- (s) Landing light fuses must be relocated so as to be accessible to the crew in flight.
- (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.

NOTE 4. Models C-46E and C-46F eligible for certification at the following gross weights and revised airspeed limitations, when modified in accordance with Slick Airways, Inc. Report No. B-06 and accompanied by Federal Aviation Agency approved Airplane Flight Manual dated November 10, 1949 issued by Slick Airways, Inc. (Report No. A-05):

Maximum takeoff weight	48,000 lbs.
Maximum landing weight	46,800 lbs.
Airspeed limits (at maximum weight)	
Maneuvering	149 mph (130 knots) True Ind.
Cruising	220 mph (191 knots) True Ind.

At 48,000 pounds gross weight a minimum of 472 gallons of fuel equally divided between the left and right wing tanks is required in accordance with Report No. B-06.

At 46,800 pounds weight a minimum of 272 gallons of fuel is required.

At 45,168 pounds weight, the minimum fuel required for structural reasons is zero gallons; between 45,168 pounds and 48,000 pounds, the minimum fuel varies directly from 0 to 472 gallons.

NOTE 5. Use of the alternate engine rating under Section I 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 6. 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 7. Seat installations meeting the requirements of CAR 4a are eligible for certification in C-46 aircraft.

NOTE 8. Slick Airways exhaust manifold, P/N 00237, is an acceptable replacement for the original manifold assembly.

NOTE 9. 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 10. In accordance with SR-391 and SR-406, the maximum weight allowable for the carriage of passengers for remuneration or hire is 44,300 lbs., except that such weight may be increased 1,000 lbs. for those airplanes equipped with Hamilton Standard propeller blades 6491-6 to 6481-9 modified in accordance with Pan American World Airways Report No. LA424 or with Propeller Service of Miami, Inc. Modification No. C-3614. However, any increase in gross weight so granted may not exceed the "maximum weight" for the particular model as shown elsewhere in this specification.

NOTE 11. 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 value shown for C-46F.
- (3) Does not apply to C-46A and C-46D.

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