

FEDERAL AVIATION AGENCY

2A5
Revision 5
SMITH
C-46/CW20-T
Super C-46/CW20-T

November 1, 1963

AIRCRAFT SPECIFICATION NO. 2A5

Holder of Type Certificate Tempo Design Corporation
P. O. Box 48-456
Miami International Airport
Miami 48, Florida

I - Model C-46/CW20-T, Approved March 20, 1956

Engines (See Item 101)

Fuel Minimum grade aviation gasoline: Grade 100/130

Engine limits (Straight line manifold pressure variation with altitude shown)

	<u>HP</u>	<u>RPM</u>	<u>MP In.Hg.</u>	<u>Alt.</u>
Low impeller gear ratio 7.29:1				
Takeoff (2 minutes) (dry)	2100	2800	54.0	S.L.
Takeoff (2 minutes) (dry)	2100	2800	52.5	3400
(Critical altitude)				
Maximum continuous	1800	2600	45.0	S.L.
Maximum continuous	1800	2600	44.0	6500
High impeller gear ratio 9.45:1				
(except -57, -73, -77, -83AM2)				
Maximum continuous	1500	2500	43.0	10000
Maximum continuous	1500	2500	42.0	16000

Carburetor and carburetor setting Stromberg PR58E2 (P/L391334-1) or
Stromberg PR58E2-5 (P/L391327-3)

Airspeed limits (C.A.S.) Vno (Normal Operating) 203 mph (176 knots)
Vne (Never Exceed) 270 mph (235 knots)
Vp (Maneuvering) 147 mph (128 knots)
Vfe (Flaps down 35°) 150 mph (130 knots)
(Flaps down 17°) 172 mph (150 knots)
(Flaps down 10°) 190 mph (165 knots)
Vlo (Landing gear operation) 150 mph (131 knots)
Vle (Landing gear extension) 150 mph (131 knots)

C.G. range (308.0) (19.7% MAC) to (324.4) (29.7% MAC)
(Gear extended) Effect of retracting landing gear +21,029 in.lbs.

Maximum weights Takeoff 47,650 lbs.
Landing 47,500 lbs.
Zero fuel 47,500 lbs. (All weight in the airplane above this weight must consist of
fuel equally distributed in both wings.)

Minimum crew 2. Pilot (+80.0) and Co-Pilot (+80.0)

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Maximum passengers 67 (Including crew) (SR-389, dated October 27, 1952)

Maximum baggage (Maximum floor loading is 185 lbs. per sq. ft.)

<u>Compartment</u>	<u>Station</u>	<u>Capacity</u>
B	128-194	1900 lbs.
C	194-276	4100 lbs.
D (Fwd. Low. Bagg.)	128-276	3450 lbs.
E	276-358	4500 lbs.
F	358-440	4500 lbs.
G (Aft Low. Bagg.)	399-542.5	1750 lbs.
H	440-542.5	5200 lbs.
I	542.5-615	3100 lbs.
J	615-704	2800 lbs.

Fuel capacity 1400 gals. total usable (6 tanks - 3 in each wing)
 Two fwd. tanks 235 gals. usable each (+304)
 Two center tanks 291 gals. usable each (+340)
 Two rear tanks 174 gals. usable each (+374)

Oil capacity 67.6 gals. usable (33.8 gals. usable each tank) (+253)

Serial Nos. eligible All Curtiss-Weight C-46A, C-46D and C-46F aircraft remanufactured in accordance with FAA Approved L.B. Smith Aircraft Corp. Report AC- 20T-100. Use manufacturer's serial number when available.

Required equipment In addition to the pertinent required basic equipment specified in CAR 4b, the following items of equipment must be installed: 1(a), 2(a) or (b), 3(a), 4(a), 5(a), 101, 102(a), 102(b), 103(a), (b) or (c), 106(a) and (b), 107, 201(a) or (b), 202, 203, 204, 205(a), 206(a), 208, 301(a), or (b), 302(a), 303(a), 401(a), 403(a), 404(a), 405(a) and (b).

