

PRATT & WHITNEY CANADA
SERVICE BULLETIN

P&WC S.B. No. 1003R35

BULLETIN INDEX LOCATOR

TURBOPROP ENGINE
OPERATING TIME BETWEEN OVERHAULS AND HOT SECTION INSPECTION FREQUENCY

MODEL APPLICATION

PT6A-6,PT6A-6A,PT6A-6B,PT6A-25,PT6A-25A,PT6A-25C,PT6A-34B

Compliance: Refer to Para. 1.E. in the Service Bulletin

Summary: This service bulletin (SB) provides a recommended basic operating Time Between Overhauls (TBO) and specifies a recommended initial Hot Section Inspection (HSI) frequency. Pratt & Whitney Canada (P&WC) turbine engines are required to undergo periodic inspection in accordance with a pre-established schedule in order to ensure serviceability. The TBO and HSI intervals represent the two major scheduled inspections, and are defined in this SB. This SB also provides TBO extension procedures for operators with an average utilization higher than 300 hours/year. The technical content of this SB has been reviewed by and is acceptable to Transport Canada.

Dec 01/1973
Revision No. 35: Mar 31/2016

PT6A-72-1003
Cover Sheet

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31 March 2016

P&WC S.B. No. 1003R35

REVISION TRANSMITTAL SHEET
TURBOPROP ENGINE MODEL PT6A

SUBJECT: Pratt & Whitney Canada Service Bulletin No. PT6A-72-1003, Rev. No. 35, dated Mar 31/2016 (P&WC S.B. No. 1003R35) OPERATING TIME BETWEEN OVERHAULS AND HOT SECTION INSPECTION FREQUENCY

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 Destroy the superseded copy.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 correct the engine effectivity, Para. 1.A, inadvertently revised at last revision.

EFFECT OF REVISION ON PRIOR ACCOMPLISHMENT:

The TBO and HSI information are transferred from this service to the service bulletins that follow:

For PT6A-6/C20, PT6A-20, PT6A-20A, PT6A-20B PT6A-21, PT6A-27, PT6A-28, PT6A-135 and PT6A-135A Engines,

- P&WC S.B. No. 1803;

For PT6A-114 and PT6A-114A Engines,

- P&WC S.B. No. 1703.

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

REVISION HISTORY:

Original Issue: Dec 01/1973	Revision No. 5: Jun 22/1976	Revision No. 10: Jan 27/1981
Revision No. 1: May 01/1974	Revision No. 6: Oct 26/1977	Revision No. 11: Mar 10/1981
Revision No. 2: Jun 28/1974	Revision No. 7: May 07/1979	Revision No. 12: Jun 05/1981
Revision No. 3: Jul 17/1975	Revision No. 8: Aug 16/1979	Revision No. 13: Aug 25/1982
Revision No. 4: Oct 22/1975	Revision No. 9: Oct 06/1980	Revision No. 14: Apr 27/1983

Revision No. 15: Jul 12/1984
Revision No. 16: Jan 29/1985
Revision No. 17: May 11/1989
Revision No. 18: Jul 13/1990
Revision No. 19: Sep 14/1994
Revision No. 20: Nov 06/1995
Revision No. 21: May 07/1996
Revision No. 22: Dec 11/1997
Revision No. 23: Apr 06/1998
Revision No. 24: Nov 24/1998
Revision No. 25: Feb 04/1999
Revision No. 26: Oct 03/2000
Revision No. 27: May 02/2001
Revision No. 28: Nov 13/2001
Revision No. 29: Jan 29/2008
Revision No. 30: Mar 09/2012
Revision No. 31: May 09/2013
Revision No. 32: Aug 16/2013
Revision No. 33: Sep 04/2013
Revision No. 34: Mar 21/2016
Revision No. 35: Mar 31/2016

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1. Planning Information

A. Effectivity

PT6A-6, PT6A-6A, PT6A-6B, PT6A-25, PT6A-25A, PT6A-25C, PT6A-34B Engines.

NOTE: For other small PT6A models no longer listed, TBO extensions that were approved using this service bulletin are still valid. All new or pending recommendations for the models deleted from this service bulletin will be subject to the conditions of P&WC S.B. No. 1703 or P&WC S.B. No. 1803, as applicable.

B. Concurrent Requirements

None.

C. Reason

This service bulletin:

- Provides a recommended basic operating TBO;
- Specifies a recommended initial HSI frequency; and
- Describes the TBO extension/evaluation process.

