



Piper Aircraft Corporation
Vero Beach, Florida, U.S.A.

SERVICE No. 927 BULLETIN

* PIPER CONSIDERS *
* COMPLIANCE MANDATORY *

Date December 4, 1989 S/M

SUBJECT:

Hartzell Service Bulletin No. 164,
Inspection for Cracks in Certain
Two Blade "Y" Shank Aluminum
Propeller Hubs

MODELS AFFECTED:

PA-31-300 Navajo
PA-32-300 Cherokee Six

PA-32S-300 Cherokee Six Seaplane

PA-32R-300 Lance
PA-32RT-300 Lance II
PA-32RT-300T Turbo Lance II
PA-32-301 Saratoga
PA-32-301T Turbo Saratoga
PA-32R-301 Saratoga SP
PA-32R-301T Turbo Saratoga SP

SERIAL NUMBERS AFFECTED:

31-228 through 31-483
32-15 and 32-21,
32-40000 through 32-40974,
32-7140001 through 32-7940290
32S-40001 through 32S-40974,
32S-7140001 through 32S-7240137
32R-7680001 through 32R-7880068
32R-7885001 through 32R-7985105
32R-7887001 through 32R-7987126
32-8006001 through 32-8206018
32-8024001 through 32-8124036
32R-8013001 through 32R-8113123
32R-8029001 through 32R-8129114

COMPLIANCE TIME: As specified on the attached Hartzell Propeller
Incorporated Service Bulletin No. 164.

PURPOSE: To assure the distribution of Hartzell Propeller
Incorporated Service Bulletin No. 164, which alerts Owner/Operators and Piper
Field Service Facilities of the possibility of cracks developing in certain
Hartzell two blade aluminum propeller hubs. These cracks, if not detected, may
lead to loss of propeller blade(s).

APPROVAL: Not applicable.

INSTRUCTIONS:

1. Read Hartzell Service Bulletin No. 164 (Attachment "A") carefully to
determine scope and specific details. COMPLY WITH HARTZELL'S SERVICE
BULLETIN.

NOTE:

The aircraft affected by Service Bulletin No. 927, reflect only propellers
as originally installed at the factory and do not reflect those propellers
that may have been installed as service replacements in the field. Be
certain to check your aircraft per the Hartzell Service Bulletin No. 164 to
ascertain that your model and serial number propeller is affected by the
Hartzell Bulletin.

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INSTRUCTIONS CONT'D:

2. Make an appropriate logbook entry of compliance with this Service Bulletin upon initial compliance of Hartzell Service Bulletin No. 164.

MATERIAL REQUIRED: As stated in Hartzell Propeller Incorporated Service Bulletin No. 164.

AVAILABILITY OF PARTS: Your Hartzell Propeller Distributor or your local Piper Field Service Facility.

EFFECTIVITY DATE: This Service Bulletin is effective upon receipt.

SUMMARY: Please contact your Piper Field Service Facility to make arrangements for compliance with this Service Bulletin in accordance with the compliance time indicated.

There is no Factory participation applicable to this Service Bulletin.

NOTE: If you are no longer in possession of this aircraft, please forward this information to the present owner/operator and notify the Factory of address/ownership corrections. Changes should include aircraft model, serial number, current owner's name and address.

Corrections/Changes should be directed to:

Piper Aircraft Corporation
Attn: Customer Service
P. O. Box 1328
Vero Beach, Florida 32961-1328

HARTZELL PROPELLER INC.

One Propeller Place

Piqua, Ohio 45356-2634 U.S.A.

Telephone: 513.778.4200

Telex: 4332032

Fax: 513.778.4391

HARTZELL**SERVICE BULLETIN**SERVICE BULLETIN 164
CODE: C

FAA Approved

October 3, 1989

SUBJECT:**Inspection for Cracks in Certain Two Blade "Y" Shank Aluminum Hubs
EFFECTIVITY:**

HC-()2Y()-() propellers with the model designations and serial number range listed below AND:
installed on acrobatic aircraft or;
installed on any aircraft with Lycoming (T)IO-540 Series engine rated at 300 HP and 2700 RPM or higher.

Propeller Serial Number Range:**Basic Hub Model**

HC-C2YK-1B() or HC-C2YR-1B()

HC-C2YK-2() or HC-C2YR-2()

HC-C2YK-4() or HC-C2YR-4()

HC-E2YK-1B() or HC-E2YR-1B()

Propeller Serial Number Range

CH19835 through CH26050

AU4322 through AU7032

all

DK1018 through DK1685

Aircraft Models: The above propellers are installed on, but not limited to:

Bellanca 8KCAB and 17-31A

Britten Norman Islander BN-2A-2, BN-2A-3, BN-2A-20, BN-2A-21

British Aerospace Bulldog B125 (formerly Scottish Aviation)

Christen Pitts S-1T, S-2, S-2A, S-2S, S-2B

Great Lakes 2T-1A-1, 2T-1A-2

Moravan Zlin 526L

Piper Cherokee Six, Saratoga, Lance PA-32(R,T)-300(T),

PA-32S-300, PA-32(R)-301(T)

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NOTE: This Bulletin is applicable **ONLY** to propellers that are listed in hub model/serial number list **AND** are also installed on acrobatic aircraft (regardless of engine type) or any aircraft with Lycoming (T)IO-540 series at 300 HP/2700 RPM or higher). There are a number of homebuilt/experimental/acrobatic aircraft models not listed. The aircraft models listed above show only known certificated aircraft.

DISCUSSION:

There have been incidents of hub cracks in Hartzell two blade "compact" aluminum hub propellers. In nearly every case, blade separation did not occur due to timely inspection (sometimes associated with reports of abnormal vibration).

