

# **SUBARU BELL 412EPX**

## **EPX SUPPLEMENT**

### **NOTICE**

**The instructions set forth in this manual, as supplemented or modified by Alert Service Bulletins (ASB) or other directions issued by Bell and Airworthiness Directives (AD) issued by the applicable regulatory agencies, shall be strictly followed.**

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## Highlights

The listed changes are introduced in issue 008, dated 2025-02-07, of this publication.

C = Changed data module, N = New data module

N/C	Data module	Reason for update
Chapter 05 - Inspections:		
C	<a href="#">412-A-05-40-00-21A-281A-A / 00016</a> , Scheduled Inspections - 100-Hour/12-Month Inspection - Part A	Added steps 5 and 6 in Battery System section.
C	<a href="#">412-A-05-40-00-25A-281A-A / 00020</a> , Scheduled Inspections - 300-Hour/12-Month Inspection - Part B	Added new battery system section in table 1.
C	<a href="#">412-A-05-10-00-01A-281A-A / 00036</a> , Component Overhaul Schedule - Inspection	Removed note 3 from the overhaul interval of transmission assembly in table 1. Deleted note 3.
Chapter 65 - Tail Rotor Drive System:		
C	<a href="#">412-A-65-20-02-00A-520A-A / 00575</a> , Intermediate Gearbox - Removal	Modified procedural step 1 and support equipment to change the drain line part number from "DB-3703-30" to "111496953".
C	<a href="#">412-A-65-20-02-01A-520A-A / 00582</a> , Sight Glass - Removal	Modified procedural step 2 and 6, and support equipment to change the drain line part number from 'DB-3703-30' to '111496953'.
C	<a href="#">412-A-65-20-02-02A-520A-A / 00585</a> , Chip Detector - Removal	Modified procedural step 5.4 and support equipment to change the drain line part number from "DB-3703-30" to "111496953".
C	<a href="#">412-A-65-20-03-00A-520A-A / 00592</a> , Tail Rotor Gearbox - Removal	Modified procedural step 1 and support equipment to change the drain line part number from "DB-3703-30" to "111496953".
C	<a href="#">412-A-65-20-03-01A-520A-A / 00598</a> , Sight Glass - Removal	Modified procedural step 2 and support equipment to change the drain line part number from 'DB-3703-30' to '111496953'.
C	<a href="#">412-A-65-20-03-02A-520A-A / 00601</a> , Chip Detector - Removal	Modified procedural step 6 and support equipment to change the drain line part number from "DB-3703-30" to "111496953".
Chapter 76 - Engine Controls:		
C	<a href="#">412-A-76-00-00-13A-320B-A / 00692</a> , Engine Control - Operational Check	Modified the procedure step 6 from "Confirm that %NG, %NR-FILT, %NP-FILT, and %TRQ all display 0.0 as values".
Chapter 96 - Electrical System:		
C	<a href="#">412-A-96-20-00-00A-042A-A / 01128</a> , Warning/Caution/ Advisory System - Warning Message - Description	Modified the PSI values at Steps 1.7, 1.8 and 1.14.
Chapter 97 - Avionics System:		
C	<a href="#">412-A-97-14-00-01A-520A-A / 01390</a> , Attitude Heading Reference Unit (AHRU) - Removal	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.
C	<a href="#">412-A-97-14-00-01A-251A-A / 01391</a> , Attitude Heading Reference Unit (AHRU) - Cleaning	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.
C	<a href="#">412-A-97-14-00-01A-280A-A / 01392</a> , Attitude Heading Reference Unit (AHRU) - Inspection	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.
C	<a href="#">412-A-97-14-00-01A-720A-A / 01394</a> , Attitude Heading Reference Unit (AHRU) - Installation	Modified figure 1 (sheet 2) to remove torque symbol from callout 8. Modified procedural step 5 to remove torque.
C	<a href="#">412-A-97-14-00-02A-520A-A / 01395</a> , MSU Cal Prom - Removal	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.
C	<a href="#">412-A-97-14-00-02A-720A-A / 01396</a> , MSU Cal Prom - Installation	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.

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N/C	Data module	Reason for update
C	412-A-97-14-00-03A-520A-A / 01397, AHRU Mounting Tray and Fan - Removal	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.
C	412-A-97-14-00-03A-251A-A / 01398, AHRU Mounting Tray and Fan - Cleaning	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.
C	412-A-97-14-00-03A-280A-A / 01399, AHRU Mounting Tray and Fan - Inspection	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.
C	412-A-97-14-00-03A-720A-A / 01401, AHRU Mounting Tray and Fan - Installation	Modified figure 1 (sheet 2) to remove torque symbol from callout 8.

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**LIST OF CHAPTERS**

<b>Chapter</b>	<b>Data module code</b>
Chapter 01 - Introduction	412-A-01-00-00-00A-009A-A / 00006
Chapter 04 - Airworthiness Limitations Schedule	412-A-04-00-00-00A-009A-A / 00010
Chapter 05 - Inspections	412-A-05-00-00-00A-009A-A / 00012
Chapter 06 - Dimensions and Charts	
Chapter 07 - Lifting and Jacking	
Chapter 08 - Weight and Balance	
Chapter 09 - Towing	
Chapter 10 - Parking and Mooring	
Chapter 11 - Placards and Markings	
Chapter 12 - Servicing	412-A-12-00-00-00A-009A-A / 00043
Chapter 18 - Vibration and Noise Analysis	
Chapter 21 - Air Distribution (Ventilation)	
Chapter 22 - Automatic Flight Control System (AFCS)	412-A-22-00-00-00A-009A-A / 00048
Chapter 25 - Equipment and Furnishings	
Chapter 26 - Fire protection	412-A-26-00-00-00A-009A-A / 00144
Chapter 28 - Fuel System	412-A-28-00-00-00A-009A-A / 00168
Chapter 29 - Hydraulic System	412-A-29-00-00-00A-009A-A / 00359
Chapter 30 - Ice and Rain Protection	
Chapter 32 - Landing Gear	412-A-32-00-00-00A-009A-A / 00380
Chapter 52 - Doors and Windows	
Chapter 53 - Fuselage	412-A-53-00-00-00A-009A-A / 00456
Chapter 62 - Main Rotor	
Chapter 63 - Main Rotor Drive System	412-A-63-00-00-00A-009A-A / 00467
Chapter 64 - Tail Rotor	
Chapter 65 - Tail Rotor Drive System	412-A-65-00-00-00A-009A-A / 00569
Chapter 67 - Flight Controls	412-A-67-00-00-00A-009A-A / 00605
Chapter 71 - Power Plant	412-A-71-00-00-00A-009A-A / 00641
Chapter 76 - Engine Controls	412-A-76-00-00-00A-009A-A / 00668
Chapter 79 - Engine Oil System	412-A-79-00-00-00A-009A-A / 00699
Chapter 95 - Instrument System	412-A-95-00-00-00A-009A-A / 00718
Chapter 96 - Electrical System	412-A-96-00-00-00A-009A-A / 00997
Chapter 97 - Avionics System	412-A-97-00-00-00A-009A-A / 01300
Chapter 98 - Wiring Diagrams	412-A-98-00-00-00A-009A-A / 01491

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### List of Effective Data Modules

The listed documents are included in issue 008, dated 2025-02-07, of this publication.

