SERVICE LETTER

SUBJECT: **HARTZELL SERVICE BULLETINS HC-61-224, REV.2 - PROPELLER PART - STOCK INSPECTION AND HC-61-224, REV. 2 - PRE-LOAD PLATE SET-SCREW INSPECTION**

All Operators: Date: July 09/97

This service letter draws the attention of operators to vendor information that provides information on the above topics as follows:

APPENDIX A Hartzell Service Bulletin HC-61-224 Rev 2, Propeller Part -- Stock Inspection.

APPENDIX B Hartzell Service Bulletin HC-61-225 Rev 2, Propeller – Pre-load Plate Set Screw Inspection.

Firstly, contact the vendor (at the address provided in the appendix information) 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, Tel: + 41 41 619 6509
SWITZERLAND. Fax: + 41 41 610 3351

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Appendix A to Pilatus Service Letter No. 023

(Hartzell Service Bulletin HC-61-224, Rev. 2 - Propeller Part Stock Inspection - 09-05-97)

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HARTZELL PROPELLER INC.
One Propeller Place
Piqua, Ohio 45356-2634 U.S.A.
Telephone: 937.778.4200
Fax: 937.778.4321

HARTZELL

SERVICE BULLETIN REVISION TRANSMITTAL

SERVICE BULLETIN HC-SB-61-224

REVISION # 2 dated May 9, 1997

This page transmits Revision 2 to Service Bulletin HC-SB-61-224 dated May 9, 1997.

This revision is issued to delete reference to the depth of the hex recess in A-3204-( ) Set Screws. New screws have been found to have variable depth of the hex recess. Therefore the depth of the hex recess cannot be used for identification purposes. The only identification means is the color difference between the old and new parts.

Changes are shown by a revision bar in the left margin of the revised pages. This Bulletin has been reprinted and redistributed in its entirety.

HARTZELL PROPELLER INC.

SERVICE BULLETIN

Propellers

Propeller Part - Stock Inspection

1. Planning Information

   A. Effectivity

   A-3204 and A-3204-2 Set Screws used in the blade preload plate of Hartzell aluminum hub propellers.

   B. Concurrent Requirements

   None.

   C. Reason

   There have been several reports of broken A-3204 Set Screws. Two contributing factors are the hardness and, in some screws, the depth of the hex recess on the end of the screw (used for the internal wrench) was aligned with end of the external jam nut which combined to form a highly stressed area in the screw thread. A-3204 and A-3204-2 Set Screws with the higher hardness need to be removed from field stocks.

   D. Description

   Procedures are provided for inspection of field stocks.

   E. Compliance

   Compliance is required within 10 days of receipt of this Bulletin.

   F. Approval

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

   G. Manpower

   No additional manpower is required.

   H. Weight and Balance

   Not changed.

   I. Electrical Load Data

   Not changed.

   J. References

   For Hartzell service literature and revisions, contact:

   Hartzell Propeller Inc.
   Product Support Department
   One Propeller Place
   Piqua, Ohio 45356 U.S.A.

   Telephone: 937.778.4200
   Fax: 937.778.4321

2. Material Information

   A-3204 and A-3204-2 Set Screws require inspection. No part number changes are involved.

3. Accomplishment Instructions

   A. Parts distributors and propeller repair stations are to inspect inventories of all A-3204 and A-3204-2 Set Screws.

   B. Screws that must be removed from stock are identifiable by their color. New screws with the desired hardness are color coded with an dull "olive green" color, while previous screws were a bright "bronze" color. Any screws with "olive green" color are serviceable. Any screws of the "bronze" color are not to be used and may be returned to Hartzell (via the source of procurement) for credit or replacement.

   NOTE: This Bulletin addresses only inspection of new parts in field inventories. Parts that are installed in propellers are addressed in Hartzell Service Bulletins HC-SB-61-225 and HC-SB-61-226.

Appendix B to Pilatus Service Letter No. 023

(Hartzell Service Bulletin HC-61-225, Rev. 2 - Propeller,
Pre-load Plate Set screw Inspection - dated 09-05-97)

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HARTZELL PROPELLER INC.
One Propeller Place
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SERVICE BULLETIN REVISION TRANSMITTAL

SERVICE BULLETIN HC-SB-61-225

REVISION # 2 dated May 9, 1997

This page transmits Revision 2 to Service Bulletin HC-SB-61-225 dated May 9, 1997.

This revision is issued to delete usage of the A-3204-2 Set Screw in HC-A6A-3 propeller models. HC-A6A-3 propellers continue to use only A-3204 Set Screws.