Cracks typically initiate at the same point on the hub. The cracks are external and believed to be observable with careful visual examination. The cracks originate at a point adjacent to the blade called the "fillet radius". As the cracks propagate toward the center of the hub, their progression accelerates and results in failure of one hub half which can then, potentially, progress to blade separation.

COMPLIANCE:

Inspection is required within the next 25 hours of operation from the effective date of this Bulletin, and thereafter at intervals not to exceed 50 hours of operation from the last inspection.

NOTE: A hub modification is currently in development which will involve rework of the fillet radius. When available, this procedure is intended to eliminate the repetitive inspection requirements of this bulletin.

PROCEDURE:

The following procedure may be accomplished by either a certificated aircraft mechanic or propeller repair station.

1. Remove spinner dome.
2. If present, remove any paint*, grease or other matter which may hinder visual examination.
3. Use 10X magnifying glass to perform careful visual inspection for hairline cracks in the fillet radius area as shown in Figure 1.

NOTE: Typically, cracks begin at the outermost point and propagate inboard to a point where the crack divides and progresses in two directions around the blade arm barrel. Cracks typically initiate on the forward hub half (opposite side from the engine flange) in the fillet radius closest to the blade leading edge.

4. If no cracks are found, re-install spinner dome and make logbook entry indicating compliance.
5. If there are any indications of a crack, hub replacement (by an approved propeller repair station) must be accomplished prior to further flight.

* If paint removal is required, chemical stripper must be used carefully to prevent it from accumulating in the cavity between the hub and blade. Before returning to service, the exposed area of the aluminum hub must have either an anodized surface or be protected with approved chemical film treatment such as Alodine. Also, the area to be inspected should remain unpainted to allow future inspection (approved deviation from Hartzell Service Instruction 144F).

PUBLICATIONS AFFECTED:

This bulletin is now considered part of Hartzell Manuals 113B and 117D.

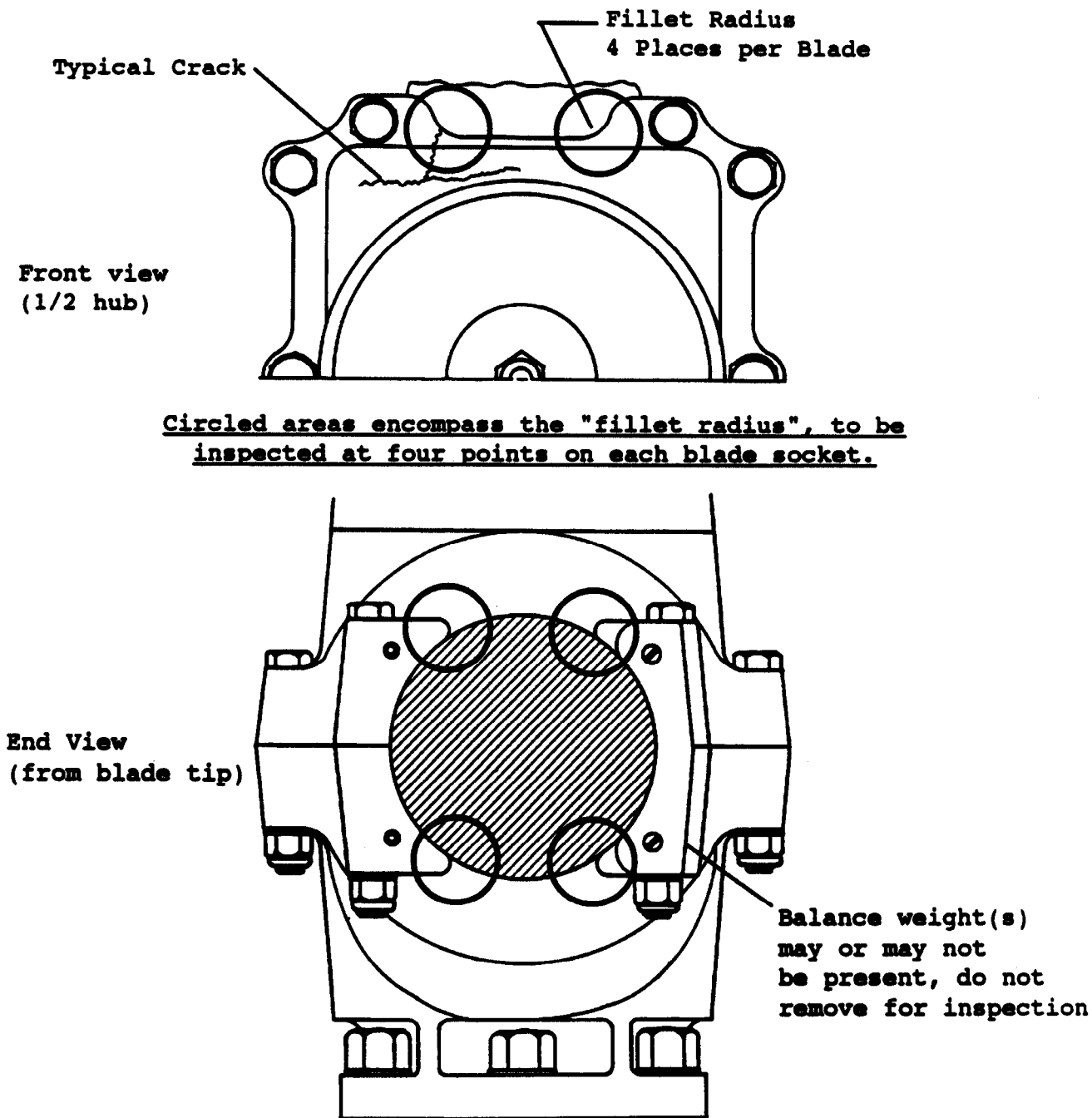


Figure 1. Hub Fillet Radius