II - Model Super C-46/CW20-T, Approved May 28, 1958

Engines (See Item 101)
 Fuel Minimum grade aviation gasoline: Grade 100/130

Engine limits (Straight line manifold pressure variation with altitude shown)

	<u>HP</u>	<u>RPM</u>	<u>MP</u> <u>In.Hg.</u>	<u>Alt.</u>
Low impeller gear ratio 7.29:1				
Takeoff (2 minutes) (dry)	2100	2800	54.0	S.L.
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(Critical altitude)				
Maximum continuous	1800	2600	45.0	S.L.
Maximum continuous	1800	2600	44.0	6500
High impeller gear ratio 9.45:1				
(except -57, -73, -77, -83AM2)				
Maximum continuous	1500	2500	43.0	10000
Maximum continuous	1500	2500	42.0	16000

Carburetor and carburetor setting Stromberg PR58E2 (P/L395516-15 or P/L395516-15S) or Stromberg PR58E2-5 (P/L391327-3)

Airspeed limits

Vno (Normal Operating)	207 mph (179 knots)
Vne (Never Exceed)	270 mph (235 knots)
Vp (Maneuvering)	147 mph (128 knots)
Vfe (Flaps down 35°)	150 mph (130 knots)
(Flaps down 17°)	172 mph (150 knots)
(Flaps down 10°)	190 mph (165 knots)
Vlo (Landing gear operation)	150 mph (131 knots)
Vle (Landing gear extension)	150 mph (131 knots)

C.G. range (Gear extended)	Rearward (all weights) (324.4) (29.7% MAC) Forward (a) all weights below 40,000 lbs. (308.0) (19.7% MAC) (b) all weights above 40,000 lbs. (313.4) (23% MAC)																														
Maximum weights	Zero fuel 48,700 lbs. (All weight on the airplane in excess of 48,700 lbs. must consist of fuel equally distributed in both wings.) <table><tr><td><u>Takeoff</u></td><td><u>Landing</u></td></tr><tr><td>50,100 (1)</td><td>48,000</td></tr><tr><td>50,100 (1)</td><td>49,000 (2)</td></tr><tr><td>50,400 (3)</td><td>48,000</td></tr><tr><td>50,650 (3)</td><td>49,000 (2)</td></tr></table> <u>Foot Notes</u> (1) Items 1(a) and 401(b) required. (2) Center section rib reinforcement required per AEF/LBS Report No. 2. (3) Items 1(b), 401(b) and 401(c) required.	<u>Takeoff</u>	<u>Landing</u>	50,100 (1)	48,000	50,100 (1)	49,000 (2)	50,400 (3)	48,000	50,650 (3)	49,000 (2)																				
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Minimum crew	2. Pilot (+80.0) and Co-Pilot (+80.0)																														
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Oil capacity	67.6 gals. usable (33.8 usable each tank) (+253)																														
Serial Nos. eligible	All Curtiss-Wright C-46A, C-46D and C-46F aircraft remanufactured in accordance with FAA Approved L.B. Smith Aircraft Corp. Reports AC-20T-100 and R-5.000.02. Use manufacturer's serial number when available.																														
Required equipment	In addition to the pertinent required basic equipment specified in CAR 4b, the following items of equipment must be installed: 1(a) or (b), 2(a) or (b), 3(a), 4(a), 5(a), 101, 102(c) or (d), 103(a), (b) or (c), 106(a) and (b), 107, 201(a), 202, 203, 204(a) or (b), 205(a), 206(a), 208, 301(a), or (b), 302(a), 303(a), 401(b) and (c), when applicable, 403(a), 404(a), 405(a) and (b).																														