Changes are shown by a revision bar in the left margin of the revised pages. This Bulletin has been reprinted and redistributed in its entirety.

HARTZELL PROPELLER INC.

SERVICE BULLETIN

Propellers

Propeller - Preload Plate Set Screw Inspection

1. Planning Information

   A. Effectivity

   All four, five, and six blade "lightweight" turbine engine propellers manufactured prior to March 15, 1997: HC-(D,E)4( )-( ), HC-E5( )-( ), and HC-A6A-( ) series propellers. See Tables 1 and 2 for aircraft applications and propeller serial numbers affected.

   B. Concurrent Requirements

   None.

   C. Reason

   (1) There have been reports of broken set screws used in the blade preload plate in HC-D4N-5C propellers installed on Shorts S312 Tucano aircraft. A broken screw does not create an operational problem, except for the possibility of a loose part that may damage or interfere with the internal pitch change mechanism. In one incident, a broken screw lodged between the blade pitch change knob and preload plate which prevented the blades from going completely against the feather stop. The broken set screw was discovered when the propeller was disassembled.

   (2) Two contributing factors are the hardness and, in some screws, the depth of the hex recess on the end of the screw (used for the internal wrench) was aligned with end of the external jam nut which combined to form a highly stressed area in the screw thread. Usage of a longer screw or a screw with a hex recess of less depth will reduce the stress concentration and provide improved strength.

   D. Description

   This Bulletin provides instructions for:

   (1) Inspection for a possible broken preload plate set screw during scheduled aircraft maintenance (on-wing).

   (2) Preload plate set screw replacement during propeller overhaul.

   E. Compliance

   (1) During scheduled aircraft inspections when spinner dome is removed (not to exceed 500 hour intervals), inspection for a possible broken preload plate set screw is required per Accomplishment Instructions, paragraph 3. (A) of this Bulletin. This inspection may be discontinued once screw replacement has been accomplished.

   (2) During next overhaul or disassembly of the propeller, replacement of preload plate set screws with new screws is required.

F. Approval

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

G. Manpower

No additional manpower is required.

H. Weight and Balance

Not changed.

I. Electrical Load Data

Not changed.

J. References

Use appropriate Hartzell Propeller Overhaul Manual 141, 142, 143A, 144, 156A, or 158A for propeller disassembly/assembly procedures.

K. Other Publications Affected

Hartzell Propeller Overhaul Manuals 141, 142, 143A, 144, 156A, & 158A and Hartzell Owner's Manuals 149 & 154 will be revised to incorporate data from this Service Bulletin.

For Hartzell service literature and revisions, contact:

Hartzell Propeller Inc.
Product Support Department
One Propeller Place
Piqua, Ohio 45356 U.S.A.

Telephone: 937.778.4200
Fax: 937.778.4321

2. Material Information

A. Material required during overhaul.

Part Number	Description	Qty
A-3204-2	SET SCREW	1 per propeller blade

B. For propellers affected by this Bulletin, except for the HC-A6A-3( ) model, the A-3204-2 Set Screw (2.00 inches long) supersedes the previously specified A-3204 Set Screw (1.75 inches long) .

NOTE: The A-3204-2 can replace A-3204 in all propeller models except for: HC-A6A-3( ) and "Y" shank, "compact" propellers, HC-( )(2,3,4)Y( )-( ) models, which will continue to use the A-3204.

3. Accomplishment Instructions

A. During scheduled aircraft maintenance, when the spinner dome is removed:

(1) Manually rotate prop and listen for possible noise caused by a broken set screw/jam nut that may be loose in the propeller hub, see Figure 1.

(2) With propeller blades in feather position, visually check feather stop nut to be seated, see Figure 2.

(3) If noise indicates a loose part (broken set screw) or if the propeller blades do not go all the way into feather, remove propeller and send to a propeller repair station for disassembly and inspection for a possible broken preload plate set screw.

(a) If a broken screw is found after disassembly, the propeller must be disassembled and inspected for damage that may have been caused by the broken screw.

(b) Report any such incidents to the Hartzell Product Support Department.

B. During next disassembly of the propeller:

(1) Replacement of preload plate set screws with new screws is required.

(2) Use of A-3204-2 Set Screws in lieu of the previously specified A-3204 Set Screws is recommended, except for HC-A6A-3 model which continues to use only the A-3204. Use of A-3204-2 is preferred, however, A-3204 remains usable if it meets the inspection requirements of Hartzell Service Bulletin HC-SB-61-224.

