

PRATT & WHITNEY CANADA  
**SERVICE BULLETIN**

P&WC S.B. No. 13206R6

**BULLETIN INDEX LOCATOR**  
**72-60-00**

TURBOPROP ENGINE  
ACCESSORY GEARBOX ASSEMBLY WITH SEPARATE COUPLING SHAFT AND DRIVE  
GEARSHAFT - INTRODUCTION OF

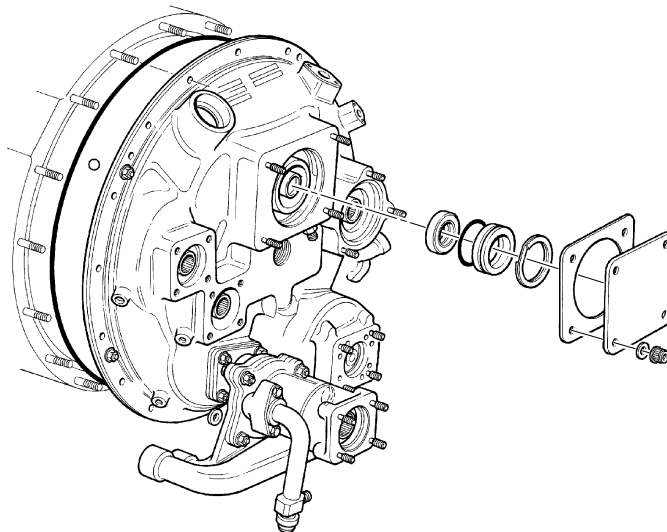
MODEL APPLICATION

PT6A-60A, PT6A-61, PT6A-65B, PT6A-65R, PT6A-65AG, PT6A-65AR

Commercial Support Program No: Deleted

Compliance: CATEGORY 5, 6

- Summary:
1. Accessory loading can result in loss of drive to the accessory gearbox through component fracture. The accessory gearbox assembly input-drive coupling shaft is replaced by a gearshaft with wider gear teeth supported by an additional bearing. This requires a separate coupling shaft, starter drive and accessory drive gearshafts with wider teeth, and different oil jet and oil tank center tube.
  2. The borescope inspection introduced on P&WC S.B. No. 13185 - ACCESSORY-GEARBOX COUPLING-SHAFT AND CENTER BEARING ATTACHMENT is no longer required with the incorporation of this service bulletin.



Apr 12/1993  
Revision No. 6: Nov 22/2021

**PT6A-72-13206**  
Cover Sheet

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22 November 2021

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REVISION TRANSMITTAL SHEET  
TURBOPROP ENGINE MODEL PT6A

SUBJECT: Pratt & Whitney Canada Service Bulletin No. PT6A-72-13206, Rev. No. 6, dated Nov 22/2021 (P&WC S.B. No. 13206R6) ACCESSORY GEARBOX ASSEMBLY WITH SEPARATE COUPLING SHAFT AND DRIVE GEARSHAFT - INTRODUCTION OF

Replace your existing copy of this service bulletin with the attached revised bulletin. Destroy the superseded copy.

Please retain this Revision Transmittal Sheet with the revised bulletin.

SUMMARY: This service bulletin is revised to:

- remove Commercial Support Program Notification (CSPN) A94008 in Para. 2.A., Material Information; and
- update pricing to current year.

EFFECT OF REVISION ON PRIOR ACCOMPLISHMENT:

None.

NOTE: A black bar in the left margin indicates a change in that line of text or figure.

REVISION HISTORY:

Original Issue: Apr 12/1993  
Revision No. 1: Jul 27/1994  
Revision No. 2: May 04/1995  
Revision No. 3: Jul 11/2003  
Revision No. 4: Jul 10/2013  
Revision No. 5: Apr 04/2014  
Revision No. 6: Nov 22/2021



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TURBOPROP ENGINE  
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GEARSHAFT - INTRODUCTION OF

1. Planning Information

A. Effectivity

PT6A-60A Engines which are before and include Serial No. PCE-95796.  
PT6A-61 Engines which are before and include Serial No. PCE-99142.  
PT6A-65B Engines which are before and include Serial No. PCE-32625.  
PT6A-65R Engines.  
PT6A-65AG Engines which are before and include Serial No. PCE-32619.  
PT6A-65AR Engines which are before and include Serial No. PCE-97543.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

There have been reports of loss of drive to the accessory gearbox assembly.