D. Description

(1) Definitions:

- The Basic Industry TBO is the P&WC recommended TBO per this service bulletin which is applicable to all operators.
- The Fleet TBO is the TBO level which individual operators have attained for engines of the same model in their possession only.
- The Engine TBO is the TBO applicable to a specific engine per the Industry TBO or Fleet TBO or a recommended TBO by P&WC for a particular set of conditions.
- The term "hours" in this document is the Engine Flight Hours (EFH).

(2) TBO recommendations take into consideration the average effect of the many variables affecting overhaul life, such as:

- average flight duration;
- percentage of time at any given power level;
- climatic conditions and environment;
- maintenance practices;
- utilization; and

P&WC No. DCR4515, DCR21690, DCR24276, DCR24761, DCR27979, DCR35216

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Dec 01/1973

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Revision No. 35: Mar 31/2016

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1. Planning Information (Cont'd)

- engine modification standards.
- (3) Under extreme conditions of very low utilization, coupled with continuous operation in agricultural spraying, sky diving, fire fighting, salt water atmosphere or heavy sand or dust environment, periodic inspections in accordance with the applicable maintenance instructions may indicate maintenance action prior to the recommended overhaul life.
- (4) The TBO interval may be extended with the approval of the operator's Airworthiness Authority. The minimum requirements for engine TBO extension or for fleet TBO extension are described in the Appendix Para. 4.

E. Compliance

The inspection intervals and overhaul periods provided in this bulletin are the manufacturer's recommendations. These periods are based on operation that is per the Airframer's POH (Pilot Operating Handbook). Extended operation at power settings above normal Takeoff/Climb/Cruise may require a reduction in the intervals stated. The use of Maximum Continuous is unrestricted for the duration required by the crew to address an emergency situation. Repetitive use of Maximum Continuous, and/or extended operation at high speeds and/or ITT (Inter-Turbine Temperature) will necessitate a significant reduction in HSI (Hot Section Inspection) interval. Airworthiness authorities normally require operators to follow these recommendations unless alternative arrangements have been made between the operator and the manufacturer, and approved by the operator's airworthiness authority.

F. Approval

Transport Canada has reviewed and approved the technical contents of this Service Bulletin.

NOTE: The service life values quoted herein are determined by the limiting values stated on the Pratt & Whitney Canada drawings which form part of the Department of Transport Aircraft Engine Type Approval for the applicable engine model. These limiting values are based on the use of P&WC approved components installed on/in the engine. Use of other than P&WC approved components may reduce the life limits.

G. Manpower

Not applicable.

H. Weight and Balance

None.

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1. Planning Information (Cont'd)

I. Electrical Load Data

Not changed.

J. Software Accomplishment Summary

Not applicable.

K. References

Applicable PT6A Instructions for Continued Airworthiness (ICA)
P&WC S.B. No. 1002, 1303, 1403, 1404, 1505 and 1510
Service Information Letter No. PT6A-107, GEN-055 and PT6A-041

L. Publications Affected

None.

M. Interchangeability and Intermixability of Parts

Not applicable.

2. Material Information

A. Industry Support Information

Not applicable.

B. Material - Cost and Availability

Not applicable.

C. Material Necessary for Each Engine

Not applicable.

D. Reidentified Parts

None.

E. Tooling - Price and Availability

Not applicable.

3. Accomplishment Instructions

A. Basic TBO Recommendations:

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3. Accomplishment Instructions (Cont'd)

- (1) The basic industry TBO's are as follows:
 - (a) 3,600 hours for the **PT6A-6, PT6A-6A, PT6A-6B, and PT6A-34B**
 - (b) 3,000 hours for the **PT6A-25, PT6A-25A, and PT6A-25C**
- (2) For maintenance scheduling purposes, one engine per aircraft may be operated an additional 70 calendar days or 200 flight hours, whichever comes first, conditional on the following:
 - (a) The engine has been maintained and operated in accordance with P&WC's Instructions for Continued Airworthiness and operated to an engine TBO interval that is recommended by P&WC;
 - (b) Boroscope inspection of the hot section components per the Engine Maintenance Manual must be carried out and engine found to be in serviceable condition;
 - (c) Only one maintenance scheduling extension per TBO interval is available;
 - (d) The maintenance scheduling hours do not modify the operator's base TBO interval;
 - (e) The operator must notify their local airworthiness authority or equivalent upon use of this extension.
- (3) Engines that are within the basic recommended TBO and that have been maintained or stored per maintenance manual requirements have no related calendar time limits.
- (4) Rotor component life limitations outlined in the latest revision of P&WC P&WC S.B. No. 1002 and P&WC S.B. No. 1402 override TBO considerations.
- (5) Operators who have obtained TBO extension on one engine model covered by this service bulletin and who later acquire other engine models also covered by this service bulletin, with the exception of PT6A-25, PT6A-25A and PT6A-25C may apply this extension to the newly acquired models.