Specifications Pertinent to All Models

Datum	Nose of fuselage (Station 0)
MAC	164.25 in. (L.E. of MAC at Station 275.61)
Leveling means	Lugs provided on right cabin floor at Stations 276 and 378

Control surface movements	Aileron(C-46A and D only)	35° up, 20° down ($\pm 2^\circ$) (Droop 3/4" at trailing edge)
	Aileron Tab(C-46A and D only)	14° up, 14° down ($\pm 1^\circ$)
	Aileron (C-46F only)	12.5° up ($\pm 1^\circ$), 11.5° down ($+0^\circ$, -1°) before droop (Droop 1.5° (.81 in.))
	Aileron Tab(C-46F only)	12.5° up, 13.5° down ($\pm 1^\circ$)
	Elevator	34° up ($+1^\circ$, -0°), 16° down ($\pm 1^\circ$)
	Elevator Spring Tab	15° up, 30° down ($\pm 2^\circ$)
	Elevator Trim Tab	10° up, 32° down ($\pm 3^\circ$) from 10° down neutral position
	Elevator "Vee" Tab	21° up, 30° down ($\pm 3^\circ$) from 10° up neutral position
	Wing Flaps	35° down ($\pm 2^\circ$)
	Rudder	20° L & R ($\pm 1^\circ$)
	Rudder Spring Tab	20° L & R ($\pm 2^\circ$)
	Rudder Trim Tab	30° L & R ($\pm 3^\circ$)
Certification basis	Type Certificate No. 2A5 (Transport Category, CAR 4b, dated July 20, 1950, with the following exceptions: <ol style="list-style-type: none"> 1. Section 4b.0 thru Section 4b.19, of CAR 4b, effective May 18, 1954, is complied with; 2. Section 4b.480 thru Section 4b.490, effective May 16, 1953, with the exception of Section 4b.484(a)(1) and Section 4b.487(e), is complied with; 3. In determining compliance with Section 4b.116, performance credit for automatic indication of loss of power was utilized; 4. Section 4b.324, 4b.337, 4b.352, and 4b.353 are not complied with. As is provided in SR-406A, effective June 7, 1955.) Compliance with the ditching provisions of Section 4b.261 has been shown.	
Production basis	None. Prior to original certification of each aircraft, an FAA agent must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data and a check of the flight characteristics.	
Export eligibility	Eligible for export to all countries subject to the provision of MOP 2-4 except as follows: <ol style="list-style-type: none"> (a) Canada - Landplane - eligible Skiplane - not eligible 	

Equipment:

Propellers and Propeller Accessories (Excepting Deicing Equipment)

1. Propellers
 - (a) 2 Ham. std. hubs 33E60, blades 6801-6 (including slingers only) 1016 lbs. (138)
 Diameter: Max. 14' 7-5/16", Min. allowable for repairs
 14' 3-5/16". No further reduction permitted.
 Pitch settings at 72 in. sta.: Min. low pitch 14°, feathering angle 83°.

Placards required (with engines, Item 101):

 - (1) "Avoid continuous operation in flight between 1875 and 2175 rpm."
 - (2) "Avoid continuous ground operation between 1600 and 1875 rpm and between 1950 and 2275 rpm."

Placards required (with engines Item 101 incorporating crankshaft modifications and suffix "D" or "H" added to model designation per Note 12, Engine Spec. 5E-8, Page 28.02, Aircraft Engine Listing)

 - (1) "Avoid continuous ground operation between 1600 and 1875 rpm."
 - (b) 2 Ham. Std. hubs 33E60, blades 6801-0(including slingers only) 1016 lbs. (138)
 (Eligible only on engines Item 101 incorporating crankshaft modifications and suffix "D" or "H" added to model designation per Note 12, Engine Specification 5E8, Page 28.02, Aircraft Engine Listing)
 Diameter: Max. 15' 1-5/16", Min. allowable for repairs
 14' 9-3/16". No further reduction permitted.
 Pitch settings at 72 in. sta.: Min. low pitch 13°, feathering angle 83°.

Placards required: "Avoid continuous ground operation between 1475 and 1750 rpm."

