

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

Airworthiness Directive

77-12-06 HARTZELL PROPELLERS: Amendment 39-2922 as amended by Amendment 39-3018 is further amended by Amendment 39-3097.

Applies to the Model ()HC-() ()Y() compact series constant speed or feathering propellers with Hartzell manufactured "Y" shank blades, used on but not limited to Aero Commander 200B and 200D, Aerostar 600, Beech 24, 35, 36, 45, 55, 56TC, 58, 60, and 95, Bellanca 14 and 17 series, Britten Norman BN-2, BN-2A, and BN-2A-6, Cessna 182 and 188, Embraer EMB-200A, Maule M5, Mooney M20 and M22, Piper PA-23, PA-24, PA-28, PA-30, PA-31, PA-32, PA-34, PA-36, and PA-39, Pitts S-1T and S-2A, Siai Marchetti S-208, and Rockwell 112, 114, 200, 500, and 685 series aircraft.

NOTE: Parentheses preceding or following hub or blade model designations are used herein to accommodate variations of those models. A parenthesis can indicate either the presence or absence of additional letters or numbers.

Compliance required as indicated for both initial and repetitive procedures unless already accomplished.

To detect blade shank cracks and prevent possible blade failure, accomplish the following:

GENERAL

Propellers with all blades serial D47534 or above, or with all blades identified with the letters "PR" or "R" ink-stamped on the camber side and "SP" and "RD" metal stamped on the blade butt, or with all blades model F7666A-()P are considered to be in compliance with the initial inspection and rework requirements only of this AD where specified by reference to Hartzell Bulletin 118A dated February 15, 1977.

(a) **Models ()HC-() ()Y() Compact Series "Y" Shank Propellers.**

(1) All propellers not specified in paragraph (b), (c), or (d) of this AD, remove, inspect and rework or replace if necessary in accordance with Hartzell Bulletin 118A dated February 15, 1977, or later FAA approved revision(s) prior to accumulating those time intervals (hours or years, whichever occurs first) since new or last complete overhaul specified in Hartzell Service Letter 61B (Overhaul Periods for Hartzell Propellers) dated September 10, 1976, or later FAA approved revision(s). If such time intervals have been exceeded or are unknown, compliance is required within the next 500 hours after June 24, 1977, or prior to June 24, 1979, whichever occurs first. Reinspect and, if necessary, rework in accordance with Hartzell Bulletin 118A at intervals specified in Hartzell Service Letter 61B, or later FAA approved revision(s).

(2) Propellers subjected to momentary overspeed greater than 10 percent above rated r.p.m. or continuous overspeed totaling one hour or more at greater than 5 percent above rated r.p.m.; remove, inspect and rework, or replace if necessary in accordance with Hartzell Bulletin 118A before further flight.

(3) Propellers subjected to ground or object strike; remove, inspect and rework, or replace if necessary in accordance with Hartzell Bulletin 118A before further flight.

(b) **Propeller Model HC-E2YR-2() () ()C8475-()** Propeller Models HC-E2YR-2() () ()C8475-() installed on Piper PA-31 series aircraft; remove, inspect and rework, or replace if necessary in accordance with Hartzell Bulletin 118A within the next 50 hours in service after June 24, 1977. Reinspect and, if necessary, rework in accordance with Hartzell Bulletin 118A at intervals specified in Hartzell Service Letter 61B, or later FAA approved revision(s).

(c) Propeller Models ()HC-C2YK-()()/()()7666A-() Installed on Undampered Lycoming O-360 or IO-360 Series Only.

NOTE: Models carrying "-G" hub suffix designation are excluded from this paragraph and covered by paragraph (a).

(1) Propellers which have not been inspected and reworked as specified by AD 75-07-05, installed on, but not limited to Pitts S-2A, Piper PA28-180 (STC SA2213WE), PA28R-180, PA28R-200, and Mooney M20() series aircraft; remove, inspect and rework or replace if necessary in accordance with Hartzell Bulletin 118A within the next 100 hours after June 24, 1977, or by June 24, 1978, whichever occurs first. Reinspect and, if necessary, rework in accordance with Hartzell Bulletin 118A at intervals specified in Hartzell Service Letter 61B, or later FAA approved revision(s).

(2) (i) As of June 24, 1977, propellers with less than 500 hours time in service since last inspection and rework in accordance with AD 75-07-05, remove, inspect, and rework, or replace if necessary in accordance with Hartzell Bulletin 118A or later FAA approved revision(s) prior to the accumulation of 600 hours time in service since last compliance with AD 75-07-05 or by June 24, 1979, whichever occurs first.

(ii) As of June 24, 1977, propellers with 500 or more hours in service, or whose time in service is unknown since last inspection and rework in accordance with AD 75-07-05, remove, inspect, and rework, or replace if necessary in accordance with Hartzell Bulletin 118A or later FAA approved revision(s) within the next 100 hours or by June 24, 1978, whichever occurs first.

(iii) Reinspect and if necessary rework propellers cited under preceding paragraphs (c)(2)(i) and (c)(2)(ii) in accordance with Hartzell Service Letter 61B, or later FAA approved revision(s).