(2) Cause

Accessory loading can result in worn or fractured gear teeth, support bearing or input shaft.

(3) Solution

To better accept the loading, introduce an input drive shaft with wider teeth and supported by an additional bearing. This requires the introduction of:

- A separate coupling shaft;
- Two driven gears (starter drive and accessory drive) with wider teeth;
- An oil jet providing lubrication to the existing and the new splines; and
- A reduced length oil tank center tube to permit the installation of the additional bearing.

D. Description

(1) The accessory gearbox coupling gearshaft is replaced with a separate coupling shaft and input drive gearshaft, which has wider gear teeth. An additional bearing is installed on the accessory gearbox diaphragm to support the input drive gearshaft. This requires the replacement of:

- The starter generator drive gearshaft and accessory drive gearshaft with similar ones having wider gear teeth to mate with the wider gear teeth on the new input drive gearshaft.

P&WC No. 92398B, 95678, 96393, A0410, DCR 20801

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## TURBOPROP ENGINE ACCESSORY GEARBOX ASSEMBLY WITH SEPARATE COUPLING SHAFT AND DRIVE GEARSHAFT - INTRODUCTION OF

### 1. Planning Information (Cont'd)

- The oil tank center tube with a similar shorter oil tank center tube. The old center tube can be modified.
  - The oil jet nozzle with a new longer oil jet nozzle assembly.
- (2) The borescope inspection introduced on P&WC S.B. No. 13185 - ACCESSORY-GEARBOX COUPLING-SHAFT AND CENTER BEARING ATTACHMENT is no longer required with the incorporation of P&WC S.B. No. 13206.

### E. Compliance

#### **For the PT6A-65AG Engines:**

CATEGORY 5 - P&WC recommends to do this service bulletin when the engine is disassembled and access is available to the necessary subassembly (i.e. module, accessories, components, or build groups). Do all spare subassemblies.

#### **For the PT6A-60A, PT6A-61, PT6A-65AR, PT6A-65B and PT6A-65R Engines:**

CATEGORY 6 - P&WC recommends to do this service bulletin when the subassembly (i.e. module, accessories, components, or build groups) is disassembled and access is available to the necessary part. Do all spare subassemblies.

### F. Approval

The technical content of this document is approved under the authority of the Transport Canada Civil Aviation (TCCA) Design Approval Organization No: DAO #93-Q-01.

### G. Manpower

Estimate of 10 man-hours required to include this service bulletin at heavy maintenance.

No more man-hours are necessary to include this service bulletin at overhaul.

### H. Weight and Balance

The engine weight will increase by 0.6 pounds (0.27 kgs).

The effect of the weight change on the center of gravity is less than 0.25 in. (6.35 mm).

### I. Electrical Load Data

Not changed.

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## TURBOPROP ENGINE ACCESSORY GEARBOX ASSEMBLY WITH SEPARATE COUPLING SHAFT AND DRIVE GEARSHAFT - INTRODUCTION OF

1. Planning Information (Cont'd)

J. Software Accomplishment Summary

Not applicable.

K. References

Maintenance Manual P/N 3032842 (PT6A-65AG/-65AR/-65B/-65R)  
Overhaul Manual P/N 3032843 (PT6A-65AG/-65AR/-65B/-65R)  
Illustrated Parts Catalog P/N 3032844 (PT6A-65AG/-65AR/-65B/-65R)  
P&WC S.B. No. 13140, 13161, 13162, 13163, 13185 and 13192  
PWA Overhaul Standard Practices Manual P/N 585005

L. Publications Affected

Maintenance Manual P/N 3032842 (PT6A-65AG/-65AR/-65B/-65R)  
Overhaul Manual P/N 3032843 (PT6A-65AG/-65AR/-65B/-65R)  
Illustrated Parts Catalog P/N 3032844 (PT6A-65AG/-65AR/-65B/-65R)

M. Interchangeability and Intermixability of Parts

Not applicable.

2. Material Information

A. Industry Support Information

Deleted.

B. Material - Cost and Availability

You can get the procurable parts listed in Para. 2.C. from any Pratt & Whitney Canada Parts Distribution Center.

The new parts are available.

C. Material Necessary for Each Engine

The quantity of materials listed in this section is on a per Engine basis.