C = Changed data module, N = New data module

Document title	Data module code / Seq number	Issue date	Applicable to
<a href="#">Temporary revision record - Technical standard records</a>	DMC-412-A-00-72-02-00A-008A-A / 00002	2023-05-25	ALL
<a href="#">Customer support and services - Function</a>	DMC-BHT-A-00-00-00-00A-011A-A / 00003	2021-11-09	ALL
<a href="#">Warranty and Customer Feedback - Administrative forms and data</a>	DMC-BHT-A-00-00-00-00A-023A-A / 00004	2023-04-26	ALL
<a href="#">Use of a S1000D publication - Introduction</a>	DMC-BHT-A-00-00-00-00A-018A-A / 00005	2020-12-18	ALL



**Temporary revision record - Technical standard records**

This temporary revision record provides a current listing of active temporary revisions against the manual. Temporary revisions which have been canceled/incorporated will only be maintained on the record until the next revision is issued. If there are no temporary revisions shown on the record, this is confirmation that there are no temporary revisions issued against the manual.

Temporary Revision No.	Title	Date issued	Date canceled

## Customer support and services - Function

### 1. Customer support and services

Flying smart means that no matter where you are, or what time it is, you can make a call and get additional information, clarification, or advice on a technical or operational issue concerning your helicopter or information contained in our Technical Publications. Product Support Engineering (PSE) is just a phone call away and may be contacted as follows:

Phone: 450-437-2862 or 800-363-8023 (US/Canada)

Fax: 450-433-0272

E-mail: [productsupport@bellflight.com](mailto:productsupport@bellflight.com)

## Warranty and Customer Feedback - Administrative forms and data

### WARNING

THIS MANUAL APPLIES ONLY TO HELICOPTERS AND COMPONENTS MAINTAINED IN ACCORDANCE WITH BELL APPROVED PROCEDURES USING BELL APPROVED PARTS.

ALL INSPECTION, REPAIR AND OVERHAUL PROCEDURES PUBLISHED BY BELL, INCLUDING PART RETIREMENT LIFE, ARE BASED SOLELY ON THE USE OF BELL PARTS THAT HAVE BEEN MAINTAINED USING BELL APPROVED DATA. THE DATA PUBLISHED HEREIN OR OTHERWISE SUPPLIED BY BELL IS NOT APPLICABLE TO NON-BELL PARTS OR PARTS THAT HAVE BEEN REPAIRED USING DATA AND/OR PROCESSES NOT APPROVED BY BELL.

BELL IS NOT RESPONSIBLE FOR ANY PART OTHER THAN THOSE THAT IT HAS APPROVED.

BEFORE PERFORMING ANY PROCEDURE CONTAINED IN THIS MANUAL YOU MUST INSPECT THE AFFECTED PARTS AND RECORDS FOR EVIDENCE OF ANY MANUFACTURE, REPAIR, REWORK, OR USE OF A PROCESS NOT APPROVED BY BELL.

IF YOU IDENTIFY OR SUSPECT THE USE OF PARTS NOT AUTHORIZED BY BELL, EITHER REMOVE THE AFFECTED ITEM FROM THE AIRCRAFT OR OBTAIN INSTRUCTIONS FOR CONTINUED AIRWORTHINESS FROM THE MANUFACTURER OR THE ORGANIZATION THAT APPROVED THE REPAIR.

For Spare Parts Warranty, refer to [Table 1](#)

For New Helicopter Warranty, refer to [Table 2](#)

#### Table 1. Spare Parts Warranty

### SPARE PARTS WARRANTY

**WARRANTY:** Seller warrants each new helicopter part or helicopter part reconditioned by Seller to be free from defect in material and workmanship under normal use and service and if installed on Bell model helicopters for up to 1000 hours of operation, one (1) year from date of installation, or two (2) years from date of shipment by Seller, whichever occurs first. Seller assigns each manufacturer's warranty to Buyer to the extent such manufacturer's warranty exists and is assignable.

Seller's sole obligation under this warranty is limited to the repair or replacement of parts which are determined to Seller's reasonable satisfaction to have been defective within the applicable warranty period as described above. Replacement of parts may be either new or reconditioned at Seller's election and at the lowest allowable maintenance level contained in Seller's manuals, service bulletins or applicable supplier manuals.

Seller shall also reimburse reasonable freight charges, excluding insurance, customs fees, duties, handling fees, and taxes. Seller shall not reimburse Buyer for any parts repaired or replaced outside of the Seller's Warranty Claims Process unless express prior written authorization is granted by Seller's Warranty Department to Buyer for such repair or replacement.

Parts, components and assemblies of all helicopter parts may have been restored or reworked due to marks, blemishes, dents or other irregularities during the manufacturing process. Such restoration and/or rework are permitted under Seller's approved manufacturing and engineering processes and guidelines. The restoration and/or rework so completed do not render such items defective in material or workmanship

**NO FAULT FOUND:** In the event Seller determines, after evaluation of a returned part, that a defect does not exist, then Buyer shall pay all expenses incurred by Seller related to the return including, but not limited to, costs incurred in shipping and evaluating the part and cost for any replacement part and restocking of the part, which may include a fifteen percent (15%) restocking fee, per item, No Fault Found fee charged to Seller or a minimum of \$300.00 USD. In addition, Seller shall not reimburse Buyer for any costs related to the removal or reinstallation of such a part.

**SELLER'S WARRANTY CLAIM PROCESS:** Defective parts must be reported in writing to the Seller's Warranty Administration within thirty (30) days of being found defective. Parts may be repaired or replaced with new or reconditioned parts, at Seller's election. Warranty adjustment is contingent upon the Buyer complying with the Seller's Warranty Process and with the Seller's Warranty Administration disposition instructions for defective parts. Failure to properly comply with Seller's Warranty Process may, at Seller's sole option, void Seller's warranty as to the allegedly defective part.

**RETURN SHIPMENT:** Parts returned to Seller will be eligible for remedy under this warranty only if the part is carefully packed by the Buyer for the return shipment. Damage occurring to a part due to improper packaging may result in the denial of a warranty claim. In the event that Seller determines a returned part to be damaged or unsalvageable due to improper packaging, the Buyer will be billed repair or replacement cost incurred by Seller. The party initiating shipment bears the risk of loss or damage to parts in transit.

**Table 1. Spare Parts Warranty (continued)**

**CORE RETURNS:** Per Seller's determination that a core return is required for which Seller has furnished a replacement part through the Warranty Process shall be shipped by Buyer, with all historical service records, to a facility designated by Seller, within thirty (30) days of shipment by Seller of the replacement part. Buyer shall provide Seller with proof of shipment within thirty (30) days following shipment of the replacement part. In the event that Buyer fails to provide Seller with such proof of shipment within the thirty (30) days, fails to provide the applicable historical service records or provide the correct RMA, Buyer shall be charged the new list price of the replacement part. If the Buyer returns the core, and provides the historical records and the RMA after the 31st day, the Buyer will be credited the invoiced amount upon receipt of the core minus a restocking fee of fifteen percent (15%), or minimum of \$300.00 USD, per item, of the then said standard list price of the material provided. If Historical Records are not provided and can be recreated by Seller, a debit of \$500.00 USD per item will occur to Buyers account.

**WARRANTY AND LIABILITY DISCLAIMERS AND EXCLUSIONS:** THIS WARRANTY IS GIVEN AND ACCEPTED IN PLACE OF (i) ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND (ii) ANY OBLIGATION, LIABILITY, RIGHT, CLAIM OR REMEDY IN CONTRACT OR IN TORT, INCLUDING PRODUCT LIABILITIES BASED UPON STRICT LIABILITY, NEGLIGENCE, OR IMPLIED WARRANTY IN LAW.