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|---------------------------------------|---------------|
| 2. Propeller Governors | |
| (a) Ham Std. 4G8G30M | 10 lbs. (157) |
| (b) Ham Std. 4G8G23G1 | 10 lbs. (157) |
| 3. Propeller feathering pumps | |
| (a) 2 PESCO Series 280 | 38 lbs. (222) |
| 4. Propeller feathering switches | |
| (a) 2 Airite Products 1230 | 1 lb. (47) |
| 5. Propeller torque pressure switches | |
| (a) Airite Products 5012A | 4 lbs. (151) |

Engines and Engine Accessories - Fuel and Oil Systems

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| 101. Engines - 2 Pratt & Whitney Military Models as noted below with 20.9 Prop. reduction gearing: (Note: Water injection not approved on this installation) | |
| (a) R-2800-34 | 4720 lbs. (175) |
| or (b) R-2800-24M1 | 4720 lbs. (175) |
| or (c) R-2800-57 | 4630 lbs. (175) |
| or (d) R-2800-73 | 4702 lbs. (175) |
| or (e) R-2800-77 | 4642 lbs. (175) |
| or (f) R-2800-83AM2 | 4734 lbs. (175) |
| or (g) R-2800-83AM3 | 4734 lbs. (175) |
| or (h) R-2800-83AM4 | 4734 lbs. (175) |
| or (i) R-2800-83AM4A | 4734 lbs. (175) |
| or (j) R-2800-85 | 4750 lbs. (175) |
| or (k) R-2800-85A | 4730 lbs. (175) |
| or (l) R-2800-85XA | 4730 lbs. (175) |
| or (m) R-2800-83A | 4734 lbs. (175) |
| or (n) R-2800-101 | 4702 lbs. (175) |
| 102. Oil coolers and temp. reg. | |
| (a) 2 Oil coolers, Airesearch 86745(C-46/CW20-T) | 68 lbs. (203) |
| (b) 2 Oil temp. regulators, Airesearch 18910-155-13 (C-46/CW20-T) | 10 lbs. (203) |
| (c) 2 Oil coolers, Clifford 60688 (Super C-46/CW20-T) | 35 lbs. (202) |
| (d) 2 Oil coolers, Clifford E-46699 (Super C-46/CW20-T) | 37 lbs. (202) |
| 103. Starters: | |
| (a) 2 Jack & Heintz JH5ER | 94 lbs. (216) |
| (b) 2 Jack & Heintz JH4ER | 82 lbs. (216) |
| (c) 2 Jack & Heintz JH6ER12 | 56 lbs. (216) |
| 104. Residual oil | 90 lbs. (194) |
| 105. Residual fuel | 36 lbs. (338) |
| 106. Emergency fuel pumps & motors | |
| (a) 2 Pump type AN4102 | 8 lbs. (363) |
| (b) 2 Motor ADEL Model 7033 | 12 lbs. (369) |
| 107. 6 Fuel booster pumps (Thompson TED 12900) | 36 lbs. (339) |
| 108. Deleted, See "Carburetor & Carburetor setting", under pertinent operating limitations. | |

Landing Gear

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| 201. 2 Main wheel-brake assemblies, 19.00-23, Type III | |
| (a) Goodrich | |
| Wheel Assembly No. H-3-845 | 348 lbs. (275) |
| Brake Assembly No. H-2-642 | 105 lbs. (275) |
| (b) Goodrich | |
| Wheel Assembly No. H-3-38M-1 | 343 lbs. (275) |
| Brake Assembly No. H-2-257-1 | 90 lbs. (275) |
| 202. 2 Main wheel tires, 19.00 x 23, 16 ply nylon or rayon Type III, and regular tubes | 542 lbs. (275) |
| 203. 1 Tail wheel, Goodrich, D-3-21-M | 11 lbs. (756) |