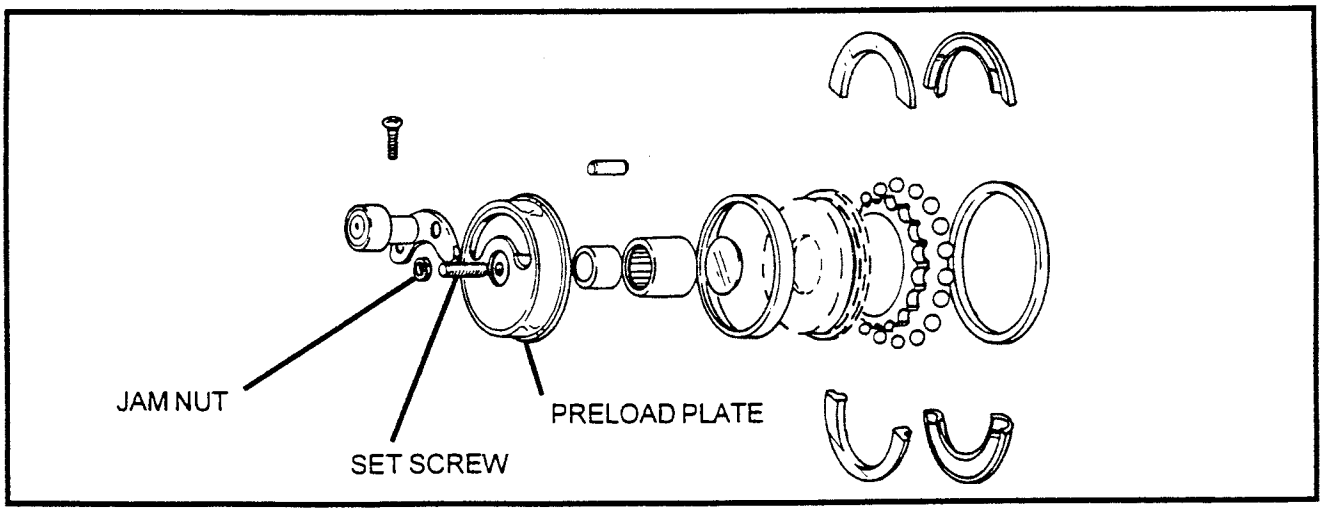

FIGURE 1.
TYPICAL BLADE COMPONENTS SHOWING SET SCREW APPLICATION

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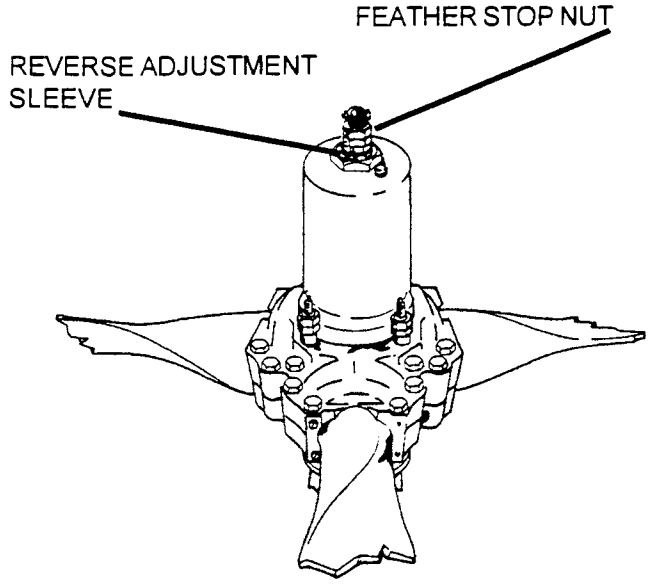
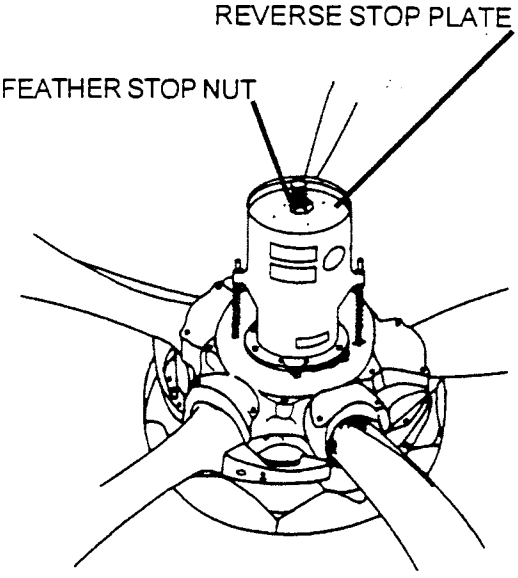
Propellers

Propeller - Preload Plate Set Screw Inspection



Four blade propeller, HC-(E,D)4( )-( ):
Blades are in feather position when feather stop nut contacts the reverse adjustment sleeve.



