



SERVICE BULLETIN

No. 458

Piper Aircraft Corporation

Lock Haven, Pennsylvania, U.S.A.

"FAA DOA EA-1 Approved"

April 11, 1975

Subject: Aircraft Operating Advisory: Propeller Air-Charge Loss

Models Affected: PA-31P Navajo
Serial Numbers Affected: 31P-1 and up.

Compliance Time: Pilot information: Effective upon receipt.

Purpose: There have been two accidents involving the above referenced aircraft where loss of air pressure in the propeller domes may have contributed to a propeller overspeed condition.

Via letter to field affiliates and affected aircraft owners, Piper distributed Hartzell Propeller, Inc. Service Instruction No. 99 dated August 29, 1974 which outlines pre-flight checks and describes in-flight symptoms to detect loss of or reduction in propeller air pressure. Recommendations for handling in-flight prop overspeed conditions - if encountered - were also covered.

The intent of this service release is to bring the above described condition to the specific attention of the operator of the above aircraft in order that prop overspeed conditions resulting from propeller air-charge loss may be prevented by detection at the earliest possible time. The attached information, entitled "Aircraft Operating Advisory: Propeller Air-Charge Loss (PA-31P)" is in a temporary form, to be inserted in the PA-31P Pilot's Operating Manual "Operating Tips" section. A formal revision to the Pilot's Operating Manual will be issued in the near future encompassing the subject of this release.

Instructions: Insert attached "Aircraft Operating Advisory: Propeller Air Charge Loss" in Pilot's Operating Manual "Operating Tips" section.

Material Required: "Aircraft Operating Advisory", etc., attached.

Availability of Parts: Not applicable.

Effectivity Date: This Service Bulletin is effective upon receipt.

(Over)

Summary:

Compliance with this service release may be achieved by the owner/operator of affected aircraft by inserting the attached Aircraft Operating Advisory in the respective Pilot's Operating Manual, and adhering to the contents specified therein.

AIRCRAFT OPERATING ADVISORY: PROPELLER AIR CHARGE LOSS PA-31P

The purpose of these instructions is to advise pilots of indications of reduction or loss of air in propellers. Since the operation of the propeller can be affected by any loss of air charge, recommended pressures must be maintained at all times.

PRE-FLIGHT

- (1.) If the air charge is lost, or low, the pilot will notice that the "feathering check" will be sluggish or slow.
- (2.) Refer to Propeller Service Manual for corrective action before further flight.

IN-FLIGHT

(1.) Symptoms:

- (a.) RPM control may be sluggish, particularly in the direction of reducing RPM.
- (b.) Slight overspeed or poor synchronization at the upper end of the cruising speed range.

(2.) Corrective Action:

- (a.) 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 will be most rapid 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.

- (b.) 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.
- (c.) 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.