This warranty is the only warranty made by Seller. The Buyer's sole remedy for a breach of this warranty or any defect in a part is the repair or replacement of the helicopter part and reimbursement of reasonable freight charges. Seller excludes liability, whether as a result of a breach of contract or warranty, negligence or strict product liability, for incidental, special, consequential and/or punitive damages, including without limitation, damage to the helicopter or other property, costs and expenses resulting from required changes or modifications to helicopter components and assemblies, changes in retirement lives and overhaul periods, local customs fees and taxes, and costs or expenses for commercial losses or lost profits due to loss of use or grounding of helicopters or otherwise.

Seller makes no warranty and disclaims all liability in contract or in tort, including, without limitation, negligence and strict tort liability, with respect to work performed by third parties at Buyer's request and with respect to engines, engine accessories, batteries, paint, radios, any and all customizing equipment, and Buyer furnished equipment or equipment manufactured by others (e.g. STC kits) and installed at Buyer's request.

Seller makes no warranty and disclaims all liability with respect to components or parts damaged by, or worn due to, normal wear and tear, erosion or corrosion. Seller makes no warranty and disclaims all liability for consumables which are defined as items required for normal and routine maintenance or replaced at scheduled intervals shorter than the warranty period. "Consumables" include but are not limited to engine and hydraulic oil, oil filters, packings and o-rings, anti-corrosion and/or sealing compounds, brush plating material, nuts, bolts, washers, screws, fluids, compounds, and standard aircraft hardware that is readily available to aircraft operators from sources other than Seller.

This warranty shall not apply to any helicopter part which has been repaired or altered outside Seller's factory in any way so as, in Seller's sole judgment, to affect its stability, safety or reliability. This warranty shall not apply to any helicopter part which has been subject to misuse, negligence or accident, or which has been installed in any aircraft which has been destroyed. Repairs and alterations which use or incorporate parts and components other than genuine Bell parts or parts approved by Bell for direct acquisition from sources other than Bell itself are not warranted by Bell, and this warranty shall be void to the extent that such repairs and alterations, in Seller's sole judgment, affect the stability, safety or reliability of the helicopter or any part thereof, or damage genuine Bell or Bell-approved parts. No person, corporation or organization, including Bell Authorized Customer Service Facilities, is authorized by Seller to assume for it any other liability in connection with the sale of its helicopters and parts.

NO STATEMENT, WHETHER WRITTEN OR ORAL, MADE BY ANY PERSON, CORPORATION OR ORGANIZATION, INCLUDING BELL AUTHORIZED CUSTOMER SERVICE FACILITIES, MAY BE TAKEN AS A WARRANTY NOR WILL IT BIND SELLER.

**CHOICE OF LAW AND JURISDICTION:** This warranty shall be interpreted under and governed by the laws of the State of Texas. All legal actions based upon claims or disputes pertaining to or involving this warranty including, but not limited to, Seller's denial of any claim or portion thereof under this warranty, must be filed in the courts of general jurisdiction of Tarrant County, Texas or in the United States District Court for the Northern District of Texas, Ft. Worth Division located in Ft. Worth, Tarrant County, Texas. In the event that Buyer files such an action in either of the court systems identified above, and a final judgment in Seller's favor is rendered by such court, then Buyer shall indemnify Seller for all costs, expenses and attorneys' fees incurred by Seller in defense of such claims. In the event Buyer files such a legal action in a court other than those specified, and Seller successfully obtains dismissal of that action or transfer thereof to the above described court systems, then Buyer shall indemnify Seller for all costs, expenses and attorneys' fees incurred by Seller in obtaining such dismissal or transfer.

**Table 2. New Helicopter Warranty**

**NEW HELICOPTER WARRANTY**

**Table 2. New Helicopter Warranty (continued)**

**WARRANTY:** Seller warrants each new helicopter to be free from defect in material or workmanship under normal use and service for 1,000 hours of operation or three (3) years from acceptance, whichever occurs first. Spare parts installed as warranty replacement on helicopters which are covered by this New Helicopter Warranty will only be warranted for the balance of the original aircraft warranty. Seller assigns each manufacturer's warranty to Buyer to the extent such manufacturer's warranty exists and is assignable.

In addition, during the first year or within 1,000 hours of total aircraft time, whichever occurs first, the Seller shall reimburse Buyer at a regional labor rate, as determined solely by Seller, for reasonable actual labor costs incurred directly related to removal and reinstallation of parts determined to be defective. Seller shall not reimburse labor costs incurred for any other activity, such as troubleshooting, inspection, testing or similar activities; any reimbursement amount issued in accordance with this warranty shall be in Seller's sole discretion. Seller shall not reimburse any labor costs (1) which it does not deem to be reasonable, (2) which it does not deem directly related to removal and reinstallation, or (3) for buyer furnished equipment or equipment manufactured by other (e.g. STC).

Seller shall also reimburse reasonable freight charges, excluding insurance, customs fees, duties, handling fees, and taxes. Seller shall not reimburse Buyer for any parts repaired or replaced outside of the Seller's Warranty Claims Process unless express prior written authorization is granted by Seller's Warranty Department to Buyer for such repair or replacement.

Parts, components and assemblies of all helicopter parts may have been restored or reworked due to marks, blemishes, dents or other irregularities during the manufacturing process. Such restoration and/or rework are permitted under Seller's approved manufacturing and engineering processes and guidelines. The restoration and/or rework so completed do not render such items defective in material or workmanship.

Seller's sole obligation under this warranty is limited to the repair or replacement of parts which are determined to Seller's reasonable satisfaction to have been defective within the applicable warranty period as described above. Replacement of parts may be either new or reconditioned at Seller's election and at the lowest allowable maintenance level contained in Seller's manuals, service bulletins or applicable Supplier manuals.

**NO FAULT FOUND:** In the event Seller determines, after evaluation of a returned part, that a defect does not exist, then Buyer shall pay all expenses incurred by Seller related to the return including, but not limited to, costs incurred in shipping, evaluating the part, cost for any replacement part and restocking of the part which is a minimum of \$300.00USD or up to fifteen percent (15%) list price of the part, as well as any No Fault Found fees incurred by Seller. In addition, Seller shall not reimburse Buyer for any costs related to the removal or reinstallation of such a part.

**SELLER'S WARRANTY CLAIM PROCESS:** Defective parts must be reported in writing to the Seller's Warranty Administration within thirty (30) days of being found defective. Parts may be repaired or replaced with new or reconditioned parts, at Seller's election. Warranty adjustment is contingent upon the Buyer complying with the Seller's Warranty Process and with the Seller's Warranty Administration disposition instructions for defective parts. Failure to properly comply with Seller's Warranty Process may, at Seller's sole option, void Seller's warranty as to the allegedly defective part.

**RETURN SHIPMENT:** Defective parts returned to Seller will be eligible for remedy under this warranty only if the part is carefully packed by the Buyer for the return shipment. Damage occurring to a part due to improper packaging may result in the denial of a warranty claim. In the event that Seller determines a returned part to be damaged or unsalvageable due to improper packaging, the Buyer will be billed repair or replacement cost incurred by Seller. The party initiating shipment bears the risk of loss or damage to parts in transit.