Example: An operator having PT6A-6 engines obtains a TBO of 4,500 hours by adherence to this bulletin purchases aircraft equipped with PT6A-6A engines. The PT6A-6A engines may now be operated to a TBO of 4,500 hours.

- (6) The Hamilton Sundstrand fuel pump may be operated to the engine TBO (basic or extended, as applicable).

NOTE: Refer to periodic inspection of Hamilton Sundstrand fuel pump, per the EMM as applicable.

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3. Accomplishment Instructions (Cont'd)

- (7) The engine accessories that follow may be operated to the engine TBO (basic or extended, as applicable) plus 500 hours. All other accessories may be operated to the engine TBO.

FCU

Fuel Heater

Propeller Governor

Ignition Exciter

Compressor Bleed Valve

Flow Divider/Starting Control Installation

Fuel Pump (Argo-Tech only)

Torque Limiter

Where accessories are removed (for repair or other reason) and subsequently reinstalled, operating time since new or overhaul must be recorded on the repair tag.

- (8) For engines engaged in crop dusting and other chemical applications, refer to P&WC S.B. No.1303 as applicable to the appropriate "AG" model.
- (9) The compressor turbine disk and blade set must be sent for an inspection per the overhaul manual instructions at the intervals that follow:

NOTE: This inspection must include Non-Destructive Testing (NDT) and stretch measurement.

- (a) Compressor turbine disk with full set of new blades installed at last shop visit, inspect within 5,000 hours.
- (b) Compressor turbine disk with full or partial set of previously run compressor turbine blades installed, inspect within 3,000 hours since last compressor turbine blade inspection.
- (10) Pre-SB1404:
First-stage reduction planet gear bearings must be replaced at each and every overhaul, or 8,000 hours, whichever occurs first.
- (11) For Engines PT6A-25C installed on the Pilatus PC-7MKII:
Replace the propeller shaft at every overhaul with a new propeller shaft.
- (12) For Engines PT6A-25C installed on the Embraer EMB-312:
Pre-SB1426:
Replace the propeller shaft at overhaul with a new propeller shaft.
Post-SB1426:
Replace the propeller shaft with a new propeller shaft at every third overhaul or 9,000 hours whichever is less.

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3. Accomplishment Instructions (Cont'd)

- (13) For Engines PT6A-25C installed on the Pilatus PC-7MKII:
Pre-SB1510:
Incorporate the third-stage compressor-stator assembly in accordance with SB No. 1510 at overhaul.
- (14) For Engines PT6A-25, PT6A-25A, PT6A-25C, P&WC recommends to limit the power turbine blades, P/N 3013102, to 6,000 hours of operation with the conditions that follow:

NOTE: You should discard blades that exceed 6,000 hours. Do not install or re-use the blades in any other engine.

- (a) **For Engines in service at issuance of revision No. 34 of this SB:**
Blades above the 6,000 hours limit may stay in service until the next opportunity or scheduled overhaul.
- (b) **At Overhaul:**
Replace the power turbine blades if the blade set running time will exceed 6,000 hours before the next shop visit.

B. TBO Extension Recommendations:

- (1) For operators with an average utilization higher than 300 hours/year, P&WC can provide recommendations for TBO extensions by one of the two options that follow:
 - (a) **Option A -Fleet TBO Extension:** An operator's full fleet of similarly operated and maintained engines, covered by this SB, can have its TBO escalated in 500-hour increments based on a review of the condition of the hardware from one or two engines inducted for overhaul. The recommendation is based on one or two satisfactory overhaul samples. Refer to the Appendix Para. 4.A., 4.B., 4.C. and 4.D.
- (2) TBO Extension recommendations that were approved prior to issue of this SB, per P&WC SB No.1003 revisions 0 to 30, are not affected and remain valid, except that:
 - P&WC No longer endorses on-condition TBO programs on the PT6A engine models
 - Aircraft Gas Turbine Operating Information Letters (AGTOIL) are no longer valid.
- (3) TBO Extension recommendations from P&WC are subject to approval of the operator's local airworthiness authority.

