



PILATUS AIRCRAFT LTD. CH-6371 STANS, SWITZERLAND

# SERVICE LETTER

**SUBJECT: HARTZELL PROPELLER SERVICE BULLETIN HC-SB-61-215, REV.3  
(PROPELLER - NEW PITCH CHANGE ROD)**

All Operators:

Date: July 23/97

This service letter draws the attention of customers to Vendor information that provides full details on the above topics as follows:

APPENDIX A - Hartzell Propeller Service Bulletin HC-SB-61-215, Revision 3.

We advise all customers to comply fully with the recommendations contained in this document.

**NOTE:** This information is applicable for all PC-12 propeller installations prior to Serial No. HJ536.

Firstly, contact the Vendor for any specific inquiries concerning the subject matter.

If you have difficulty, make inquiries at the following address:

PILATUS AIRCRAFT LTD.  
CUSTOMER LIAISON MANAGER,  
CH-6371 STANS,  
SWITZERLAND.

Tel: +41 41 619 6509

Fax: +41 41 610 3351

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**Appendix A to Pilatus Service Letter No. 016**

(Hartzell Service Bulletin No. HC-SB-61-215, Rev. 3, Dated May 9/97  
Propeller - New Pitch Change Rods)

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# HARTZELL PROPELLER INC.

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## Propellers

### Propeller - New Pitch Change Rods

#### 1. Planning Information

##### A. Effectivity.

Propellers which use either D494, D6071, or D6114 Pitch Change Rods are affected by this Bulletin. This includes the following applications for 3 & 4 blade, aluminum hub, "lightweight", turbine engine propellers manufactured prior to December 1995 (indicated by serial number effectivity):

<u>AIRCRAFT MODEL</u>	<u>TC/STC #</u>	<u>MODIFIER</u>	<u>PROPELLER/BLADE</u>	<u>AFFECTS PROP S/N* PRIOR TO</u>
<b>AEROSPATIALE (SOCATA)</b>				
TBM 700	A60EU	NA	HC-E4N-3/E9083S(K)	HH216
<b>BEECH</b>				
100, A100 KING AIR	STC-	RAISBECK	HC-D4N-3C/D9290K	FY1352
1900D AIRLINER	A24CE	NA	HC-E4A-3A/E10950K	HJ536
1900D AIRLINER	A24CE	NA	HC-E4A-3I/E10950PK	HJ536
200 SERIES KING AIR	STC-SA2698NM-S	RAISBECK	HC-D4N-3A/D9383K	FY1352
B200(C,T,CT)	A24CE	NA	HC-E4N-3G/D9390SK-1R	HH216
C90 KING AIR	UNK	WEST TENN. AV.	HC-D4N-3C/D9290K	FY1352
A90, B90, C90(A), E90, 65-90	STC-SA3593NM	RAISBECK	HC-D4N-3C/D9290K	FY1352
F90 KING AIR	STC-SA4131NM	RAISBECK	HC-D4N-3C/D9290S(K)	FY1352
<b>CESSNA</b>				
441 CONQUEST II	STC-SA00058AT	EXEC. WINGS	HC-E4N-5(A,B)/E8501K	HE169
<b>DEHAVILLAND CANADA</b>				
DHC-6-100 TWIN OTTER	UNK	FIELD AVIATION	HC-D4N-3E/D9511FK	FY1352
DHC-6-300 TWIN OTTER	STC-	FIELD AVIATION	HC-D4N-3E/D9511FK	FY1352
DHC-6-300 TWIN OTTER	STC-SA3532NM	RAISBECK	HC-D4N-3C/D9290K	FY1352
<b>GOODYEAR (LORAL)</b>				
GZ22 GOODYEAR BLIMP	P18NE	NA	HC-D3F-7/D7023	GM6
<b>GROB/E-SYSTEMS</b>				
G520 EGRETT	A63EU	NA	HC-E4P-5/E11990K	HE169
<b>PILATUS</b>				
PC-6	UNK	NA	HC-D4N-3P/D9511FK	FY1352
PC-9 & PC-7 Mk II	UNK	NA	HC-D4N-2(A,D)/D9512AK	GG339
PC-12	UNK	NA	HC-E4A-3D/E10477K	HJ536
<b>SHORT BROTHERS</b>				
S312 TUCANO	UNK	NA	HC-D4N-5C/D9327K	FV221
<b>VALMET</b>				
L-80TP REDIGO	UNK	NA	HC-D3F-7/D9587-11	GM6

- \* Propeller serial numbers are impression stamped on propeller hubs. An exception to this list is possible where a new replacement hub, outside of affected serial numbers, is installed in an overhauled propeller which may not be in compliance with this Bulletin. In this case, the propeller repair station must specify compliance (or non-compliance) in their maintenance release tags.

