DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

A-786
Revision 9
CURTISS-WRIGHT
C-46E

April 10, 1959

AIRCRAFT SPECIFICATION NO. A-786

Manufacturer — Curtiss-Wright Corporation
Columbus, Ohio

I - Model C-46E, Approved April 25, 1947

Engines — 2 P&W Military R-2800-75

Fuel — 100/130 Min. grade 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)
Takeoff (two minutes):
52.0 in.Hg., 2700 rpm (2000 hp)

Propellers —
2 Curtiss Controllable Electric C542S-B/836-17C2-0
Pitch: High 45° at 54" sta.
Low 15° at 54" sta.
2 Ham. Std., Hubs 23E50, Blades 6491-0 to 6491-3 incl.
Max. Diameter 15' 3/8", Min. Diameter 14' 8-1/2".
Min. low pitch setting, 10° at 72" sta.

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 (118 Knots) True Ind.
Landing gear extended	150 mph (130 knots) True Ind.

C.G. range — (+308.0) to (+324.4) with landing gear extended.
Effect of retracting landing gear is +21,029 in.lbs.

Maximum weight — 42,500 lbs. (Take-off and Landing) (See NOTE 5 for 45,000 lbs.)

No. seats — Variable, see Approved Airplane Flight Manual.
Maximum passengers 62. Three emergency openings in addition to the main door must be provided.
Crew: 2 pilots (+80) and engineer (+114)

Maximum baggage	3450 lbs. (+128 to +275), 1750 lbs. (+397 to +542.5)
Fuel capacity	1406 gals. (Six outer wing tanks, two front, 236 gals. each at +304; two center, 292 gals. each at +340; two rear, 175 gals. each at +374) Fuselage fuel and oil tanks must be removed or placarded against use.
Oil capacity	80 gals. - two 40 gal. tanks (+253)

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	Army serial Nos. 43-47403 to 43-47419 incl. Use manufacturer's serial number when available.
Required equipment	See Approved Airplane Flight Manual (Obsolete nomenclature for this manual is: "Approved Operating Limitations")

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. 786 (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 Approved Airplane Flight Manual dated April 25, 1947, and including revisions through Oct. 22, 1948.

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).

NOTE 2. The following placards must be placed on the instrument panel in full view of the pilots:
"This airplane shall be operated in accordance with CAA approved Operating Limitations." This document shall be carried in the pilot's compartment at all times.
"No acrobatic maneuvers, including spins, approved."
The following placard should be placed near the fuel selector valves: "Use of No. 3 (rear) fuel tanks in level flight only."

NOTE 3. (a) The fuel boost pumps must be used during takeoff, landing and for all operations at altitudes over 10,000 ft.
(b) 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:

(a) The manufacturer's name plate should be altered to include the date of conversion. In case the original name plate 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.
(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 Curtiss-Wright Report No. 20Z-1 Revised 8/22/46.
(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 Curtiss-Wright Report No. 20Z-1 Revised 8/22/46.
(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.
(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 Curtiss- Wright Report No. 20Z-1 revised 8/22/46.
(j) 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.
(k) The auxiliary power plant circuit breaker must be made accessible.
(l) The glider release mechanism must be removed or placarded against use.
(m) Fuselage fuel and oil tanks must be removed or placarded against use.
(n) The oil cooler control rod opening in the firewall must be sealed.
(nn) Modifications as covered in Curtiss-Wright Report 20Z-1 revised Aug. 22, 1946.

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

(o) Landing light fuses must be relocated so as to be accessible to the crew in flight.
(p) The tail position light must be replaced with one of an approved type.
(q) 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.
(r) 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 5. Eligible at gross weight of 45,000 lbs. (takeoff and landing) when incorporating Hamilton standard propellers 23E50/6491A. See Curtiss-Wright Airplane Flight Manual revised September 12, 1947 for operating data.

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

NOTE 8. Seat installations meeting the requirements of CAR 4a are eligible for certification in C-46 aircraft.

NOTE 9. B.F. 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. Deleted April 25, 1958.

NOTE 11. The following control surface travel tolerances are applicable.

	Unbalance Permitted	Spanwise C.G. of Surface Airplane Sta.
Aileron	+ 5 ± 20 in.lb.	285.5 ± 2.5
Aileron Trim Tab	+12.2 ± 2 in.lb.	200 ± 2
Elevator (each)	+410 ± 70 in.lb.	109 ± 2
Elevator Vee Tab	-12.2 ± 1.0 in.lb.	109 ± 2
Elevator Spring Tab	+1.0 ± 1.0 in.lb.	37 ± 2
Elevator Trim Tab	+12.0 + 1 - 5 in.lb.	106 ± 2
Rudder	+170 ± 70 in. lb.	108 ± 2
Rudder Spring Tab	+35.8 + 0 - 5 in.lb.	84 ± 2
Rudder Trim tab	+17.5 + 1.5 - 5 in.lb.	151 ± 2

Notes: (1) 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.

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

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