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3. Accomplishment Instructions (Cont'd)

- (4) The TBO established by individual operators and/or for individual engines is independent of the TBO published for the industry.

C. Hot Section Inspection (HSI) Frequency

- (1) The HSI interval does not increase, as the TBO is escalated.
- (2) The recommended scheduled HSI intervals are as follows:
 - (a) PT6A-6, PT6A-6A, PT6A-6B, and PT6A-34B = 1,800 hours
 - (b) PT6A-25, PT6A-25A and PT6A-25C = 1,500 hours
- (3) An additional 50 flight hours or 30 days is available for maintenance scheduling purposes, conditional on the following:
 - (a) The engine has been maintained and operated in accordance with P&WC's Instructions for Continued Airworthiness;
 - (b) Only one maintenance scheduling extension per HSI interval is available;
 - (c) The maintenance scheduling hours do not modify the engine's base HSI interval;
- (4) Alternatively, the HSI frequency can be based on Engine Condition Trend Monitoring in accordance with SIL Gen-055 "Guidelines and Standards for Utilizing the Engine Condition Trend Monitoring (ECTM®)" subject to local Airworthiness Authority approval.
- (5) If trend monitoring is introduced part way through engine life, a Performance recovery wash and HSI must be accomplished to establish a performance base line.

4. Appendix

NOTE: This Appendix provides the procedures and requirements to obtain TBO extension recommendations from P&WC.

A. General Considerations for TBO Extension Recommendations

- (1) A TBO extension recommendation from P&WC is based on both the operator's procedures and experience and on P&WC experience. P&WC experience is based on:
 - (a) Engines that incorporate only P&WC parts originally supplied by P&WC or its authorized distributors or components repaired in accordance with P&WC approved repair process.

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4. Appendix (Cont'd)

- (b) Factory built engines or engines overhauled/repared at a P&WC service center or a P&WC Designated Overhaul Facility (DOF).
- (c) As P&WC experience grows, the TBO extension requirements and limitations may be adjusted accordingly.
- (2) An engine maintains its TBO extension recommendation as long as it is operated within the limitations of the relevant aircraft operating manuals and is maintained in accordance with the appropriate P&WC Maintenance Manual and the terms of this S.B.

NOTE: P&WC recommendation is null and void in instances where engine abuse or non-compliance with this recommendation is reported.

- (3) If the engine was put in storage or was unused since its last overhaul (or since new if not previously overhauled), there must be documented evidence that the engine has been preserved per the Engine Maintenance Manual.
- (4) Extension recommendations are only transferable between operators under circumstances described in option A and B. (Ref. Appendix Para. D (13)), as applicable.
- (5) Recommendations for extension are subject to limitations including the maximum numbers of years between overhauls (Ref. Appendix Para. D (2)).
- (6) TBO extension recommendations from P&WC are subject to fees per S.I.L. No. PT6A-107.
- (7) TBO extensions, recommended by P&WC, do not affect the applicable Warranty and Service Policy originally supplied with the engine. P&WC will continue to use the basic industry TBO (Ref. Para. 3 A.(2)) to calculate the pro-rata credit and the benefits per the Primary Parts Service Policy and/or the Extended Engine Service policy.

B. Assembly and Component Records:

TBO extensions incorporate limitations on the life of certain components. The operator and/or the Maintenance Organization (M.O.) selected by the operator must have a system to log the total accumulated time, i.e. Time Since New (TSN), and the Time Since Overhaul (TSO) of the following assemblies and components:

- (1) Engine time and cycles since new and since last overhaul;
- (2) Accessories time since new or since last overhaul (Ref. Para. 3 A. ((7)));
- (3) Total cycles of life limited rotors (Ref. P&WC S.B. No. 1002 and P&WC S.B. No. 1402)

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4. Appendix (Cont'd)

(4) Total hours since new for the components that follow:

- The mainline ball bearings (bearings No. 1 and No. 4);
- The power turbine blades;
- The compressor turbine blades,
- The first stage sun gears; and
- The first stage planet gears.

