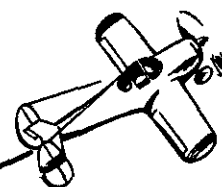


ERCOUPE
SERVICE
MEMORANDUM

No. **46**

Ercoupe MEMORANDUM

SUBJECT: Relubrication of Sealed Bearings



1. The purpose of this memorandum is to give detailed instruction on the relubrication of sealed bearings used in the Ercoupe. It is recommended that all the sealed bearings be relubricated at each airplane overhaul. The lubricant to use is AN-G-15 grease; its properties are the most satisfactory for this purpose.

2. There are two different types of sealed bearings in the Ercoupe: Heim Unibal Spherical Rod End Bearings, and Single Row Ball Bearings. (Heavy Duty Metal Shield Bearing (AN 200) and Intermediate Duty Metal Shield Bearings (AN 201)).

3. Relubrication of the Heim Unibal Spherical Rod End Bearing:

There are 11 Heim Rod End Bearings in the Ercoupe Control System.

These bearings will be found at the following locations:

| Assembly | Assembly Part No. | Heim No. | Erco Bearing No. | No. of Bearings per Airplane |
|---|----------------------|----------|---------------------|---------------------------------|
| Pushrod; aileron to bellcrank | 415-52034 | MD36-14 | 415-52034-2 | 4 |
| Pushrod; ail. cont. mast to bellcrank | 415-52038 | MD36-14 | 415-52038-2 | 4 |
| Pushrod; control column to mast | 415-52036 | MD36-14 | 415-52036-2 | 1 |
| Shaft and column assy.; control | 415-52117 | MD36-14 | 415-52117-18 | 1 |
| Shaft and column assy.; control | 415-52117 | MD36-14S | 415-52117-23 | 1 |

At Serial No. 890, the Heim Bearing used on the control shaft and column assembly for the control column to nose gear pushrod was changed to MD36-14S which has a longer threaded end and is identified as Part No. 415-52117-23, while the control shaft and column assembly bearing for the control column to mast pushrod remains Part No. 415-52117-18. Also at the same time, the pushrod was shortened from 17-3/4" to 17-3/8" and is identified as 415-52035 G. With this in mind, correct replacement of the Heim bearings for the two above pushrods and the control column to nose gear pushrod can be made, if necessary. For relubrication of the above bearings, make Lubrication Adapter as illustrated on page 3, Figure 2.

a. Remove pushrod assembly from airplane.

b. Remove Heim Rod End Bearing from the pushrod by loosening locknut and unscrewing from pushrod.

c. Inspect bearing for any excessive play, wear, or restricted swivel and rotation and replace where necessary.

d. Remove grease retainer plug (Figure 1), if existing.

e. Soak the rod end bearing in hot engine oil (300° to 350°F.), for 5 to 10 minutes.

f. Screw the Lubrication Adapter onto hot rod end bearing (Page 3, Fig. 4).

g. Apply pressure grease gun to adapter fitting and force AN-G-15 Grease through bearing, while still hot, to flush out grit and old grease.

h. After thoroughly cooled, pack rod end bearing with AN-G-15 Grease, using adapter.

i. Press Heim Bearing Grease Retainer Plug (415-52032) into rod end after final packing. (Reference Page 3, Fig. 3.)

j. Reinstall bearing into pushrod assembly.

4. Relubrication of Heavy and Intermediate Duty Metal Shield Bearings:

There are 8 Metal Shield Round Bearings in the Ercope Control System.

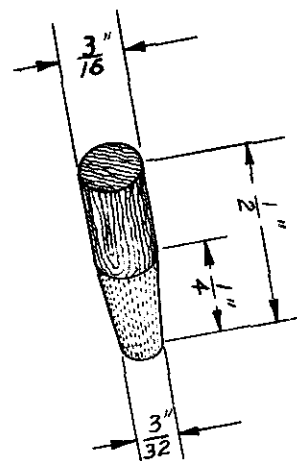
The bearings will be found at the following locations:

| Assembly | Assembly Part No. | AN No. | Erco Bearing No. | No. of Bearings per Airplane |
|------------------------------------|----------------------|------------|---------------------|---------------------------------|
| Control assy.; Ail. outer rib..... | 415-52047 L&R | AN201-K4A | 415-52307-1 | 4 |
| Shaft and column assy..... | 415-52117 | AN200-K4 | 415-52218-3 | 2 |
| Support; control mast..... | 415-52047 | AN201-K10A | 415-52057-2 | 2 |

- a. Remove assemblies from airplane.
- b. Remove bearings from assembly, pressing or tapping out as necessary after removal of retaining parts. Apply pressure to outer race only, never to seal or inner race. The two control column base assembly bearings are staked in place with four center punch marks on each side of casting. The bottom bearing in the control mast support are held in place with a snap ring in the groove under the bearings.
- c. Inspect bearings for any excessive play, wear, or restricted rotation and replace where necessary.
- d. Soak the bearings in hot engine oil (300° to 350°F.) for 5 to 10 minutes.
- e. Insert bearings into Bearing Lubricator and flush with AN-G-15 grease, while hot, to remove grit and old grease. The Alemite Division of the Stewart-Warner Corporation has available a bearing lubricator for relubrication of the above bearings.
- f. Pack bearings with more AN-G-15 grease after thoroughly cooled off.
- g. Install bearings in assembly and reassemble retaining parts.