Five blade propeller, HC-E5( )-( ):
Blades are in feather position when feather stop nut contacts the reverse adjust plate.

Six blade propeller, HC-A6A-3( ):
Blades are in feather position when the piston contacts the feather stop nut next to hub.

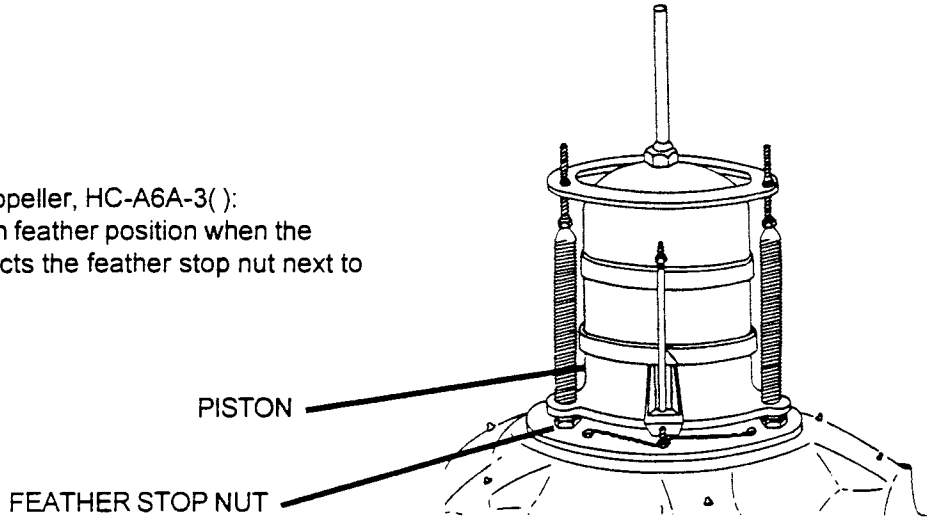


FIGURE 2.
FEATHER POSITION FOR 4, 5, 6 BLADE PROPELLERS

HARTZELL PROPELLER INC.

SERVICE BULLETIN

Propellers

Propeller - Preload Plate Set Screw Inspection

TABLE 1.
AIRCRAFT APPLICATIONS

AIRCRAFT MANUFACTURER MANUFACTURER	AIRCRAFT MODEL	FAA * TC/STC #	PROPELLER MODEL	AFFECTS PROP S/N PRIOR TO
AEROSPATIALE (SOCATA)	TBM 700	A60EU	HC-E4N-3	HH386
BEECH	65-A90	STC-SA3593NM	HC-D4N-3C	FY1571
BEECH	B90, C90, C90A, E90	STC-SA3593NM	HC-D4N-3C	FY1571
BEECH	F90	STC-SA4131NM	HC-D4N-3C	FY1571
BEECH	100, A100	STC-SA5661NM	HC-D4N-3C	FY1571
BEECH	200, B200	STC-SA2698NM-S	HC-D4N-3A	FY1571
BEECH	B200 series	A24CE	HC-E4N-3G	HH386
BEECH	1900D	A24CE	HC-E4A-3(A,I)	HJ804
CESSNA	441	STC-SA00058AT	HC-E4N-5(A,B)	HE183
DE HAVILLAND CANADA	DHC-6-300	STC-SA3532NM	HC-D4N-3C	FY1571
DE HAVILLAND CANADA	DHC-6-100, -300	Unknown	HC-D4N-3(E,Q)	FY1571
GROB/E-SYSTEMS	G520	A63EU	HC-E4P-5	HE183
GRUMMAN	S-2	Unknown	HC-E5B-5(A)	HN11
PIAGGIO	P-180	A59EU	HC-E5N-3(A)(L)	HF68
PILATUS	PC-6 B1, B2	Not applicable	HC-D4N-3P	FY1571
PILATUS	PC-7 MKII	Not applicable	HC-D4N-2D	GG413
PILATUS	PC-9	Not applicable	HC-D4N-2A	GG413
PILATUS	PC-12	A78EU	HC-E4A-3D	HJ804
SHORT BROTHERS	S312	Not applicable	HC-D4N-5C	FV221
SHORT BROTHERS	SD3-60-300	A41EU	HC-A6A-3, -3A	GP179

*NOTE: Several of the propeller applications listed are not original equipment but are installed in accordance with a supplemental type certificate. The FAA aircraft type certificate number or supplement type certificate number is provided for reference.