NOTE: For non-serialized turbine blades, the total hours since new must be based on the oldest installed blade. For example, if a complete new set of blades is installed at overhaul and 18 blades are replaced at TSO = 1800 hrs, the total time on the entire blade set will still be considered 1800 hrs, even though the 18 newly installed blades have zero time.

C. Configuration Records

P&WC makes available product improvements through the issuance of Service Bulletins (S.B.). The operator and/or the maintenance organization selected by the operator must have a system to log S.B.s that are incorporated in each engine. This is considered especially valuable for operators on providing extended TBO.

D. Option A - Fleet TBO Extension by Overhaul Sample Evaluation

(1) P&WC can provide extension recommendations for the TBO of an operator's fleet of similarly operated and maintained engines. The condition of the engines examined at overhaul is one element of validating that the specific operator is operating and maintaining the engines in a manner that warrants extending the TBO interval for the specific fleet. Other elements include but are not limited to:

- (a) Accuracy of maintenance records.
- (b) Reported condition of hardware at previous maintenance intervals.
- (c) Local regulatory endorsement of operator adherence to OEM recommended operation and maintenance practices. This endorsement should be obtained on a yearly basis.

(2) The time limits applicable under this program are as follows:

TBO Limit:	8,000 hrs
Calendar Limit:	Engines may operate at the extended TBO for a maximum period of 12 years since new or since overhaul as applicable, or as otherwise agreed in writing by P&WC.

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4. Appendix (Cont'd)

- (3) To make sure that engine durability is maintained as the engines are operated into their subsequent extended overhaul intervals, the components listed in the Appendix, Para. 4.B.(4), that are used for engine reassembly at overhaul, must not have more than 12,000 hours since new (see Note). Also, all the SBs listed in the Appendix, Para. 4.C. and all applicable category 1, 2 and 3 service bulletins must be incorporated in the build of the sample engine and at the next overhaul of other engines in the fleet for which the TBO extension is applicable.

NOTE: Refer to paragraph 3.A.((9)) for specific requirements related to the compressor turbine blades.

- (4) For the PT6A-6, 6A, 6B and 34B:
Normal TBO extension recommendations are 500 hours. For TBO extension up to 5,100 hours one representative sample engine per 500 hrs increment is required. For TBO extensions above 5,100 hours two representative sample engines per 500 hrs increment are required.
- (5) For the PT6A-25, 25A and 25C:
Normal TBO extension recommendations are 500 hours. For TBO extension up to 4,500 hours one representative sample engine per 500 hrs increment is required. For TBO extensions above 4,500 hours two representative sample engines per 500 hrs increment are required.
- (6) Requirements applicable to the sample(s):
- (a) The sample must have a Time Since Overhaul (TSO) that is within 250 hours of the current TBO period. Engines that have more hours than the current P&WC recommended TBO are also acceptable but the extension will be based on the currently recommended P&WC TBO.
- (b) The sample must have been operated by the current operator for the majority of the TBO period (i.e. for more than 50% of the current TBO interval).
- (c) The sample engine must not have had a shop visit for major repairs (overhaul manual level) during the current TBO interval (i.e. only Maintenance Manual level tasks and repairs have been carried out).
- (d) The operator must complete the fleet TBO Evaluation Sample Request Form - Option A (Ref. Fig. 1) and the fleet evaluation form (Ref. Fig. 2) and submit them to their P&WC service center or Designated Overhaul Facility (DOF) for forwarding to P&WC.

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4. Appendix (Cont'd)

- (e) The sample engines must be sent to a P&WC service centre or P&WC DOF for the TBO evaluation. The sample engines must be sent to a P&WC service centre or P&WC DOF for the TBO evaluation. The evaluation consist of 2 stages, the first portion consists of a visual examination of the engines prior to cleaning to assess whether the hardware appears capable of 500 hours of further operation. Following satisfactory completion of this phase the second portion consist of detailed examination of the components to the requirements of the P&WC OHM. The P&WC DOF or P&WC Service Centre will forward the TBO Evaluation Sample Request Form (Ref. Fig. 1), the Operator's Fleet Information Form (Ref. Fig. 2), and the TBO Evaluation Hardware Report to P&WC for review and request a TBO extension. After one or two successful samples, depending on the TBO escalation threshold (Ref D,(4)) P&WC will issue a letter to the operator stating that a TBO extension is recommended, subject to the approval of the operator's Airworthiness Authority.