5. Re-installation of Parts:

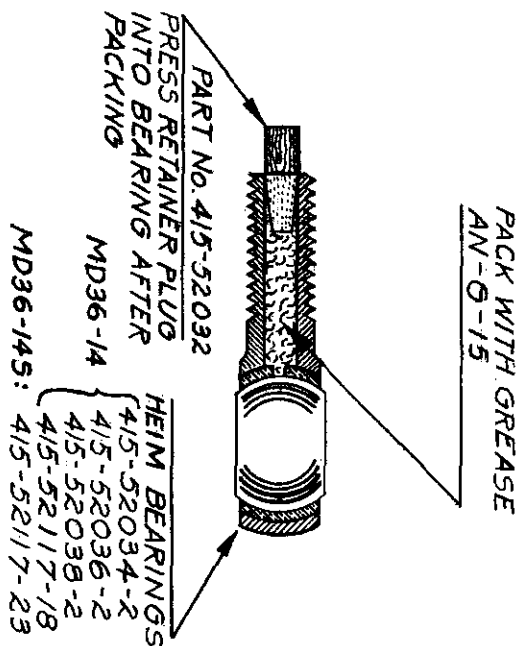
- a. Reinstall component parts and pushrods, as necessary according to the overhaul procedure being used. Rig ship according to Service Memorandum No. 35.



PART No. 415-52032

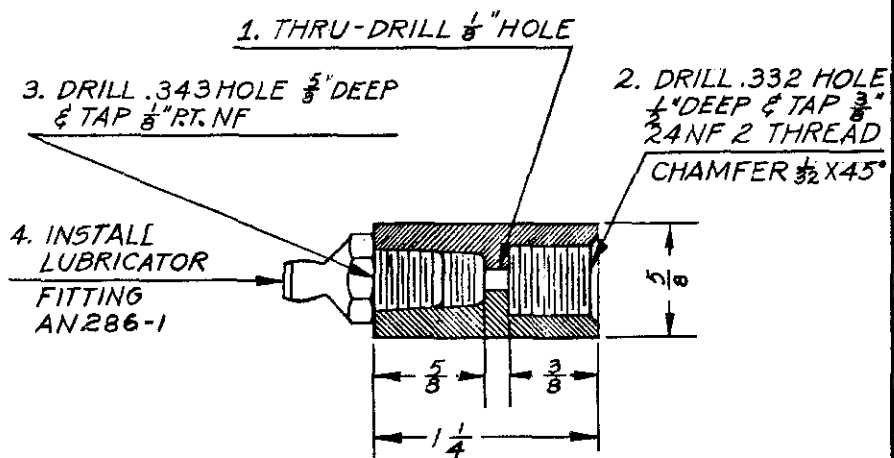
HEIM BEARING, GREASE RETAINER
PLUG

MATERIAL: BIRCH DOWEL $\frac{3}{16} \times \frac{1}{2}$
FIG. 1



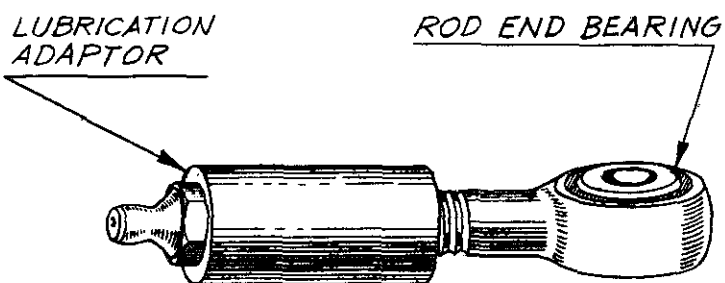
RETAINER PLUG
Pressed into end of bearing to seal.

FIG. 3



LUBRICATION ADAPTOR
(FOR PACKING HEIM SEALED ROD END BEARINGS)

MATERIAL $\frac{5}{8}$ ROUND, STEEL
FIG. 2



LUBRICATION ADAPTOR
Installed, for packing rod end bearings.

FIG. 4