(3) Propellers installed on aircraft with (undampered) 200 h.p. Lycoming IO-360 series engines, including but not limited to Mooney M20E and F and Piper PA-28R-200 type normal category aircraft and Pitts S-1T and S-2A acrobatic aircraft, accomplish the following within the next 100 hours time in service after June 24, 1977:

(i) Remove the present propeller vibration placard, if installed, and on the instrument panel near the engine tachometer affix a new placard and revise the tachometer markings as follows:

(A) Placard for normal category aircraft:

"Avoid continuous operation:

Between 2000 and 2350 r.p.m.

Above 2600 r.p.m. in full throttle level flight."

(B) Placard for utility and acrobatic aircraft:

"Avoid continuous operation:

Between 2000 and 2350 r.p.m.

Above 2600 r.p.m. in acrobatic and full throttle level flight."

(C) Remark the engine tachometer face or bezel with a red arc for each restricted engine speed range, i.e., between 2000 and 2350 r.p.m. and between 2600 and 2700 r.p.m. (red line).

(ii) Upon compliance with paragraph (c)(1) or (c)(2) above, the restrictions against operation above 2600 r.p.m. in full throttle level flight only may be removed and the placards and tachometer markings revised as follows:

(A) Placard for normal category aircraft:

"Avoid continuous operation:

Between 2000 and 2350 r.p.m."

(B) Placard for utility and acrobatic aircraft:

"Avoid continuous operation:

Between 2000 and 2350 r.p.m.

Above 2600 r.p.m. in acrobatic flight."

(C) Tachometer marking for normal category aircraft:

Red arc between 2000 and 2350 r.p.m.

(D) Tachometer marking for utility and acrobatic aircraft: No change; same as (i)(C) above.

(d) **Propeller Models ()HC-C2YK-()/() ()8475(-) or ()8477(-).**

(1) Propellers installed on, but not limited to Piper PA-32-260, PA-32-300 and Siai Marchetti 208, which have not been inspected and reworked as specified in AD 74-15-02, accomplish the following within the next 50 hours in service after June 24, 1977:

(i) Remove propeller from aircraft, modify pitch change mechanism and replace blades with equivalent model blades prefixed with letter "F" in accordance with Hartzell Service Letter 69 revised November 30, 1971 and Bulletin 101D dated December 19, 1974, or later FAA approved revision(s).

(ii) Inspect and repair or replace if necessary, in accordance with Hartzell Bulletin 118A. Reinspect and, if necessary rework in accordance with Hartzell Bulletin 118A at intervals specified in Service Letter 61B, or later FAA approved revision(s).

(2) (i) Propeller Models ()HC-C2YK()/()/F()8475(-) or F()8477(-) used on but not limited to Aero Commander 200B and 200D, Mooney M22, Britten-Norman BN-2, BN-2A, and BN-2A-6, Bellanca 17-31, Embraer EMB-200A, Piper PA-32-260 and PA-32-300 and Siai Marchetti S-208 series aircraft with less than 1000 hours total time in service as of June 24, 1977, remove, inspect and rework or replace if necessary in accordance with Hartzell Bulletin 118A or later FAA approved revision(s) prior to the accumulation of 1300 hours or by June 24, 1978, whichever occurs first.

(2) (ii) Propeller Models ()HC-C2YK()/()/F()8475(-) or F()8477(-) with 1000 or more hours total time in service, or whose time in service is unknown as of June 24, 1977, remove, inspect and rework, or replace if necessary in accordance with Hartzell Bulletin 118A or later FAA approved revision(s) within the next 300 hours after June 24, 1977, or by June 24, 1978, whichever occurs first.

(2) (iii) Reinspect and if necessary rework propellers under preceding paragraphs (d)(2)(i) and (d)(2)(ii) in accordance with Hartzell Service Letter 61B, or later FAA approved revision(s).

Upon request of the operator, a FAA Maintenance Inspector, subject to approval of the Chief, Engineering and Manufacturing Branch, Great Lakes Region, may adjust the repetitive inspection intervals specified in this AD if the request contains satisfactory substantiating data to justify the adjustment for that operator.

The manufacturer's specifications and procedures identified in this directive are incorporated herein and made part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by the directive who have not already received these documents from the manufacturer, may obtain copies upon request to Hartzell Propeller, Inc., 350 Washington Avenue, Piqua, Ohio 45356. These documents may also be examined at the Great Lakes Regional Office, 2300 East Devon Avenue, Des Plaines, Illinois 60018, and at FAA Headquarters, 800 Independence Avenue, S.W., Washington, D.C. 20591. A historical file on this airworthiness directive which includes incorporated material in full is maintained by the FAA at its headquarters in Washington, D.C., and the Great Lakes Region.

This supersedes Amendment 39-1049 (35 F.R. 12325), AD 70-16-03, as amended by Amendment 39-1341; Amendment 39-1637 (38 F.R. 12325), AD 73-10-03; Amendment 39-1896 (39 F.R. 25644), AD 74-15-02; and Amendment 39-2136 (49 F.R. 12772), AD 75-07-05, as amended by Amendment 39-2216.

Amendment 39-2922 became effective June 24, 1977.

Amendment 39-3018 became effective August 26, 1977.

This amendment 39-3097 becomes effective December 21, 1977, and was effective for all recipients of the airmail letter dated November 10, 1977, upon receipt thereof.

SUPERSEDED