**CORE RETURNS:** Per Seller's determination that a core return is required for which Seller has furnished a replacement part through the Warranty Process, the core shall be shipped by Buyer, with all historical service records, to a facility designated by Seller, within thirty (30) days of shipment by Seller of the replacement part. Buyer shall provide Seller with proof of shipment within thirty (30) days following shipment of the replacement part. In the event that Buyer fails to provide Seller with such proof of shipment within the thirty (30) days, fails to provide the applicable historical service records or provide the correct RMA, Buyer shall be charged the new list price of the replacement part. If the Buyer returns the core, and provides the historical records and the RMA after the 31st day, the Buyer will be credited the invoiced amount upon receipt of the core minus a restocking fee minimum of \$300.00 USD or up to fifteen percent (15%), per item, of the then standard list price of the material provided. If Historical Records are not provided and can be recreated by Seller, a debit of \$500.00 USD per item will be made to Buyers account.

**WARRANTY AND LIABILITY DISCLAIMERS AND EXCLUSIONS:** THIS WARRANTY IS GIVEN AND ACCEPTED IN PLACE OF (i) ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND (ii) ANY OBLIGATION, LIABILITY, RIGHT, CLAIM OR REMEDY IN CONTRACT OR IN TORT, INCLUDING PRODUCT LIABILITIES BASED UPON STRICT LIABILITY, NEGLIGENCE, OR IMPLIED WARRANTY IN LAW.

**Table 2. New Helicopter Warranty (continued)**

*This warranty is the only warranty made by Seller. The Buyer's sole remedy for a breach of this warranty or any defect in a part is the repair or replacement of the helicopter part, reimbursement of reasonable freight charges, and reimbursement of reasonable labor costs directly related to removal and reinstallation as provided herein. Seller excludes liability, whether as a result of a breach of contract or warranty, negligence or strict product liability, for incidental or consequential damages, including without limitation, damage to the helicopter or other property, costs and expenses resulting from required changes or modifications to helicopter components and assemblies, changes in retirement lives and overhaul periods, local customs fees and taxes, and costs or expenses for commercial losses or lost profits due to loss of use or grounding of helicopters or otherwise.*

*Seller makes no warranty and disclaims all liability in contract or in tort, including, without limitation, negligence and strict tort liability, with respect to work performed by third parties at Buyer's request and with respect to engines, engine accessories, batteries, paint, radios, any and all customizing equipment, and Buyer furnished equipment or equipment manufactured by others (e.g. STC kits) and installed at Buyer's request.*

*Seller makes no warranty and disclaims all liability with respect to components or parts damaged by, or worn due to, normal wear and tear, erosion or corrosion. Seller makes no warranty and disclaims all liability for consumables which are defined as items required for normal and routine maintenance or replaced at scheduled intervals shorter than the warranty period. "Consumables" include but are not limited to engine and hydraulic oil, oil filters, packings and o-rings, anti-corrosion and/or sealing compounds, brush plating material, nuts, bolts, washers, screws, fluids, compounds, and standard aircraft hardware that is readily available to aircraft operators from sources other than Seller.*

*This warranty shall not apply to any helicopter part which has been repaired or altered outside Seller's factory in any way so as, in Seller's sole judgment, to affect its stability, safety or reliability. This warranty shall not apply to any helicopter part which has been subject to misuse, negligence or accident, or which has been installed in any aircraft which has been destroyed. Repairs and alterations which use or incorporate parts and components other than genuine Bell parts or parts approved by Bell for direct acquisition from sources other than Bell itself are not warranted by Bell, and this warranty shall be void to the extent that such repairs and alterations, in Seller's sole judgment, affect the stability, safety or reliability of the helicopter or any part thereof, or damage genuine Bell or Bell-approved parts. No person, corporation or organization, including Bell Authorized Customer Service Facilities, is authorized by Seller to assume for it any other liability in connection with the sale of its helicopters and parts.*

**NO STATEMENT, WHETHER WRITTEN OR ORAL, MADE BY ANY PERSON, CORPORATION OR ORGANIZATION, INCLUDING BELL AUTHORIZED CUSTOMER SERVICE FACILITIES, MAY BE TAKEN AS A WARRANTY NOR WILL IT BIND SELLER.**

**CHOICE OF LAW AND JURISDICTION:** *This warranty shall be interpreted under and governed by the laws of the State of Texas. All legal actions based upon claims or disputes pertaining to or involving this warranty including, but not limited to, Seller's denial of any claim or portion thereof under this warranty, must be filed in the courts of general jurisdiction of Tarrant County, Texas or in the United States District Court for the Northern District of Texas, Ft. Worth Division located in Ft. Worth, Tarrant County, Texas. In the event that Buyer files such an action in either of the court systems identified above, and a final judgment in Seller's favor is rendered by such court, then Buyer shall indemnify Seller for all costs, expenses and attorneys' fees incurred by Seller in defense of such claims. In the event Buyer files such a legal action in a court other than those specified, and Seller successfully obtains dismissal of that action or transfer thereof to the above described court systems, then Buyer shall indemnify Seller for all costs, expenses and attorneys' fees incurred by Seller in obtaining such dismissal or transfer.*

**H** ELP

**E** VALUATE

**L** OGISTICS

**P** UBLICATIONS

Have you found something wrong with this manual — an error, an inconsistency, unclear instructions, etc.? Although we strive for accuracy and clarity, we may make errors on occasion. If we do and you discover it, we would appreciate your telling us about it so that we can change whatever is incorrect or unclear. Please be as specific as possible.

Your complaint or suggestion will be acknowledged and we will tell you what we intend to do.

Please email [publications@bellflight.com](mailto:publications@bellflight.com), to inform us where we have erred.

Your assistance is sincerely appreciated.

ICN-BHT-A-000000-A-97499-00007-F-002-01

*Figure 1. HELP page (Sheet 1 of 1)*

## Use of a S1000D publication - Introduction

### 1. Use of a S1000D publication - General information

#### 1.1. Document structure

The breakdown of the helicopter into systems within the manuals is done under the S1000D specification (S1000D-I9005-01000-00, Issue No. 4.0,4, may 12, 2009).

This publication is written in Simplified English and obeys the instructions given in document (ASD-STE100, Issue 6, January 2013). The European Association of Aerospace Industries (ASD) prepared these documents.

All the data are included in data modules. A code identifies each data module.

#### 1.1.1. Data Module Code (DMC)

The Data Module Code (DMC) structure is shown in [Table 1](#).

**Table 1. DMC structure**

BHT	A	29-10-01	00A	520A	A
<a href="#">Paragraph 1.1.1.1</a>	<a href="#">Paragraph 1.1.1.2</a>	<a href="#">Paragraph 1.1.1.3</a>	<a href="#">Paragraph 1.1.1.4</a>	<a href="#">Paragraph 1.1.1.5</a>	<a href="#">Paragraph 1.1.1.6</a>

#### 1.1.1.1. Model identification code

The model identification code is BHT.

#### 1.1.1.2. System difference code

The system difference code is a letter (letters I and O are not used).

This letter identifies two or more sub-systems that can be installed as alternative items because they do the same function.

#### 1.1.1.3. Standard Numbering System (SNS) code

The Standard Numbering System (SNS) code includes three pairs of digits that show:

- The system (e.g., 29, hydraulic power)
- The subsystem and the sub-subsystem (e.g., 10, main hydraulic)

#### NOTE

When the sub-subsystem code is zero, the two digits show all of the subsystem.