<u>New P/N</u>	<u>Keyword</u>	<u>Old P/N</u>	<u>Qty</u>	<u>Est. Unit List Price (\$US, 2021)</u>	<u>Instructions Disposition</u>
<b>For Engines not incorporating P&amp;WC S.B. No. 13140:</b>					
3119369-01	Shaft, Coupling, Accessory Gearbox	3113770-01	1	17743.00	(A)(B)

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## TURBOPROP ENGINE ACCESSORY GEARBOX ASSEMBLY WITH SEPARATE COUPLING SHAFT AND DRIVE GEARSHAFT - INTRODUCTION OF

<u>New P/N</u>	<u>Keyword</u>	<u>Old P/N</u>	<u>Qty</u>	<u>Est. Unit List Price (\$US, 2021)</u>	<u>Instructions Disposition</u>
<b>For Engines incorporating P&amp;WC S.B. No. 13140, 13162, 13163 and 13192:</b>					
3118791-01	Shaft, Coupling, Accessory Gearbox	3114312-01	1	14903.00	(A)(B)
<b>For All Engines:</b>					
3116496-01	Gearshaft, Drive, Accessory Gearbox		1	11276.00	(A)
3116498-01	Gearshaft, Starter Generator drive	3017609	1	quote	(A)(B)
AS3217-117	Ring, Retaining		1	4.97	(A)
	Nozzle, Oil Jet, Threaded	3114329-01	1		(B)
3116530-01	Nozzle, Oil Jet, Threaded, Assembly of		1	1396.50	(A)
3116446-01	. Nozzle, Oil Jet		1	NP	
AS3131-03	. Plug, Expandable, Slfkg		1	149.80	
AS3132-03	. Pin, Tapered, Slfkg Plug		1	75.44	
3037278	Bearing, Roller, Interchangeability Control (IC)		1	6080.00	(A)
3112367-01	. Bearing, Roller (Option)		1	Ref.	
3112368-01	. Bearing, Roller (Option)		1	Ref.	
3112369-01	. Bearing, Roller (Option)		1	Ref.	
3115926-01	Washer, Key, Triple		1	77.36	(A)
MS9518-06	Bolt, Machine		3	3.98	(A)
3116633-01	Gearshaft, Spur, Accessory Drive, Assembly of	3105282-01	1	16907.00	(A)(B)

**For PT6A-65B/-65R/-65AG/-65AR Engines Only:**

3116448-01	Tube, Center Oil Tank	3107734-01	1	1809.90	(A)(C)
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(A) RESTRICTED INTERCHANGEABILITY - (ATA 200 Explanation Code 07):  
All the old parts must be replaced by all the new parts as an assembly.

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<u>New P/N</u>	<u>Keyword</u>	<u>Old P/N</u>	<u>Qty</u>	<u>Est. Unit List Price (\$US, 2021)</u>	<u>Instructions Disposition</u>
<p>(B) Discard the old part if you think it is unserviceable.</p> <p>(C) To get the new part it is possible to make a modification to the old part, or you can get the new part from any Pratt &amp; Whitney Canada Distribution Center.</p>					

D. Reidentified Parts

The following list of parts can be reworked:

<u>OLD P/N</u>	<u>NEW P/N</u>
3107734-01	3116448-01

E. Tooling - Price and Availability

Not applicable.

3. Accomplishment Instructions

A. Refer to the instructions in the maintenance or overhaul manual:

- (1) Remove the accessory gearbox assembly from the compressor inlet case assembly.
- (2) Remove the oil tank center tube (For PT6A-65B/-65R/-65AG/-65AR, P/N 3107734-01) from the compressor inlet case assembly.
- (3) Inspect the splines of the compressor rear hub coupling (Ref. Fig. 1 , View B):
  - (a) Move a scribe across both faces of the splines (Ref. Typical wear pattern, Area C) to detect any measurable tooth wear.
  - (b) If a step is present on the surface of the splines, the compressor rear hub coupling is not acceptable and the gas generator module must be removed from service and sent to an approved overhaul facility for repair.

NOTE: This service bulletin may be done at an approved overhaul facility following the replacement of the compressor rear hub coupling.

