

145 and 165 HF.

## WARNER ENGINES, PROBLEMS AND SOLUTIONS

BY DICK MARTIN

- Hard Starting:** Condensers are sometimes overheated, check to make sure the magnetos are adequately ventilated. If the magnetos are retarded too far for starting the engine will not start.
- High oil temperature:** This is usually caused by worn main or rod bearings. If you have to use an oil cooler on a Warner (except in the tropics) something is wrong.
- Bearings:** Ball bearings on the crankshaft must be fit at least .001 tight and at least .0015 to .002 tight in the crankcase. If the retaining nut at the front and rear of the crankshaft are not tightened properly, the bearings will come loose and ruin the crankshaft. Use a WRENCH not a drift pin and hammer!  
.004 undersize main bearings from a 185 engine will work on the 145 and the 165.
- Gears:** If the engine was run with any generator other than the Eclipse type 308 or 309, check the generator drive gear and all the accessory drive gears for cracks. The Eclipse generator has a cushion built in the drive. Without it the accessory gears will usually crack.
- Push rods:** On the 145 engine replace the graphite packings in the cam follower guides with "O" rings. Lubricate the push rods and rocker arms with any of the new high temperature greases designed for 400 plus degrees. You will eliminate most of the leakage around the cylinder heads, also the rocker arm bearings and the valves will last longer.
- Cylinders:** Warner engines do not usually have excessive cylinder wear, however pitting and corrosion on the top 3 cylinders from inactivity or infrequent operation is a common problem. Cylinders can be bored .010 to .020 oversize. Recently many people have been chroming the cylinders and using automotive type ring with good success. Any company who can chrome Pratt and Whitney R-985 cylinders can do the Warner cylinders. Removing the cylinder heads from the cylinder barrel for chroming and valve guide and seat replacement is simple if you do it right. The secret is to heat the cylinder and head to 450 to 500 degrees for a minimum of one hour in an oven. (do not use an acetylene torch).