- The component (e.g., 01, hydraulic reservoir filter module)

#### 1.1.1.4. Disassembly code and disassembly code variant

##### 1.1.1.4.1. Disassembly code

The disassembly code is a two-digit code.

The disassembly code shows the breakdown of a component, as follows:

- 00 - Data module for all of the helicopter, system, subsystem, or component.
- 01 - Data module for the first assembly that you remove from the component.
- 02 - Data module for the second assembly that you remove from the component.

Code 03 and the subsequent codes refer to the third, fourth, etc assembly that you remove from the component.

The disassembly code also identifies the data modules in sequence.

##### 1.1.1.4.2. Disassembly code variant

The disassembly code variant is a letter (letters I and O are not used) that identifies alternative items.

These items are different, but the difference is too small to cause a change in the system difference code.



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### 1.1.1.5. Information code and information code variant

#### 1.1.1.5.1. Information code

The information code is a three-digit code.

The information code identifies the types of information you can find in the data module.

#### 1.1.1.5.2. Information code variant

The information code variant is a letter (letters I and O are not used).

The information code variant is used for different data modules that are applicable to the same component and type of operation.

#### 1.1.1.6. Item location code

You can find these item location codes:

- A on the helicopter.
- B on the removed assembly/component.
- D applicable to all the locations.
- Z is used as a generic item location code.

### 1.1.2. List of Effective Data Modules (LOEDM)

Each chapter includes a List of Effective Data Modules (LOEDM) . The list shows the data module codes of all the data modules in the chapter.

The LOEDM gives the information that follows for each data module:

- Technical name and information name columns. These two columns together give the title of the data module.
- Document identifier column. This column gives the data module code.
- The status of the data module. This column gives the information about the status of the data module (N for new and C for changed).
- Issue date. This column gives the date of the data module changes.
- Applicability column. This column gives information about the applicability of the data module to different versions, configurations, and modifications of the helicopter.

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# CHAPTER 01 INTRODUCTION

EPX SUPPLEMENT

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## List of Effective Data Modules

The listed documents are included in issue 008, dated 2025-02-07, of this publication.

C = Changed data module, N = New data module

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Document title	Data module code / Seq number	Issue date	Applicable to
<a href="#">Scope of this Manual - Description</a>	DMC-412-A-00-00-00-05A-028A-A / 00007	2023-05-25	SN: 38001-38999 or 39101-39999
<a href="#">Description of the Helicopter - Description</a>	DMC-412-A-00-00-00-05A-042A-A / 00008	2023-05-25	SN: 38001-38999 or 39101-39999
<a href="#">Maintenance Computer Software - General Information</a>	DMC-412-A-00-00-00-01A-090A-A / 00009	2023-05-25	SN: 38001-38999 or 39101-39999

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## Scope of this Manual - Description

This Maintenance Manual Supplement contains the necessary data to do maintenance on the systems, subsystems, or units that are applicable only to the 412EPX.

For all systems, subsystems, or units not covered in this manual, maintenance must be done in accordance with the instructions in the applicable data module of the [412-MM](#).

The following technical manuals contain the Instructions for Continued Airworthiness (ICA) for the 412EPX and are necessary to maintain the continued airworthiness of the helicopter.

- Maintenance Manual ([412-MM](#))
- Maintenance Manual Supplement (BHT-412-MMS-EPX)
- Illustrated Parts Breakdown (BHT-412-IPB)
- Illustrated Parts Breakdown Supplement (BHT-412-IPBS-EPX)
- Component Repair and Overhaul ([412-CRO - Component Repair and Overhaul Manual](#))
- Component Repair and Overhaul - Vendor (BHT-412-CR&O-V)
- Standard Practices Manual (BHT-ALL-SPM, Standard Practices Manual)
- Electrical Standard Practices Manual (BHT-ELEC-SPM, Electrical Standard Practices Manual)
- Structural Repair Manual (BHT-ALL-SRM, Structural Repair Manual and BHT-MED-SRM)
- Corrosion Control Guide (CSSD-PSE-87-001, Corrosion Control Guide)
- Special Tools Illustrated Parts Breakdown manual (BHT-SPECTOOL-IPB)
- PT6T-9 Engine Maintenance Manual, 3053182 (supplied by Pratt & Whitney Canada)

With the exception of the Pratt & Whitney Canada manuals, links to all of these publications are available through the Electronic Commercial Technical Publications Web site at [www.bellhelicopter.net](http://www.bellhelicopter.net).

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## Description of the Helicopter - Description

### 1. Description of the Helicopter

The 412EPX (Figure 1) is a twin engine, 15-place medium helicopter with a glass cockpit.

The fuselage consists of two major assemblies, the forward fuselage and the tailboom. The forward fuselage is of semimonocoque and reinforced shell construction with transverse bulkheads and metal and fiberglass covering. Two longitudinal main beams provide the primary structural support.

A hinged door on either side of the forward area permits direct access to the crew area and a large sliding door permits access to the cargo/passenger area. Additionally, a hinged cargo door is located immediately ahead of the sliding door. This door increases the width of access to the cargo/passenger area. Seating is provided for the pilot and forward passenger/copilot in the crew area (cockpit) and up to 13 passengers in the cargo/passenger (cabin) area.

The engine deck, located above and aft of the passenger/cargo area, is designed to accommodate the engines, reduction (combining) gearbox, firewalls, and air management system.

The tailboom is of semimonocoque construction which provides support for a vertical fin, aerodynamically actuated elevator, tail rotor and tail rotor drive system, tail skid, and baggage compartment.

#### NOTE

For additional information on the Integrated Avionics System (IAS), refer to the BHT-412-IAM-6.

The Integrated Avionics System (IAS) is highly flexible and configurable to meet various operating and customization needs. The system takes advantage of the latest in display, computer processing, and digital data bus technology to provide a high degree of redundancy, reliability, and flexibility. The primary components of the IAS include the following:

- Four multi-function Display Units (DUs) with 6 x 8 inches high resolution displays
- Dual channel Aircraft Data Interface Unit (ADIU)
- Course/Heading Select Panel (CHSP)
- Radar altimeter
- Dual flight director control panels
- Dual Air Data Computers (ADCs)

The autopilot installation provides single-pilot or dual-pilot IFR capability. The basic installation provides 3-axis autopilot operation with a navigation-coupled flight director. The installation is compatible with existing options for the SPZ-7600 AFCS including 4-axis and Search and Rescue (SAR) options.

The fuel system has 10 impact resistant fuel cells. Six of the cells are located below the cabin floor and four are located aft of the cabin and above the level of the underfloor cells. A system of pumps, interconnects, and standpipes provides a fuel burn sequence that maintains the fuel center of gravity within limits while supplying each engine with fuel. Auxiliary fuel cell kits are also available for extended range capabilities.

The power plant is a Pratt & Whitney Canada PT6T-9 twin turboshaft (Twin-Pac) engine consisting of two identical free turbine power sections and controlled by a pair of Electronic Engine Controls (EEC). A common reduction (combining) gearbox mounted across the aft end of the power sections has an engine-to-transmission output shaft (main driveshaft) extending forward along the centerline of the engine to provide power to the transmission. An accessory gearbox is mounted on the forward end of each power section.