204. 1 Tail wheel tire
- (a) Tail wheel tire, 10.00 x 7, 12-ply rating nylon, channel tread, Type III, and regular tube 46 lbs. (756)
 - (b) Tail wheel tire, 10.00 x 7, 12-ply rating nylon, rib tread, Type III, and regular tube 35 lbs. (756)
205. Main gear shock strut assembly
- (a) 2 Cleveland 8250 A (Modified)
206. Tail wheel shock strut
- (a) 1 Cleveland 8108
207. Deleted June 16, 1959
208. Hydraulic by-pass system in accordance with Report R-5.130.01

Electrical Equipment

301. Generators
- (a) 2 Generator assemblies, Type P-2 (200 amp) 76 lbs. (217)
 - (b) 2 Generator assemblies, Type P-1 (200 amp) when engine drive pad has approved modification for low speed drive 96 lbs. (217)
302. Alternators
- (a) 2 (400 cycle, 24 volt, 750 bolt amp) Model 149F or 149H 41 lbs. (78)
303. Batteries
- (a) 2 Batteries, Aircraft Storage, Type G1, 24 Volt 158 lbs. (100)

Interior Equipment

401. (a) FAA Approved Airplane Flight Manual dated March 30, 1956, Revised July 22, 1963.
 (b) FAA Approved Airplane Flight Manual dated April 14, 1958, Revised July 23, 1963.
 (c) FAA Approved Airplane Flight Manual Supplement dated September 12, 1958, Revised July 24, 1963.
 (See CAR Amendment 4b-2 dated August 25, 1955) Revisions shown are not necessarily mandatory but only reflect the latest revision to current manuals.
402. Automatic Pilot
- (a) Type A3-A (Sperry) (3 Servos Sperry 644469) 70 lbs. (92)
 - 1. Servo stall forces measured at the Pilot's controls with system relief at 150 PSI & Servo overpower valve set at 75% (112.5 PSI)
 Rudder - 120 lbs.
 Elevator - 85 lbs. at rim of control wheel
 Aileron - 38 lbs. at rim of control wheel
 - 2. Autopilot system relief valve setting 130 to 150 PSI Servo overpower valve setting 75 to 100% of system
403. Windshield wipers
- (a) 2 Marquette 7 lbs. (40)
404. Instruments
- (a) In accordance with L. B. Smith Aircraft Corp. Dwg. 5.141.07
405. Hydraulic Fluid in reservoir and system (Mineral Oil)
- (a) Reservoir (7 gals.) 56 lbs. (142)
 - (b) System 75 lbs. (317)

De-Icing Equipment

501. Wing de-icer boots
- | | |
|---|---------------|
| (a) 1 boot, de-icer, Outer Panel, L. H. Goodrich 11-517-8-2 | 17 lbs. (278) |
| (b) 1 boot, de-icer, Outer Panel, R. H. Goodrich 11-517-8-2 | 18 lbs. (278) |
| (c) 1 boot, de-icer, Outer Panel, L. H. Goodrich 11-517-9-1 | 19 lbs. (322) |
| (d) 1 boot, de-icer, Outer Panel, R. H. Goodrich 11-517-9-2 | 19 lbs. (322) |
502. 2 boots, de-icer stabilizer, Goodrich 11-517-10-1 16 lbs. (743)
503. 1 boot, de-icer, Fin, Goodrich 11-517-11-1 9 lbs. (775)
504. Carburetor, windshield, and propeller anti-icing fluid 157 lbs. (139)
in reservoir (23 gals.)

NOTE 1. (a) 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 placard shall be placed on the instrument panel in full view of the pilot:

- (a) "This airplane shall be operated in compliance with the operating limitations specified in the FAA Approved Airplane Flight Manual."

NOTE 3. The data substantiating this specification is applicable only to those C-46 airplanes which have been remanufactured in accordance with FAA Approved L. B. Smith Aircraft Corp. Report AC-20T-100 and which are identified as Model C-46/CW20-T or which have been remanufactured in accordance with FAA Approved L. B. Smith Aircraft Corp. Reports AC-20T- 100 and R-5.000.02 and which are identified as Model Super C-46/CW20-T.

....END....