1.0 SCOPE AND APPLICATION: Engine Components Inc. (ECi) considers this Service Bulletin to be Mandatory to ensure continued airworthiness for Franklin reciprocating engines with crankshaft and connecting rod bearings with an "AEF prefix and "CH", "DH" and "MG" lot codes.

2.0 BACKGROUND: ECi has been informed of one engine set of replacement bearings for Franklin engines that exhibited abnormal displacement of the overlay during operation. The condition of the bearings as related to ECi indicates that the thin overlay (approximately 0.0007 inches thick) on the inner surface of the bearings partially delaminated.

This Mandatory Service Bulletin alerts you, an owner or operator of a Franklin aircraft piston engine that has been rebuilt between **June 1, 2004** and **January 5, 2005** using bearings with the AEF prefix (except AEF17707, the camshaft journal bearings), or to operators or suppliers that have these bearings in stock, that ECi has determined that a small number of bearings produced and shipped to ECi between June and November of 2004 may have minor defects that cannot be ascertained by visual or microscopic examination. **NOTE**: **ALL AFFECTED BEARINGS ARE MARKED WITH LOT CODES "CH", "DH" or "MG."**

We have determined that this problem is limited, and if it exists in the bearings, will identify itself by small metallic flakes that can be seen in the engine oil filter if one is installed. If no filter is used, then the only way to check for delamination is to drain oil from the sump and check for residue. Testing indicates that even if the overlay is displaced, the bearing will continue to perform its intended function. If, however, the amount of delamination is significant, there is a chance that flow through oil galleys can be compromised, which can lead to crankshaft journal scoring or other operational problems.

3.0 REQUIRED ACTION:

3.1. Determine if any connecting rod or main bearings (with AEF prefix) replacement bearings for Franklin engines have been purchased from ECi since June 1, 2004. The bearings may be further identified by the lot codes "CH", "DH" or "MG" stamped on the back of the bearing halves. The part number, and a Date Code are stamped on the label affixed to the box in which the bearings are packaged. **Note: If the label has a date code of 122004 (December 20, 2004) or later, the bearings are not affected regardless of the lot code.**

3.2. If replacement bearings for Franklin engines have been purchased from ECi since June 1, 2004 and not installed in an engine, and if the bearings are marked with lot (date) codes "**CH**, "**DH**", or "**MG**", and the date code is not **122004** or later, return these bearings to ECi for credit or replacement.

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3.3. If replacement bearings for Franklin engines have been purchased from ECi between **June 1, 2004 and January 5, 2005** and meet the criteria of §3.1 are installed in an engine, the engine oil filter or a sample of the oil from the sump should be carefully checked by examining for excessive metal flakes as detailed in *Lycoming Service Bulletin Number 480D*. Further, if a significant number of flakes are found, check to see if they are magnetic. A nickel layer under the overlay will make the bearing overlay flakes magnetic. If the flakes are not magnetic, then they are from another source.

3.4. If excessive magnetic metallic flakes of silver gray color are found at one of the first three oil changes, then contact your ECi Territory Manager at 1-800-ECI-2FLY (324-2359) for guidance**.**

3.5. If there is no evidence of excessive metallic flakes no further action is required.