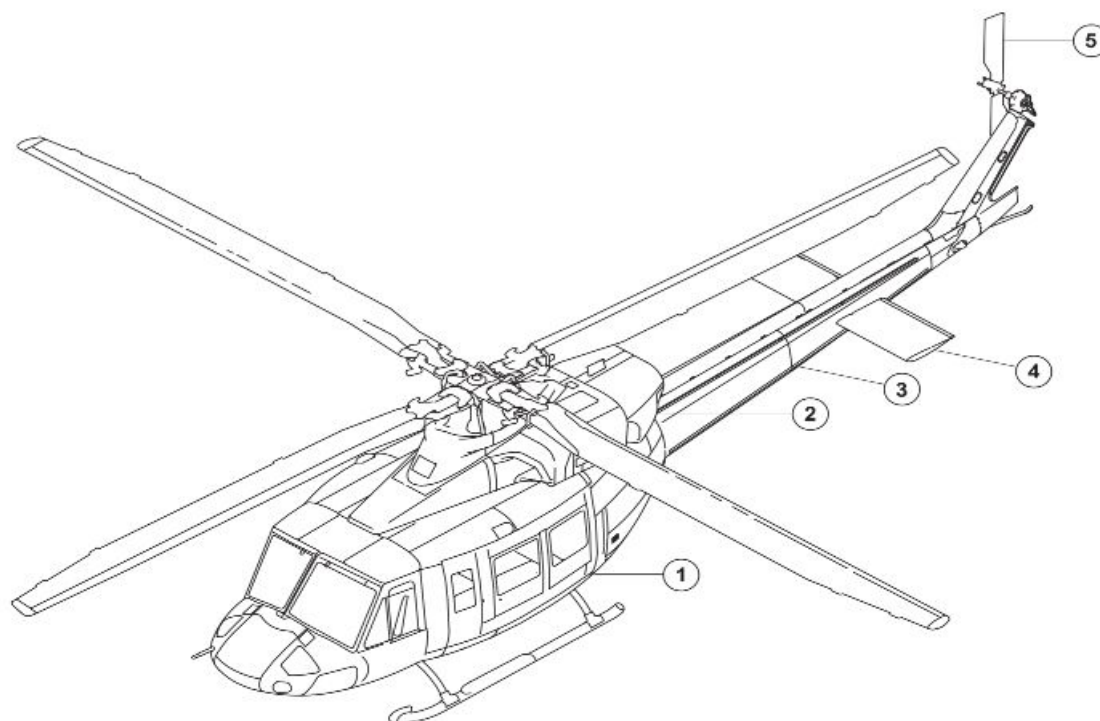
The main rotor consists of four composite blades mounted to flex-beam type yokes to provide a soft-in-plane arrangement. Elastomeric bearings help to dampen vibration and provide lead-lag action for the blades. A blade fold kit is available so that two of the blades can be folded parallel to the other two blades to minimize storage space required.

The tail rotor is a two-bladed, semi-rigid rotor system mounted on the pilot right side of the vertical fin. Rotor flapping is provided by a delta hinge arrangement to provide stability during hovering turns and forward flight.

The flight control system, consisting of cyclic, collective pitch, and anti-torque controls, is used to regulate helicopter attitude, altitude, and direction of flight. The flight controls are hydraulically boosted to reduce pilot effort, to overcome resistance of the elastomeric bearings in the main rotor system, and to counteract control feedback forces.

The helicopter is equipped with a 28 VDC, negative ground electrical system. Power for the system is supplied by a nickel-cadmium 25.2 volt, 40 amp/hour battery and two 30 volt, 200 amps starter-generators, one mounted on each engine. The AC electrical system consists of two 250 volt-amps, 115/26 volt, 400 Hz, single phase, solid state inverters and associated controls.

Basic helicopter landing gear is the low skid type. Optional high skid gear or emergency flotation gear is also available. For additional information, refer to the [412-MM](#) and to specific data modules within this supplement.



1. Forward fuselage
2. Engine and transmission cowling
3. Tailboom
4. Elevators
5. Tail rotor

ICN-412-A-000000-B-97499-00031-A-001-01

*Figure 1. 412EPX Helicopter (Typical) (Sheet 1 of 1)*

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## Maintenance Computer Software - General Information

### NOTE

DMITS S/W 1.0 (412-770-022-109) is applicable to ADIU 412-074-022-103.

DMITS S/W 2.0 (412-770-022-119) is applicable to ADIU 412-074-022-105.

This section contains instructions to access the maintenance menu page on the Display Unit (DU) s and to install and utilize the Diagnostic and Maintenance Information Transfer System (DMITS) software of the 412EPX. The software is part of the loose equipment package along with the following:

- Ground Support Equipment (GSE) switch box
- GSE harnesses
- USB A/A extension
- DMITS CD-ROM

The DMITS CD-ROM contains the following programs:

DMITS412 Maintenance application installer

EDGEPORT/1 converter, software drivers, installation and user's manual

### 1.1. Maintenance Menu Page

#### NOTE

For additional information on the Integrated Display System, refer to [412-A-95-00-00-00A-009A-A / 00718](#).

As part of the Integrated Display System of the 412EPX, the MAINTENANCE MENU page provides selections on the Display Unit (DU) s for maintenance data to be accessed through the Primary Flight Display (PFD) or the Multi-Function Flight Display (MFD) , as required.

#### NOTE

For the procedures to access maintenance data such as chip history, exceedances, calibration, engine/ECU, etc. from the MAINTENANCE MENU page, refer to the applicable data module(s).

Access to the MAINTENANCE MENU page is only possible when the Aircraft-On-Ground (AOG) status is enabled (weight on gear is reported by Aircraft Data Interface Unit (ADIU) ). As required, the page may be displayed on any DU as follows:

Connect the battery or external DC power to the helicopter.

From the flight (FLT) format page on the PFD or the EICAS format page on the MFD, as applicable, press on the COMP softkey to display the composite format page, as shown in [Figure 1](#).

From the composite format page, press on the MAINT softkey to display the MAINTENANCE MENU page, as shown in [Figure 1](#).

### 1.2. GSE Switch Box

#### NOTE

For procedures to upload, download, clear, or edit maintenance data for each Line Replaceable Unit (LRU) , refer to the [412-A-95-00-00-00A-009A-A / 00718](#) and [412-A-96-00-00-00A-009A-A / 00997](#) shown in [Table 1](#).

The 412EPX uses a portable Ground Support Equipment (GSE) switch box (10, [Figure 2](#)) to interface the LRUs for which maintenance functions can be performed, as required. The GSE switch box is a Printed Circuit Board (PCB) -type of unit that supports the RS-232 and RS-422 communication protocols and has the following external layout:

- DB9 connector (J4) (15)
- USB connector (J5) (11)
- Electrical connector (J1) (5)
- Electrical connector (J2) (6)
- Electrical connector (J3) (7)
- Rotary switches (9)
- RS-232/RS-422 toggle switch (14)

- PWC ECU MODE toggle switch (8)

The USB connector (11) allows you to connect a USB port of the laptop computer (1) to the GSE switch box (10) using a USB A/A extension (12).

The DB9 connector (15) allows you to connect a serial port of the laptop computer (1), if any, to the GSE switch box (10) using a serial cable (13).

The GSE harness (4), as part of the maintenance package, connects the electrical connector (J1) (5) of the GSE switch box to the GSE MAINT PORT NO. 1 electrical connector (2) of the GSE MAINT PORT NO. 1, on the right side of the pedestal. It also connects the electrical connector (J2) (6) of the GSE switch box (10) to the electrical connector (3) GSE MAINT PORT NO. 2.

When used in conjunction with the (RS-232/RS-422) toggle switch (14), the rotary switches (9) allow you to select individual LRUs. The toggle switch routes the signal to the destination LRU whether it uses the RS-232 or the RS-422 communication protocol.

