



December 20, 1949

M49-17

TO: Aircraft Manufacturers, Continental Approved Service Stations
and Aircraft Operators.

SUBJECT: Camshaft Change.

MODELS AFFECTED: C90-8F, -12F, -8FJ, -12FJ, -14F.

SERIAL NUMBERS AFFECTED: C90-12F - All engines.
C90-8F, -12F, -8FJ, -12FJ Serial Number
42205-9-12 and all higher numbers.

ACCOMPLISH: When camshaft replacement is required at
major overhaul.

CAMSHAFT DESIGN CHANGES

Beginning with the engine serial number listed above, a re-design in camshaft became effective. The cam lobe contour of the camshafts used prior to this change (both cast iron and forged steel types - see our Bulletin M49-2) was such that a 35° valve overlap existed. Because of exhaust and muffling system back pressure this degree of valve overlap could result in some loss of potential power and particularly acceleration because of incomplete cylinder scavenging.

In order to offset the condition induced by this back pressure the cam contour was changed to reduce the valve overlap to 24. The new camshaft design results in better cylinder scavenging and its practical effect is a slight increase in developed power and a very positive improvement in acceleration characteristics. The new camshaft is identified as part no. 531076 for C90-8F and C90-12F carburetor engines and part no. 531146 for fuel injection engines.

CHANGES IN ASSOCIATED PARTS

(1) Because of the difference in cam lobe dimensions, this new camshaft must be used only with cam follower body, part no. 530851 which has a larger diameter contact face and is identical to the C145 follower. The complete tappet assembly is identified by part no. 530850 but actually only the body itself is required since the hydraulic unit and tappet cup are identical and interchangeable with those used in the standard C90 tappet (part no. 21609 hydraulic unit and part no. 25042 tappet cup or socket).



(2) With the new design camshaft it is also imperative that the correct valve spring combination be installed. The correct combination is part no. 24031 inner valve spring, part no. 24029 intermediate valve spring, and part no. 24030 outer valve spring.

(3) Since the change in valve action affects the engine "breathing" and therefore carburetion characteristics, it is also necessary to modify the carburetor jetting. The standard main air bleed is replaced with a number 55 bleed identified as Bendix-Stromberg part no. P-16179 #55. The standard main metering jet is replaced with a number 44 jet identified as Bendix-Stromberg part no. P-7881 #44. After conversion the carburetor is identified as Continental part no. 531126 and the Bendix-Stromberg parts list number appearing on the carburetor name plate should be altered to 391229-1. These carburetor conversion parts are not supplied by Continental Motors Corporation but can be procured from any Bendix-Stromberg Distributor.

Those engines equipped with fuel injectors require no injector alterations in connection with the change to this new camshaft.

INSTALLATION

The modernization described above can be completed without special tooling or equipment, but caution should be exercised to assure proper clearance between the cam follower "foot" and the crankcase. Because of crankcase casting variations, there may not be sufficient clearance for installation of part no. 530851 cam follower due to the larger contact face and it will then become necessary to burr the crankcase at the points of interference to provide a minimum 1/32" clearance for the cam follower "foot". This crankcase reworking can be accomplished with a standard burring tool.

PART NUMBER CHANGES

	<u>First Design Cast Iron Camshaft</u>	<u>Second Design Forged Steel Camshaft</u>	<u>Latest Design Forged Steel Camshaft</u>
* Camshaft	530185	530788	531076
** Camshaft	530427	530977	531146
Tappet Assembly	A21599	530872	530850
(1) Cam Follower	21608	530873	530851
(2) Hydraulic Unit	21609	21609	21609
(3) Tappet Cup	25042	25042	25042

* For C90-8F and C90-12F carburetor engines.

** For C90-8FJ and C90-12FJ fuel injection engines.