

ALERT SERVICE BULLETIN
Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

NO. 412-04-113

DATE 02-17-04

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DATE
REV

MODEL AFFECTED: 412 & 412EP

SUBJECT: PRATT WHITNEY CANADA SERVICE
INFORMATION LETTER (PT6T- 040) FUEL FLOW
TRANSDUCER KIT REMOVAL, INTRODUCTION
OF

HELICOPTERS AFFECTED: All Model 412 & 412 EP helicopters that have fuel
flow transducer kit installed.

COMPLIANCE: Within the next 150 hours of flight time following the
receipt of this bulletin.

DESCRIPTION:

Pratt & Whitney has discovered a potential fuel leak with subject kit installed. The intent of the attached Pratt & Whitney Service Information Letter is to remove the subject fuel-flow transducer kit.

Bell Helicopter is also aware of six fuel differential switches P/N 42D218 that were found to be leaking fuel with fuel flow transducer kit installed. The leakage occurred at a crack in the solder joint at the base of the electrical receptacle on the top side of the pressure switch housing. Tests have shown that fuel pressure with fuel flow meter installed causes significant increase of fuel pressure fluctuation causing premature cracking of the internal switch diaphragm. Once the internal switch diaphragm is cracked, fuel migrates to the upper electrical portion of fuel pressure switch. Fuel differential switches installed with subject kit must be removed from service.

Part I of this bulletin refers to the Pratt & Whitney Service Information Letter PT6T-40 which request operators to remove subject fuel-flow meter transducer.

Part II of this bulletin gives instruction to remove and replace fuel differential switch P/N 42D218.

APPROVAL:

Not required.

MANPOWER:

Refer to fuel-flow transducer installation manual for Part I of this bulletin.

Approximately 2.0 man-hours are required to complete Part II of this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

WARRANTY:

Owners/operators of 412 helicopters' who comply with the instructions outlined in this bulletin will receive a special 100% warranty credit for the replacement parts contained in the "Required Material" section of this bulletin.

To receive this credit:

Purchase the required kit from an approved BHTI supply source.
Comply with the instructions contained in this bulletin no later than February 17, 2005.
Submit a completed malfunction report to BHTI Warranty no later than 30 days after completion of this bulletin.

- NOTE -

Customers who fail to comply with the instruction in this bulletin after February 17, 2005 are not eligible for the special warranty credit provisions listed above.

MATERIAL:

Required Material:

The material that follows is necessary to complete Part II of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
42D218 *	Switch, Pressure	2
MS29512-04	Packing	4

* Pressure switch P/N 42D399 is an alternate to pressure switch P/N 42D218

Consumable Material:

Not required

SPECIAL TOOLS:

None required

WEIGHT AND BALANCE:

Refer to Fuel Flow Transducer Kit installation manual.

ELECTRICAL LOAD DATA:

Refer to Fuel Flow Transducer Kit installation manual.

REFERENCES:

Refer to Fuel Flow Transducer Kit installation manual for Part I of this bulletin.

Refer to the following manuals for Part II of this bulletin.

BHT-412-IPB Illustrated Parts Breakdown, Chapter 71

BHT-412-CR&O Component Repair and Overhaul Manual, Chapter 71

PUBLICATIONS AFFECTED:

None affected

ACCOMPLISHMENT INSTRUCTIONS:

PART I: Refer to Fuel Flow Transducer Kit installation manual for Part I of this bulletin.

PART II: Refer to BHT-412-CR&O, Chapter 71 for removal and installation of the fuel differential pressure switch.



SERVICE INFORMATION LETTER

Subject: STC Fuel Flow Transducer Kit for Bell 212 / 412 Helicopters - Potential Fuel Leak

Applicability: PT6T Engines Installed in Bell 212 / 412 Helicopters

The purpose of this Service Information Letter (SIL) is to notify operators of the potential for fuel leak developing with the subject kit installed and to request that these kits be removed from PT6T-3 series engine installations. Pratt and Whitney Canada Corp. (P&WC) is aware of two fuel leak events that occurred resulting from fuel tubes being repositioned during the incorporation of the subject kit, such that fretting against the adjacent inlet cowling occurred. The fuel flow transducer kit in question is certified under a Supplementary Type Certificate (STC).

The installation procedures for the subject kit require that four holes be drilled through the power section's forward lifting bracket. P&WC is concerned that this modification to the bracket plus the additional loads imposed by the kit may compromise the bracket's integrity. Furthermore, the Manual Fuel Control (MFC) fuel outlet tube (P/N 3017392) is relocated to a position that it was not designed for. This is contrary to P&WC standard practices that at no time shall tubes be forcibly modified and fitted into position under noticeable tension or load. In the subject installation, the MFC fuel outlet tube is subjected to significant bending motions that may lead to fracture of the tube as well as moving into close proximity to the cowling.

For the above reasons, P&WC disagrees with the method by which this kit currently interfaces with the engine. Therefore, P&WC requests that operators remove the subject fuel-flow transducer kit and replace distorted fuel lines and modified lifting brackets with serviceable components conforming to the engine bill of material.

Per the Maintenance Manual (MM), all tubes should be inspected for security, evidence of wear and leaks every 150 hours. P&WC highly recommends that for helicopters equipped with the subject kit, operators inspect the MFC tubes more frequently than the recommended interval. Please note that this in no way constitutes P&WC's position that the kit remain installed but is a recommendation pending receipt of replacement serviceable hardware.

P&WC has formally advised Transport Canada and the kit's manufacturer of the above concerns. Bell Helicopter has also been informed of these concerns.

For details on P&WC's position on STC's, please refer to SIL GEN-013.

This Service Information Letter is valid until superceded or cancelled by revision

ISSUED: 20 February 2002

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SERVICE INFORMATION LETTER**

PWC: PT6T-040

For details on the correct procedures for the installation of tubes, please refer to the Standard Practices section of the PT6T engine MM and SIL PT6T-039.

If you require assistance or additional information, please contact your P&WC Field Support Representative (FSR) or the P&WC 24 Hour Help Desk at:

Canada / USA: 1-800-268-8000
Non Canada/USA: (international access code)+8000-268-8000
Non Toll Free Number: (450) 647-8000
Fax: (450) 647-2888
E-mail: Customerhelpdesk@pwc.ca

Yours truly,

PRATT & WHITNEY CANADA CORP.



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