- (c) If a step is not present on the surface of the splines, the compressor rear hub coupling is acceptable. Proceed with incorporation of this service bulletin.
- (4) Disassemble the accessory gearbox assembly (Ref. Fig. 2):

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3. Accomplishment Instructions (Cont'd)

- (a) Remove the oil jet nozzle P/N 3114329-01 from the accessory gearbox housing assembly.
  - (b) Separate the accessory gearbox housing assembly from the accessory gearbox diaphragm assembly.
  - (c) Remove the starter generator drive gearshaft P/N 3017609 with the attached centrifugal breather impeller.
  - (d) Remove the centrifugal impeller from the starter generator drive gearshaft P/N 3017609.
  - (e) Remove the accessory drive spur gearshaft assembly P/N 3105282-01 and the accessory gearbox coupling shaft P/N 3113770-01 (Post-SB13161) or accessory gearbox coupling shaft P/N 3114312-01 (Post-SB13162).
- (5) Assemble the accessory gearbox assembly (Ref. Figs. 2 and 3):
- (a) Install the new starter generator drive gearshaft P/N 3116498-01 on the existing centrifugal breather impeller.
  - (b) Assemble the new accessory gearbox coupling shaft P/N 3119369-01 (Post-SB13161) or accessory gearbox coupling shaft P/N 3118791-01 (Post-SB13162), the roller bearing P/N 3037278 and the accessory gearbox drive gearshaft P/N 3116496-01:

**CAUTION:** RECORD THE ROLLER BEARING SERIAL NUMBER ON THE BEARING RECORD SHEET IN THE ENGINE LOG BOOK.

- (c) Immerse the new roller bearing P/N 3037278 in engine lubricating oil heated to 121 °C (250 °F) to remove grease. Remove the bearing from the oil, and allow it to drain.
- (d) Place the new accessory gearbox drive gearshaft P/N 3116496-01 on the bench with the spline end up.
- (e) Install the roller bearing on the accessory gearbox drive gearshaft with the serial number down (facing the gear teeth).
- (f) Install the retaining ring P/N AS3217-117 on the accessory gearbox drive gearshaft.
- (g) Install the new accessory gearbox coupling shaft P/N 3118791-01 on the splines of the accessory gearbox drive gearshaft.

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GEARSHAFT - INTRODUCTION OF

3. Accomplishment Instructions (Cont'd)

- (h) Reverse the position of the assembly on the bench and insert the retaining ring in the groove of the accessory gearbox coupling shaft.
  - (6) Install the assembled accessory gearbox coupling shaft, the accessory gearbox drive gearshaft and the roller bearing in the accessory gearbox diaphragm assembly boss.
  - (7) Secure the roller bearing using the new triple keywasher P/N 3115926-01 and three bolts P/N MS9518-06. Torque the bolts 36 to 40 lb.in. and lock the washer tabs.
  - (8) Install the new starter generator drive gearshaft/centrifugal breather impeller and the new accessory drive spur gearshaft P/N 3116633-01.
  - (9) Assemble the accessory gearbox housing assembly to the accessory gearbox diaphragm assembly.
  - (10) Install the new oil jet nozzle assembly P/N 3116530-01 in the accessory gearbox housing assembly.
- B. For PT6A-65B/-65R/-65AG/-65AR engine models, install the new or modified oil tank center tube P/N 3116448-01 in the bore of the compressor inlet case assembly.
- C. Install the accessory gearbox assembly on the compressor inlet case.
- NOTE: Make sure there is correct axial engagement of the accessory gearbox coupling gearshaft.
- D. Write "P&WC S.B. No. 13206 incorporated" in the engine log book
- E. A modification can be done to the serviceable oil tank center tube P/N 3107734-01 (Ref. Fig. 4):
- (1) Machine the oil tank center tube to the dimensions shown (Ref. Section A-A).
  - (2) Deburr and break sharp edges 0.003 to 0.015 in.
  - (3) Identify the modified oil tank center tube by striking out the old P/N 3107734-01 and adding the new P/N 3116448-01, in the same general area, using the vibropeen method of marking.
  - (4) Apply chromate to the machined area and to any exposed metal, using SPOP41 (Ref. PWA Overhaul Standard Practices Manual).
  - (5) Apply synthetic resin varnish to the machined area, using SPOP 152.

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4. Appendix

- A. Refer to Figure 5 for the progression of the accessory gearbox coupling shaft.