AD 75-22-14 Propeller Air Dome Pressure

Effective Date: January 1, 1975

75-22-14 PIPER: Amendment 39-2394. Applies to Model PA-31P aircraft equipped with Hartzell Model HC-C3YN-2L or HC-C3YN-2LF propellers, certificated in all categories. Compliance required as indicated unless already accomplished. In order to prevent propeller overspeeding and loss of feathering capability due to low propeller air dome pressure, accomplish the following:

1. Within 10 hours tim in service after the effective date of this AD, incorporate the following temporary instructions into the PA-31P FAA approved Airplane Flight Manual as indicated.

Section III A8 Normal Operating Procedures, Engine Run-up

f. Check feathering at 1000 plus or minus 20 RPM. Observe positive feathering action as evidenced by a 300 RPM drop within approximately 5 seconds. If propeller air charge is low or zero, feathering check will be sluggish or slow and no further flight shall be attempted. Refer to applicable airplane and propeller service manuals for corrective action.

Section III C18 Emergency Procedures - Propeller Overspeed In-Flight

a. Symptoms:

(1.) RPM control may be sluggish, particularly in the direction of reducing RPM.

(2.) Slight overspeed or poor synchronization at the upper end of the cruising speed range.

b. Corrective Action:

(1.) Control Prop overspeed by immediately reducing airspeed to approximately 135 MPH by nosing-up slightly with a simultaneous slow throttle reduction to 20-25" manifold pressure. Do not allow airspeed to fall below best single engine rate of climb speed.

Reduction of prop speed can be assisted with prop control in the “feather detent” position. Therefore, if overspeed is above the red line (2133 RPM), select feather until prop speed drops below red line, then move control out of feather position.

(2.) Set propeller control to desired speed, preferably 2000 RPM or less to provide a margin below red line RPM for further surges with power/airspeed changes.

(3.) Slowly add throttle to regain power without overspeeding the propeller. Once proper RPM is recovered, hold airspeed well below that at which the overspeed occurred, preferably below 150 MPH. Use landing gear and/or flaps to increase drag for descent and maintain a manifold pressure of at least “20”. Once control of propeller speed is regained, flight can be continued at reduced airspeed. With slow throttle changes at reduced airspeed, the engine will provide climb power without overspeeding. CAUTION

Do not shut down the engine in flight since the propeller will not feather without air charge; and high drag will result from the windmilling propeller. If inadvertently shut down, the engine should be restarted carefully with low RPM setting and closed throttle; airspeed should be slightly above best single engine rate of climb speed to minimize RPM surge upon starting.

2. Within 30 days after the effective date of this AD, replace the subject propellers with Hartzell Model HC-C3YN-2LU or HC-C3YN-2LUF as applicable.

NOTE: Hartzell propeller Models HC-C3YN-2L and HC-3YN-2LF may be converted to Models HC-C3YN-2LU an HC-C3YN-2LUF, which incorporate feathering springs in accordance with Hartzell Service Instruction No. 102.

3. Upon installation of feathering spring propellers per paragraph 2 above, the temporary AFM instructions specified in paragraph 1 above are no longer required.

4. Aircraft may be flown to a base where the maintenance required by this Airworthiness Directive is to be performed per FAR's 21.197 and 21.199. Piper Service Bulletin No. 458 and Hartzell Service Bulletin No. 111 also pertain to this subject.

The manufacturer's specifications and procedures identified and described in this directive are incorporated herein and made a part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by this directive who have not already received these documents from the manufacturer, may obtain copies upon request to Piper Aircraft Corporation, Service Department, Lock Haven, Penn. 17745. These documents may also be examined at the Engineering and Manufacturing Branch, Federal Aviation Administration, Eastern Region, Federal Building, John F. Kennedy International Airport, Jamaica, New York 11430. A historical file on this AD which includes the incorporated material in full is maintained by the FAA at its Eastern Region Headquarters.

This amendment is effective October 24, 1975.