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B. Concurrent Requirements.

After compliance with this Bulletin, compliance with Service Bulletin 214 (daily visual inspection for oil leakage for Beech 1900D aircraft) is no longer required.

C. Reason.

- (1) Several incidents of cracks in propeller pitch change rods have been reported on Beech 1900D aircraft. Service Bulletin 214 was issued in May 1995 to caution operators that oil leaks might be caused by cracked pitch change rods. Incidents have been limited to Beech 1900D aircraft.
- (2) An improved pitch change rod has been developed and is now available, P/N D6071-1 replaces D6071, D6114-1 replaces D6114, and P/N D494-1 replaces D494. The dash -1 rods have material and manufacturing process improvements which provide improved fatigue life. D6071, D6114, and D494 are no longer procurable.
- (3) Although the old and new pitch change rods are similar in appearance and are interchangeable without affecting other parts, usage of the new pitch change rod provides a product improvement. Therefore, when a new pitch change rod is used, a record of the installation is required.

D. Description.

This bulletin provides approval and instructions for installation of D6071-1, D494-1, and D6114-1 Pitch Change Rods.

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#### E. Compliance.

- (1) Compliance is required at next propeller overhaul or 2 years from the effective date of this Bulletin, whichever occurs first for:

BEECH 1900D with HC-E4A-3(A,I)/E10950(P)K propeller.

- (2) Compliance is required at next propeller overhaul, not to exceed 1000 hours of operation or 5 years from the effective date of this Bulletin (Dec 15/95), whichever occurs first for:

AEROSPATIALE (SOCATA) TBM 700 with HC-E4N-3/E9083S(K) propeller, PILATUS PC-9 and PC -7 Mk II with HC-D4N-2(A,D)/D9512AK propeller, SHORT BROTHERS S312 TUCANO with HC-D4N-5C/D9327K propeller, and GROB/E-SYSTEMS G520 EGRETT with HC-E4P-5/E11990K propeller.

- (3) Compliance is required at next propeller overhaul, not to exceed 3000 hours of operation or 5 years from the effective date of this Bulletin, whichever occurs first for:

BEECH B200 with HC-E4N-3G/D9390SK-1R propeller, PILATUS PC-6 with HC-D4N-3P/D9511FK propeller, PILATUS PC-12 with HC-E4A-3D/E10477K propeller, and VALMET L-80TP with HC-D3F-7/D9587-11 propeller.

- (4) For ALL OTHER AIRCRAFT compliance is optional.

#### F. Approval.

FAA approval has been obtained on technical data in this publication that affects type design.

#### G. Manpower.

If compliance is performed in the course of normal overhaul or other propeller disassembly/assembly, no additional manpower is required.

#### H. Weight and Balance.

Not Changed.

#### I. Electrical Load Data.

Not Changed.

#### J. References.

Hartzell Manual 141, Manual for HC-(D,E)4( )-5 propellers.

Hartzell Manual 142, rev. 1, Manual for HC-D3F-7, HC-(D,E)4( )-2 propellers.

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Hartzell Manual 143A, rev. 1, Manual for HC-(D,E)4(-)-3 propellers.  
Hartzell Service Bulletin 214, Cracked Pitch Change Rods (Beech 1900D propellers)

For Hartzell service literature and revisions, contact:

Hartzell Propeller Inc. Telephone: 937.778.4200  
Attn: Service Documents Secretary Fax: 937.778.4321  
One Propeller Place  
Piqua, Ohio 45356 U.S.A.

#### K. Other Publications Affected.

Manual s 141, 142, and 143A will be revised to incorporate information from this Bulletin. Service Bulletin 214 will be revised to indicate that after compliance with this Bulletin, compliance with Service Bulletin 214 is no longer required.