### 1.3. DMITS

#### NOTE

DMITS S/W 1.0 (412-770-022-109) is applicable to ADIU 412-074-022-103.

DMITS S/W 2.0 (412-770-022-119) is applicable to ADIU 412-074-022-105.

The Diagnostic and Maintenance Information Transfer System (DMITS) software provides a graphic user interface for uploading, downloading, editing, and clearing maintenance data for the following systems, as applicable:

- Display Unit (DU)
- Aircraft Data Interface Unit (ADIU)
- Lighting Power Supply (LPS)

The DMITS software runs on laptop computers that use the Microsoft® Windows 10, 7, XP, or Vista operating system. The laptop computer must be connected to the Ground Service Equipment (GSE) ports of the helicopter through the GSE switch box, using either the RS-232 ports or the USB ports.

#### 1.3.1. DMITS - Installation

#### NOTE

As applicable to the 412EPX, the following information reflects the installation of the setup file and DMITS software.

To install the Diagnostic and Maintenance Information Transfer System (DMITS) program on the laptop computer, do the following:

Insert the DMITS CD-ROM.

On the installation CD, double click on the DMITS412 setup file.

Follow the steps on the DMITS setup wizard as follows:

From the Setup Wizard window, click the Next > button (Figure 3):

Review the licensing agreement and select "I accept the agreement". Click the Next > button (Figure 4).

From the Select Destination Location window, accept the default path, type the desired path, or click the Browse button to select another location. Click the Next > button (Figure 5).

From the Select Start Menu Folder window, accept the default program group folder, type the desired folder name, or click the Browse button to select another folder. Click the Next > button (Figure 6).

#### NOTE

If you do not check the Create a Desktop Shortcut box, the DMITS program may be launched from the Start menu > Programs > DMITS412\_022 (default program group folder) > DMITS412 (412-770-022-109, 1.0).exe.

From the Select Additional Tasks window, check the Create a Desktop Shortcut checkbox and select one of the shortcut creation options. Once the desired shortcut options are set, click the Next > button (Figure 7).

From the Ready to Install window, click the Install button (Figure 8) to install the DMITS program.

From the Completing the Setup Wizard window, check the desired option(s) and click the Finish button to exit the setup and install the DMITS program (Figure 9).



**DO NOT MANUALLY MODIFY THE PATH TO THE INSTALLATION DIRECTORY OR MODIFY THE SOFTWARE PACKAGE FILE NAMES ONCE THE APPLICATION IS INSTALLED. IF NECESSARY, RUN THE INSTALLER AGAIN AND SELECT/ENTER THE NEW PATH. OTHERWISE, THE PROGRAM WILL NOT OPERATE CORRECTLY.**

When the installation is completed, the DMITS program may be launched from the Desktop shortcut, if any, or from the Start menu > Programs > DMITS412\_022 (default program group folder) > DMITS412 (412-770-022-109, 1.0).exe.

### 1.3.2. DMITS - USB/RS-232 Converter Installation

The USB/RS-232 converter allows the user to use the laptop computer USB ports for connecting to the Ground Support Equipment (GSE) switch box rather than using the serial ports. To install the USB/RS-232 converter, do the following:

Connect the USB extension cable to a USB port on the laptop computer.

#### NOTE

Upon connection, a Found New Hardware - Edgeport/1 message is displayed in the notification area of the taskbar.

Connect the other end of the USB extension cable to the USB port on the GSE switch box.

Follow the steps of the Found New Hardware Wizard as follows:

From the Found New Hardware Wizard window, select No, not this time and click the Next > button (Figure 10).

From the installation mode window, select Install from a list or specific location (Advanced) and click the Next > button (Figure 11).

#### NOTE

\* = the directory where the DMITS was installed on the computer.

From the search and installation options window, select Search for the best driver in these locations, uncheck the Search removable media (floppy, CD-ROM...) box, and check the Include this location in the search: box. Click the Browse button to locate and select the \*EDGEPORT Drivers\Win2k folder. Click the Next > button (Figure 12).

When the installation is completed, click the Finish button.

A Found New Hardware - Edgeport Serial Port\_1 [ ] message is displayed in the notification area of the taskbar.

Repeat Paragraph 1.3.2.3.1 through Paragraph 1.3.2.3.3.

When the installation is completed, click the Finish button.

### 1.3.3. DMITS - Maintenance Functions

#### NOTE

Instructions to perform each maintenance function, including Non-Volatile Memory (NVM) clear functions, are provided in the applicable 412-A-95-00-00-00A-009A-A / 00718 and 412-A-96-00-00-00A-009A-A / 00997, as shown in Table 1 and Table 2.

The maintenance functions allow the user to view, upload, download, and/or edit maintenance data contained in the maintenance files. These files are stored in the DMITS application directory in a predefined folder structure (Table 1). The NVM clear functions are maintenance functions that allow the user to erase records from the memory of each applicable system (Table 2).

### 1.3.4. DMITS - Menu Bar

The Diagnostic and Maintenance Information Transfer System (DMITS) software relies on the menu bar of the main window to allow the user to navigate the different available options. The menu bar includes the following selections (Figure 13):

- File (Paragraph 1.3.4.1)

- Select System ([Paragraph 1.3.4.2](#))
- Select Port ([Paragraph 1.3.4.3](#))
- Communication ([Paragraph 1.3.4.4](#))
- Tools ([Paragraph 1.3.4.5](#))
- Help ([Paragraph 1.3.4.6](#))

#### 1.3.4.1. Menu Bar - File Menu

##### NOTE

The File drop-down menu is disabled when a communication task is in progress.

The File drop-down menu regroups items related to file operations and contains the following menu items ([Figure 14](#)):

The View menu allows for the opening and viewing of maintenance files. Depending on the selected system, the View menu may contain the following two menu items ([Figure 14](#)):

- Downloaded Files
- Uploaded Files

The Save menu item opens the Save dialog box and allows the user to specify the drive, directory, and name of the file to save. This menu item is enabled if data was downloaded from a system download function and is presented in the viewing window.

The Close menu item closes the viewing window. This menu item is enabled if a maintenance file was opened using the View menu and is presented in the viewing window.

The Print menu item prints the data contained in the viewing window. This menu item is enabled if a data file was opened using the View menu and is presented in the viewing window.

The Exit menu item closes the DMITS application and is always enabled.

#### 1.3.4.2. Menu Bar - Select System Menu

##### NOTE

The checkmark on the drop-down menu indicates the selected system ([Figure 15](#)).

The Select System drop-down menu regroups items related to system selection and contains the following menu items ([Figure 15](#)):

The ADIU menu item sets the ADIU as the selected system.

The DU menu item sets the DU as the selected system.

The LPS menu item sets the LPS as the selected system.

#### 1.3.4.3. Menu Bar - Select Port Menu

The Select Port drop-down menu regroups items related to communication setup and contains the following menu items ([Figure 16](#)):

##### NOTE

A COMX menu item is disabled when the corresponding communication port on the laptop computer was already in use when the port scan occurred.

The COMX-USB notation is used when the laptop computer is connected to the Ground Support Equipment (GSE) switch box through a USB cable.

The COMX menu item opens and configures the communication port on the laptop computer for data transmission.

The CLOSE PORT menu item closes the selected communication port.

The UPDATE PORTS menu item does a port scan and refreshes the list of communication ports in the Select Port drop-down menu.