NOTE: 1. When shipping an engine to a P&WC Service Centre or P&WC DOF as a sample, operators should state that it is a sample and request a TBO extension evaluation report.

NOTE: 2. Forward all documents to pt6atboevaluation@pwc.ca

NOTE: 3. Refer to P&WC SIL PT6A-041 for further information.

- (7) Should a sample be rejected P&WC will not consider a TBO escalation unless the operator defines the actions taken to correct the observed conditions.
- (8) The extended TBO may apply to other eligible engines in the operator's fleet covered by the same TBO SB.
- (9) Extended TBO intervals for engines which were added to the fleet from another operator are subject to the pro-rating formula in Para. (13). This formula must be used again when a fleet TBO extension is granted (Ref. Para. 13, Example 2).
- (10) The TBO extension process may be repeated when the next engine reaches the new escalated TBO interval.
- (11) Certain circumstances may warrant a higher TBO extension increment. These will be reviewed on a case by case basis upon written request.
- (12) P&WC reserves the right to request additional information on the sample condition, or further TBO extension samples, and this request does not herein imply that P&WC will automatically recommend the extension.
- (13) The TBO escalation recommendation is subject to the approval of the operators local Airworthiness Authority.

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4. Appendix (Cont'd)

(14) Transfer of Fleet TBO Extension Recommendations

Fleet TBO extensions are valid only as long as the operator, the Maintenance Organization (M.O.), and the typical mission remain unchanged. The following conditions apply for P&WC to transfer the recommendation to a new M.O., a new operator, or a new application (typical mission):

NOTE: If an operator chooses a new M.O. that already supports operators who have approval for engines covered by this SB and to the same or higher TBO, no action is required.

- (a) For changes limited to the selection by the operator of a new M.O., the change will have no effect if the maintenance plan remains unchanged and the newly selected M.O. is already supporting operators who have approval for engines covered by this SB and to the same or higher TBO.
- (b) For the transfer of an engine to a different fleet extended TBO, the operator can use a pro-rating formula. This formula is generally recognized by regulatory authorities. The TBO applicable to an engine in these circumstances is the fleet TBO formerly applicable and the fleet TBO established for the new operator, Maintenance Organization and mission for the same engine models. It is then weighted on the basis of the time remaining to overhaul under the original operation. The formula for this purpose is:

$$X = Y * a/b$$

where

X = time remaining to overhaul on new program (buyer's TBO)

Y = time remaining to overhaul on previous program (seller's TBO)

a = TBO interval on new program (buyer's TBO)

b = TBO interval on previous program (seller's TBO)

Example 1:

An aircraft is transferred (by sale or lease) between two operators. The previous operator's engine TBO is 8,000 hours and the new operator's engine TBO is 5,000 hours and the engine has a time since overhaul (TSO) of 6,000 hours

Time remaining to overhaul on the previous program:

$$Y = 8,000 - 6,000 = 2,000 \text{ hours.}$$

PRATT & WHITNEY CANADA

SERVICE BULLETIN

P&WC S.B. No. 1003R35

TURBOPROP ENGINE

OPERATING TIME BETWEEN OVERHAULS AND HOT SECTION INSPECTION FREQUENCY

4. Appendix (Cont'd)

Time remaining to overhaul on the new program:

$$X = Y * a/b$$

$$X = 2,000 * 5,000/8,000 = 1,250 \text{ hours}$$

Therefore this engine may be operated to a one time TBO interval of 7,250 hours. After overhaul, the engine TBO will revert to the new owners TBO, which is 5,000 hrs. in this example.

Example 2:

An operator obtains a recommendation from P&WC for a TBO extension from 5,000 to 5,500 hours, but one of the engines was purchased from an operator with a TBO of 8,000 hours and is currently running to a TBO of 7,250 hours (Ref. Example 1). The new TBO interval will be calculated using the pro-rating formula and the TSO of the engine at entry to the new operator's fleet (6,000 hours).

Time remaining to overhaul on the previous program:

$$Y = 8,000 - 6,000 = 2,000 \text{ hours.}$$

Time remaining to overhaul on the new program:

$$X = Y * a/b$$

$$X = 2,000 * 5,500/8,000 = 1,375 \text{ hours}$$

Therefore this engine may be operated to a one time TBO interval of 7,375 hours. After overhaul, the engine TBO will revert to the new owners TBO, which is 5,500 hrs. in this example.