#### 2. Material Information.

##### A. Material necessary for each propeller.

<u>New P/N</u>	<u>Old P/N</u>	<u>Description</u>	<u>Qty/Prop</u>
A6411-1	---	Label, Bulletin compliance	1 (optional)
D6071-1	D6071	Pitch Change Rod	1 for dash -2 and -3 propellers
D494-1	D494	Pitch Change Rod	1 for dash -5 and -7 propellers
D6114-1	D6114	Pitch Change Rod	1 for HC-E4N-5B propellers

Identification - Pitch Change Rods are identifiable by the part number which is located on the flat portion of the rod where a wrench is used to hold the rod during installation, see Figure 1. The D494 Rod is identical to the D6071 Rod except that D494 Rods have close tolerance requirements internally for Beta tube installation. The dash -1 versions of these rods have different material and manufacturing processes. These differences cannot be easily identified visually, part number identification is the only suitable means of identification.

Usage - Dash -5 and -7 propellers, used on Allied Signal and Allison engines, utilize a close tolerance Beta tube and therefore require a D494 (or -1) Rod. Dash -2 and -3 propellers, used on Pratt & Whitney PT6 engines, can use either a D494 (or -1) or D6071 (or -1) Rod. The dash -1 pitch change rods are physically interchangeable with the old parts with no affect on other parts or procedures.



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The D6114 (or -1) Rod is unique to the HC-E4N-5B propeller model.

B. Consumables.

No additional consumables are required

C. Special Tooling.

<u>Hartzell P/N</u>	<u>Description</u>
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BST-3067	Piston Installation Socket (to grasp flats of pitch change rod)
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BST-2922	Modified Deep Well Socket (for piston attachment nut)
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NOTE: Use of locally developed tooling is permissible.

3. Accomplishment Instructions.

When a D494-1 or D6071-1 Pitch Change Rod is used in lieu of a D494 or D6071 Pitch Change Rod:

A. Disassembly.

Disassemble propeller in accordance with appropriate Hartzell Manual 141, 142, or 143A, procedures are unchanged except that special tools BST-2922 and BST-3067 are recommended to remove piston/pitch change rod from hub assembly. Use BST-3067 Piston Installation Socket, to grasp flats of pitch change rod and BST-2922 Modified Deep Well Socket on self locking piston nut, remove piston nut and piston from pitch change rod.

B. Repair/Replacement.

- (1) Overhaul, inspection, and repair limits for D494-1 and D6071-1 Pitch Change Rods are unchanged from the previous rods.
- (2) Pitch change rods that are to be replaced with new -1 rods are to be retired from service and not used on other applications.

C. Assembly.

Assemble in accordance with appropriate Hartzell Manual 141, 142, or 143A. No change in procedures except as follows:

- (1) Verification of the part number on the pitch change rod must be accomplished prior to final assembly.
- (2) Install piston and self locking nut on new pitch change rod prior to installing pitch change rod into hub. The following assembly sequence and procedure differs slightly from the existing manuals to assure that when torquing the piston nut at

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127 foot-pounds, the torque will NOT be transmitted to the pitch change rod/fork joint:

- (a) Thread the self-locking nut (B-474) onto the pitch change rod, and torque the nut  $127 \pm 12$  foot-pounds. Use the piston installation socket (BST3067) and the modified deep well socket (BST2922) to install the piston onto the pitch change rod.
- (b) Apply anti-seize compound (CM118, Manual 202A) to the external threads on the engine end of pitch change rod in the threaded area contacting the pitch change fork.
- (c) Thread the pitch change rod/piston assembly into center of hub assembly and torque  $80 \pm 8$  foot-pounds using the modified deep well socket (BST2922). Do not exceed 88 foot-pounds.

#### D. Record of accomplishment.

- (1) Make an entry in the propeller logbook indicating compliance with this Service Bulletin.
- (2) An exterior identification on the propeller is required. Two methods are approved for repair stations to provide identification, see Figure 1:
  - a. Install A6411-1 Label on propeller cylinder. Use label to identify compliance with this Bulletin.
  - b. If A6411-1 Label is not used, after installation, paint out 1/2 inch of threads with green paint for external identification purposes.
- (3) New propellers from Hartzell have no external identification except by serial number. The propeller serial numbers listed below show the beginning serial number of propellers manufactured by Hartzell with dash -1 pitch change rods:

<u>Propeller Model</u>	<u>Serial number</u>
HC-D4N-2()	GG339
HC-D4N-3()	FY1352
HC-D4N-5()	FV221
HC-E4A-3()	HJ536
HC-E4N-3()	HH216
HC-E4N-5()	HE169
HC-E4P-5	HE169
HC-D3F-7	GM6

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## Propellers Propeller - New Pitch Change Rods

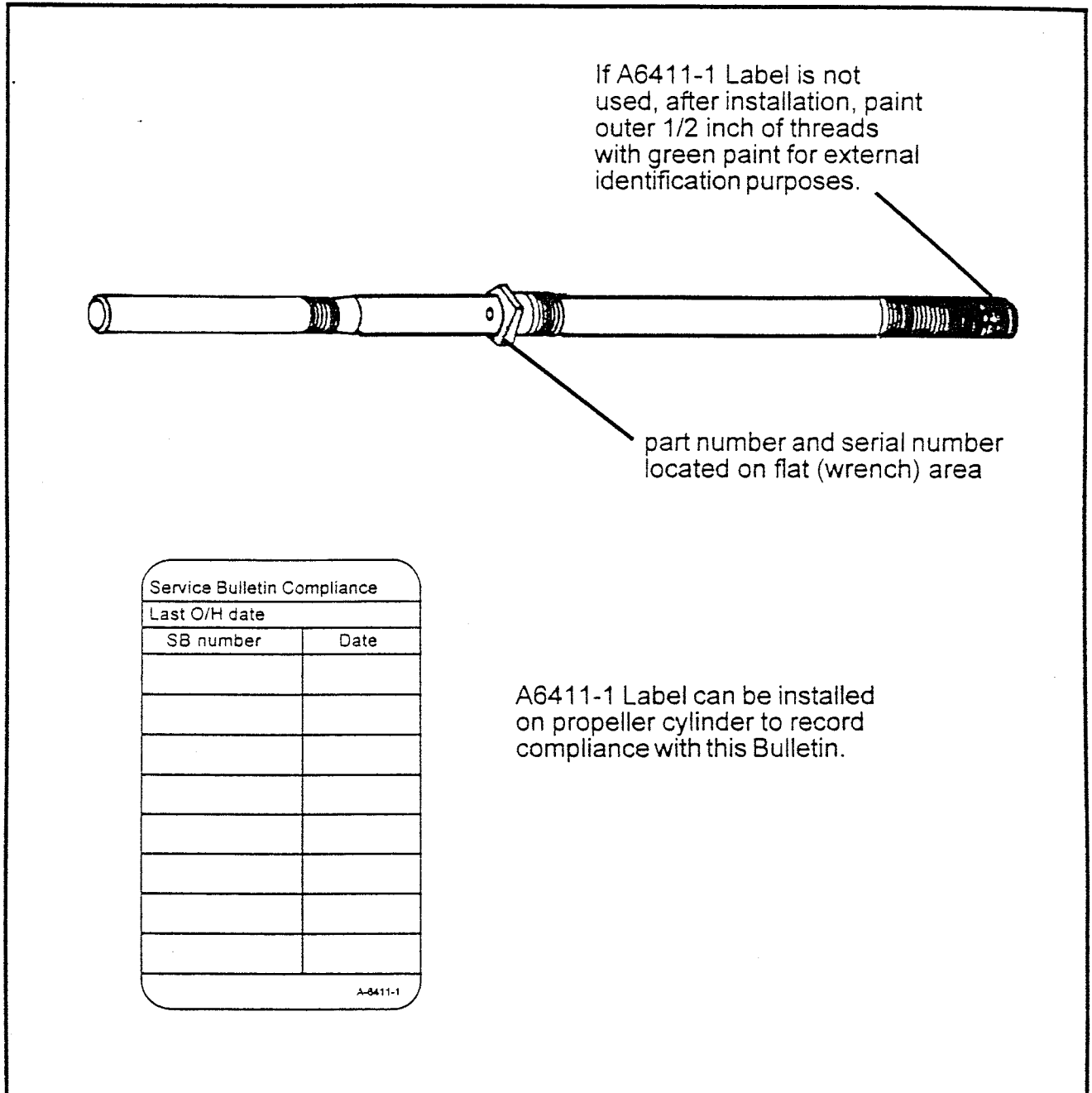


Figure 1. Pitch Change Rod Identification and Bulletin Compliance

