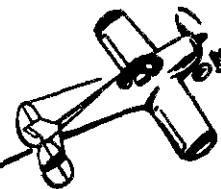


Ercoupe MEMORANDUM

ERCOUPE
SERVICE
MEMORANDUM

No. **63**

SUBJECT: Friction Report in Rudder Control



April 8, 1952

We have had one report of difficulty in the rudder control system of the ERCOUPE in which the shaft of the bellcrank assembly, Part No. 415-52424, froze in the Bakelite bushing, Part No. 415-52404, so that it made the rudder control difficult to operate. The control was so stiff that it was noticed on the control wheel in flight and upon investigation the two parts were found frozen almost rigidly together. This is the only report of such a condition and we, therefore, do not believe that it warrants any mandatory change in the parts. It is desired, however, to disseminate the information so that pilots observing friction in the control system will realize it can rapidly become more serious and, therefore, will investigate such friction.

It is recommended that when the rudder system appears tight, or at any time when the stabilizer is removed from the airplane for other work, that the rudder system bellcrank assembly, Part No. 415-52424, located on the stabilizer main spar, be reworked by removing the bellcrank from the bearing and burnishing the Bakelite bushing in the bearing to $.500 \begin{matrix} + .002 \\ - .000 \end{matrix}$ inches.

Rework the bellcrank assembly, which has been removed, as follows: Drill two No. 30 holes completely through the shaft in the bearing area and at right angles to each other to provide oil feed to the bushing. Carefully burr the outside of these holes. Fit a hardwood plug in the bottom of the shaft and fill the shaft from the top with cotton waste or wicking. Drill the skin above the fitting $\frac{1}{2}$ inch diameter to fit a $\frac{1}{2}$ inch snap button. Reinstall the bellcrank in the bearing and secure. Check bellcrank for proper fit, including end play.

After assembly of the stabilizer to the airplane, the wicking should be thoroughly saturated with engine oil of a grade similar to that used in the ERCOUPE engine. This oil can be added and should be replenished at re-license periods by removing the snap button. The snap button should be replaced after oiling to prevent the entrance of water and dirt.