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CHAMPION AIRCRAFT CORPORATION

REPORT SERVICE LETTER #14

APPROVED BY \_\_\_\_\_

SECTION \_\_\_\_\_

April 22, 1949 (Revised January 20, 1956 to include Supplement #1)  
(Revised January 20, 1960)

SUBJECT: Conversion of a Model 7AC to Model 7DC airplane using a carburetor type engine.

GENERAL: Before starting to convert a Model 7AC to a Model 7DC airplane, it is very important that you refer to a copy of the latest revision of Aircraft Specification No. A-759. A copy is on file at the General Safety District Office for reference.

DESCRIPTION OF CHANGES:

1. Engine Change

- (a) The Continental A-65-8F or A-65-8 engine is replaced with a Continental C-85-8F or C-85-8 carburetor engine.

NEW PARTS REQUIRED

1-2696	Connector - Flex Control	1
1-1786	Spring - Cylinder Head Baffle	1
1-3677	Nipple Assembly	1
2" x 12"	Flexible Alum. Tube	1
1-2755	Baffle - Side Crankcase	2
1-2913	Clamp	1
2-898	Elbow	1
3-629	Baffle Assembly - Engine Left Side	1
3-630	Baffle Assembly - Engine Right Side	1
3-631	Baffle - Cylinder Right Rear	1
4-673	Baffle Assembly - Engine Right Rear	1
4-674	Baffle Assembly - Engine Left Rear	1
4-737-3	Baffle Assembly - Engine Left Front	1
4-739	Baffle Assembly - Engine Right Front	1
4-740	Baffle Assembly - Crankcase Upper	1
4-741	Baffle - Crankcase Lower Left	1
4-742	Baffle - Crankcase Lower Right	1
7-572	Blueprint	1
7-797	Blueprint	1

(It is recommended that the #1-520-3B gascolator bowl be replaced with a #1-2991 quick-drain gascolator bowl which incorporates a 1/8" N.P.T. #CCA 1550 drain valve.)

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PARTS TO BE DISCARDED

AN840-4	Adapter - Hose	1
7-469	Baffle - Left Crankcase	1
7-470	Baffle - Right Crankcase	1
7-471	Baffle - Upper Crankcase	1
7-475	Baffle - Right Rear Cylinder	1
7-476	Baffle - Left Rear Cylinder	1
7-477	Baffle - Right Front Cylinder	1
7-478	Baffle - Left Front Cylinder	1

- (b) Hanlon-Wilson mufflers are required on the converted airplane. (If the airplane is equipped with these mufflers before converting, it is not necessary to obtain the following kit.)

NEW PARTS REQUIRED

Kit 129	Muffler & Heater Installation Complete w/print	1
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PARTS TO BE DISCARDED

7-485	Exhaust Stack - Left	1
7-486	Exhaust Stack - Right	1
3-478	Muff Half	2
3-479	Muff Half	2

2. Fuel Change

The present main fuel tank must be replaced with a modernized new type fuel tank. Note that a hole must be cut in the fuel tank support board to accommodate the sump in the bottom of the new tank.

NEW PARTS REQUIRED

7-778	Tank Assembly - Main Fuel	1
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Also available is an approved 26-gallon fuel system which may be used as an alternate fuel system.

3. Cowling Modification

Re-work nose bowl and cowling in accordance with Service Helps and Hints #26, Alteration #1.

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NEW PARTS REQUIRED

4-732	Lower Firewall Baffle	1
	Service Helps & Hints #26	1

4. Fuselage Frame Modifications

- (a) The addition of one "Clamp-on Dorsal Fin Tube" is required. After installation, the fin assembly should be covered and doped in accordance with FAA Manual No. 18.

NEW PARTS REQUIRED

Kit 178	Dorsal Fin - Clamp-On Type	1
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- (b) The addition of two reinforcement tubes to the front fuselage frame, is required.

NEW PARTS REQUIRED

Kit 164	Tube Assembly - Reinforcement	1
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5. General Changes

- (a) Surface travel of the various control surfaces changes when the conversion is made. The new angular travel may be obtained from Aircraft Specification #A-759. (Angular travel is shown in degrees, for all surfaces, and is the angle that the chord line of the control surface makes with the chord line of the particular fixed surface to which the control surface is attached.)

- (1) The elevator can be adjusted by means of the two elevator stops on the elevator horn.
- (2) The proper elevator trim tab rigging can be accomplished by adjusting the turnbuckles on the trim tab control cables. Those turnbuckles are found just forward of the trim tab.
- (3) The ailerons are adjusted by means of the aileron push rod, which is located on the inboard end of each aileron.
- (4) The correct rudder travel is obtained by filing the rudder stops located on vertical fuselage rudder post.

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- (b) The name plate in the airplane must be re-stamped with the proper model designation and the letters "CONV" indicating it has been converted.

EXAMPLE: Model 7DC "CONV"

Note: Do Not Change Airplane Serial Number

- (c) Any of the following propellers may be used on Model 7DC airplanes.

Sensenich Model 72GK44      McCauley Model CF7144  
Sensenich Model 72GK46      McCauley Model CF7146

If the above listed or other make or pitch wood propellers are used, the propeller installed must meet the diameter and static RPM limits listed for the Model 7DC Under "Propeller Limits" in the Specification A759. (See also Item 1(c) Aircraft Specification A-759).

- (d) The baggage allowance is to be changed from 40 to 50 lbs. (Add Part No. 1-854-4 Baggage Placard.)
- (e) Operating limits of the flight instruments are changed and should be remarked as follows:

Tachometer Red Line @ 2575 RPM  
Airspeed Indicator Red Line @ 135 MPH  
Yellow Line @ 100 MPH

- (f) The following placards must be installed in front of and within clear view of the pilot:

1-2956	Throttle Operation Placard	1
1-1786	Solo Flying Placard	1
1-2954	Maximum Airspeed Placard	1

NOTE: (a) We wish to call your attention to the fact that the gross weight allowance of the Model 7DC is 1300 lbs. or 80 lbs. greater than the Model 7AC or Model 7BCM.

- (b) "All Model 7DC airplanes, however, are approved for operation at a gross weight of 1350 lbs. when 'No-Bounce' Landing Gear oleos, Part No. 3-665, are installed and a placard, Part No. 1-2929, reading 'Intentional Spinning Prohibited when Baggage is Carried' is installed on the instrument panel.

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The C.G. range for the converted airplane at 1300 lbs is:

+16.8 to +20.0 at 1300 lbs  
+10.0 at 1087 lbs or less with a straight line variation between these points.

The C.G. range for the converted airplane for operation at 1350 lbs. gross (see (b) above) is:

+16.8 to 20.4 at 1350 lbs.  
-10.0 at 1087 lbs or less with a straight line variation between these points.

All Champion parts and blueprints, required to make the above conversion, are now available and may be purchased from the Champion dealer in your territory or the factory.

Sincerely,

CHAMPION AIRCRAFT CORPORATION

BD:dmk