

Subject: Propeller Mounting Bolts

Effectivity: Hartzell HC-82XG Series Propeller Installed on Lycoming O-320 and early O-340 Engines.

Discussion: There are six 3/8 diameter bolts used to fasten the HC-82XG series propellers to the O-320 and early O-340 engines. Over the past several years, a number of these bolts have broken due to fatigue and in several cases, the failures progressed to at least 3 bolts which allowed the propeller to separate from the engine. As a consequence of this condition, Bulletin 41 was issued in 1957, requiring that these bolts be checked for torque each 100 hours.

Since about a year ago, the O-340 engines have been fitted with 7/16 diameter bolts and Lycoming Bulletin No. 253 requires retrofitting early engines using Hartzell propellers. It now appears that this program should be enlarged to include the O-320 engines.

Action Required

At owner's discretion, but not later than at engine-propeller overhaul, change the present 3/8 diameter bolts to 7/16 inch bolts. This will require changing the bushings in the engine flange per Bulletin No. 253A being issued by the Lycoming Company.

Proceed as follows:

1. Remove the propeller from engine.
2. Disassemble propeller.
3. Drill or ream out the two holes in the propeller mounting flange, which are behind the blade arms, increasing the diameter from the present 25/64 to 29/64. Do nothing to the 9/16 diameter counterbore.
4. Before reassembling the propeller, install two special bolts, Part No. A-987 in the 29/64 holes, with the heads fitting into the counterbore, except for dash 6 and dash 6L propeller. For these, install A-943-1 bolts.

5. For the feathering propellers (-2B), which are installed with four AN76-12 bolts and A-898 washers in addition to the two A-954 screws:
 - (a) Modify the A-898 washers by enlarging the hole from 3/8 to 7/16. The part then becomes A-898-2.
 - (b) Modify the B-933 plastic shim by enlarging the two 3/8 holes to 7/16. The part then becomes B-933-1.
 - (c) Install the propeller with four A-988 bolts, four A-898-2 washers, two A-987 bolts and the B-933-1 plastic shim.
6. For non-feathering propellers (-1D, -6D, -6DL), which are installed with four A-943 bolts without washers, in addition to the two A-954 bolts:
 - (a) Modify the B-933 plastic shim by enlarging the two 3/8 holes to 7/16. The part then becomes B-933-1.
 - (b) Install the propeller with four A-943-1 bolts, two A-987 bolts, and the B-933-1 plastic shim.
7. For non-feathering propellers (-6, -6L), which are installed with six A-943 bolts:
 - (a) Modify the B-933 plastic shim by enlarging the two 3/8 bolts to 7/16. The part then becomes B-933-1.
 - (b) Install the propeller with six A-943-1 bolts and the B-933-1 shim.
8. Torque the bolts to 40 ft..lb. (480 in. lb.)
9. Restamp the propeller model from HC-82XG-() to HC-82XL-().
10. Compliance with this bulletin cancels Bulletin 41.