



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

# SERVICE No. 927 BULLETIN

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\* PIPER CONSIDERS \*  
\* COMPLIANCE MANDATORY \*  
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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: SERIAL NUMBERS AFFECTED:

PA-31-300 Navajo	31-228 through 31-483
PA-32-300 Cherokee Six	32-15 and 32-21, 32-40000 through 32-40974, 32-7140001 through 32-7940290
PA-32S-300 Cherokee Six Seaplane	32S-40001 through 32S-40974, 32S-7140001 through 32S-7240137
PA-32R-300 Lance	32R-7680001 through 32R-7880068
PA-32RT-300 Lance II	32R-7885001 through 32R-7985105
PA-32RT-300T Turbo Lance II	32R-7887001 through 32R-7987126
PA-32-301 Saratoga	32-8006001 through 32-8206018
PA-32-301T Turbo Saratoga	32-8024001 through 32-8124036
PA-32R-301 Saratoga SP	32R-8013001 through 32R-8113123
PA-32R-301T Turbo Saratoga SP	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.

(OVER)  
ATA: 6113

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-(  
 numbe  
 in:  
 in:

serial

**OBSOLETE**

engine

**Superseded by HC-SB-61-227****See AD 2001-23-08**PropellerBase

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HC-E2YK-1B( ) or HC-E2YR-1B( ) DK1018 through DK1685

Range  
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**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)  
 SOCATA TB30

**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.

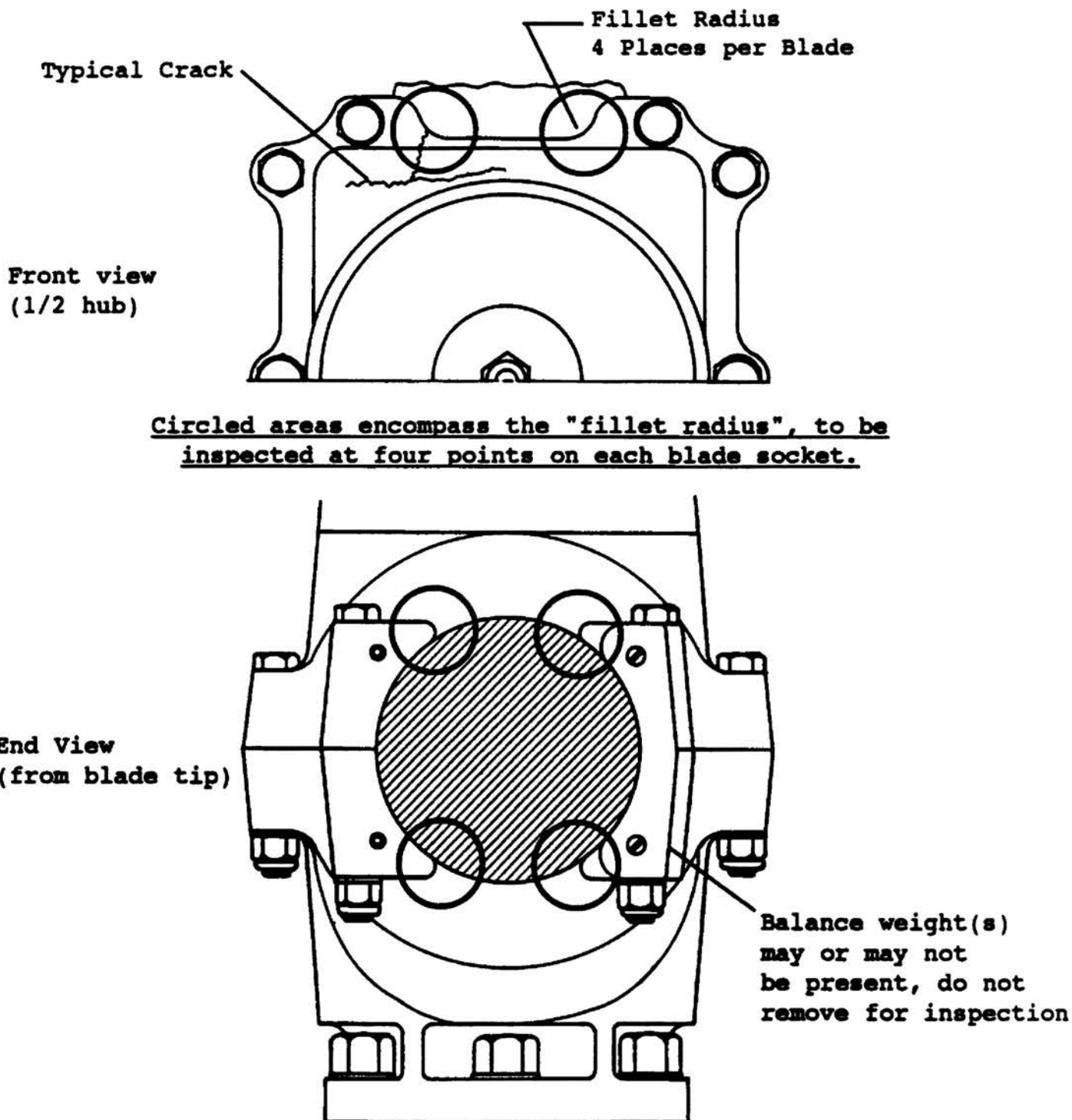
4. If no cracks are found, re-install spinner dome and make logbook entry indicating compliance.

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.



Circled areas encompass the "fillet radius", to be inspected at four points on each blade socket.

**Figure 1. Hub Fillet Radius**