#### 1.3.4.4. Menu Bar - Communication Menu

The Communication drop-down menu regroups items related to communication functions and contains the following menu items, depending on the maintenance functions of the selected system ([Figure 17](#)):



The Download Data menu item enables the communication download interface.

The Upload Data menu item enables the communication upload interface.

The Clear NVM menu item allows the user to clear selected Non-Volatile Memory (NVM) records stored in the LRU.

The Discrete Override (ADIU only) allows the user to remotely control the programmable CAS TEST, Auto Stop Stow, and Auto Float Disarm discrete outputs and from ADIU.

#### 1.3.4.5. Menu Bar - Tools Menu

The Tools drop-down menu regroups items related to support tools and contains the following menu items, depending on the maintenance functions of the selected system (Figure 18):

The Upload File Editor menu item opens an editor dialog box that allows the user to create files that can be uploaded in the correct format.

#### NOTE

Refer to Table 1 for the list of password protected functions.

The Change Password menu item opens the change password dialog box and is always enabled. Default password after installation is "admin" (without the quotation marks). The password must contain between 4 and 15 characters.

#### 1.3.4.6. Menu Bar - Help Menu

The Help drop-down menu regroups items related to user support and contains the following menu items (Figure 19):

The DMITs User Manual menu item opens the user manual of the DMITS program.

The Contact Info menu item opens the Contact Information dialog box containing support point of contact.

The About menu item opens the About dialog box containing information on the software version and part number.

#### 1.3.5. DMITS - Status Bar

The status bar is on the bottom portion of the main window and contains status information relevant to the application. The status bar is separated into five panes as follows (Figure 20):

Starting from the left-hand side of the status bar, Pane 1 displays the selected system (e.g., DU). Right clicking on this pane brings up a track menu that allows the user to change the selected system.

Pane 2 displays the configured communication port (e.g., COM1).

Pane 3 displays the configured communication port state (e.g. Idle). This pane is also used following a communication function to display the status messages received from the system being maintained.

Pane 4 displays header information for the fifth pane (e.g., File - >).

Pane 5 displays the file name, if any, of the file displayed in the window (e.g., 06-07-2012.ddf). This pane is also used to show a progress bar for lengthy maintenance communication functions.

#### 1.3.6. DMITS - Main Window Caption

The main window caption area displays the maintenance function for the selected system and displays the default caption, as shown in Figure 13, when no maintenance function is selected.

#### 1.3.7. DMITS - Viewing Window

#### NOTE

Text displayed in the viewing window is not editable but may be selected and copied, as required.

The viewing window (Figure 21) is a multipurpose display window which opens in the center of the application window when:

- A data file opened from one of the View menu items (except for .csv files) is displayed
- A data file is displayed before using a system upload function
- Data downloaded from a system download function is displayed

### 1.3.8. DMITS - Download Maintenance Function Window

The download toolbar is shown above the viewing window caption when a download maintenance function is selected. The toolbar contains the following buttons, depending on the state of the download process (Figure 22):

The Download button is displayed when communication is in the idle or ready state. Click this button to launch the download process.

The Exit button is displayed when communication is in the idle or ready state. Click this button to exit the download maintenance function.

The Abort button is displayed when a download process is underway. Click this button to cancel the download process.

The Save button is displayed after a successful download operation. Click this button to specify the drive, directory, and name of the file to save.

### 1.3.9. DMITS - Upload Maintenance Function Window

The upload toolbar is shown above the main window caption when an upload maintenance function is selected. The toolbar contains the following buttons, depending on the state of the upload process (Figure 23):

The Upload button is displayed when communication is in the idle or ready state. Click this button to launch the appropriate upload process.

The Open button is displayed when an upload maintenance function is selected. Click this button to display the Open dialog box, which lets you specify the drive, directory, and name of the file to upload.

The Exit button is displayed when communication is in the idle or ready state. Click this button to exit the upload maintenance function.

The Abort button is displayed when an upload process is underway. Click this button to cancel the upload process.

### 1.3.10. DMITS - File Editors



**ALWAYS USE THE FILE EDITORS TO CREATE UPLOADABLE FILES. FILES CREATED OUTSIDE THE EDITORS ARE NOT RECOGNIZED AS VALID BY THE UPLOAD FUNCTIONS AND WILL PREVENT THE CORRECT OPERATION OF THE PROGRAM.**

The DMITS file editors are dialog boxes used to create valid and formatted data files that can be uploaded to the LRUs. File editors are available for the following maintenance functions: DU EDR Data Mask, DU Normal and Emergency Checklists, DU Programmable CAS, ADIU Aircraft Data, and LPS Dimming tables. The file editors share a common toolbar that includes the following buttons (Figure 24):

The New button is used to reset the editable fields to a blank state.

The Open button is used to open a file and fill the editable fields.

#### NOTE

File editors check characters and fields for integrity to make sure the files are properly formatted to upload.

The Save button is used to save an already existing file.

The Save As button is used to save under a new file name.

The Exit button is used to close the file editor dialog box.

The Tooltips button is used to toggle ON or OFF the display of useful information related to each control (buttons, editable fields, etc.) when the mouse is over the control.

Table 1. DMITS - Other Maintenance Functions

MAINTENANCE FUNCTIONS				MAINTENANCE FILES		REFERENCE
VIEW	UPLD	DO-W-NLD	EDIT	STORAGE FOLDER (1)	FILE EXTENSION	
X	X		X	\DU\EDR Data Mask	.udm	
X	X		X (2)	\DU\Normal Checklist	.unc	
X	X		X (2)	\DU\Emergency Checklist	.uec	
X	X (2)		X (2)	\DU\Programmable CAS	.upc	412-A-95-00-00-00A-009A-A / 00718
X		X		\DU\DU Faults	.ddf	412-A-95-00-00-00A-009A-A / 00718
X		X		\DU\EDR Data	.csv	412-A-95-00-00-00A-009A-A / 00718
X	X	X	X	\ADIU\Aircraft Data	.uad	412-A-95-00-00-00A-009A-A / 00718
X		X		\ADIU\ADIU Faults	.daf	412-A-95-00-00-00A-009A-A / 00718
X		X		\ADIU\Exceedances	.dex	412-A-95-00-00-00A-009A-A / 00718
X		X		\ADIU\Chip History	.dch	412-A-95-00-00-00A-009A-A / 00718
X		X		\ADIU\Aircraft Flight Log	.dal	412-A-95-00-00-00A-009A-A / 00718
X		X		\ADIU\Timers Counters	.dtc	412-A-95-00-00-00A-009A-A / 00718
X		X		\ADIU\Power Assurance	.dpa	412-A-95-00-00-00A-009A-A / 00718
X	X	X	X	\LPS\Dimming Table	.csv	412-A-96-00-00-00A-009A-A / 00997
X		X		\LPS\Fault Log	.dfl	412-A-96-00-00-00A-009A-A / 00997

Table 1. DMITS - Other Maintenance Functions (continued)

MAINTENANCE FUNCTIONS				MAINTENANCE FILES		REFERENCE
VIEW	UPLD	DO-W-NLD	EDIT	STORAGE FOLDER <sup>(1)</sup>	FILE EXTENSION	
X		X		\\LPS>Status Data	.dsd	<a href="#">412-A-96-00-00-00A-009A-A / 00997</a>
X		X		\\LPS\Version Data	.dvd	<a href="#">412-A-96-00-00-00A-009A-A / 00997</a>

**NOTES:**

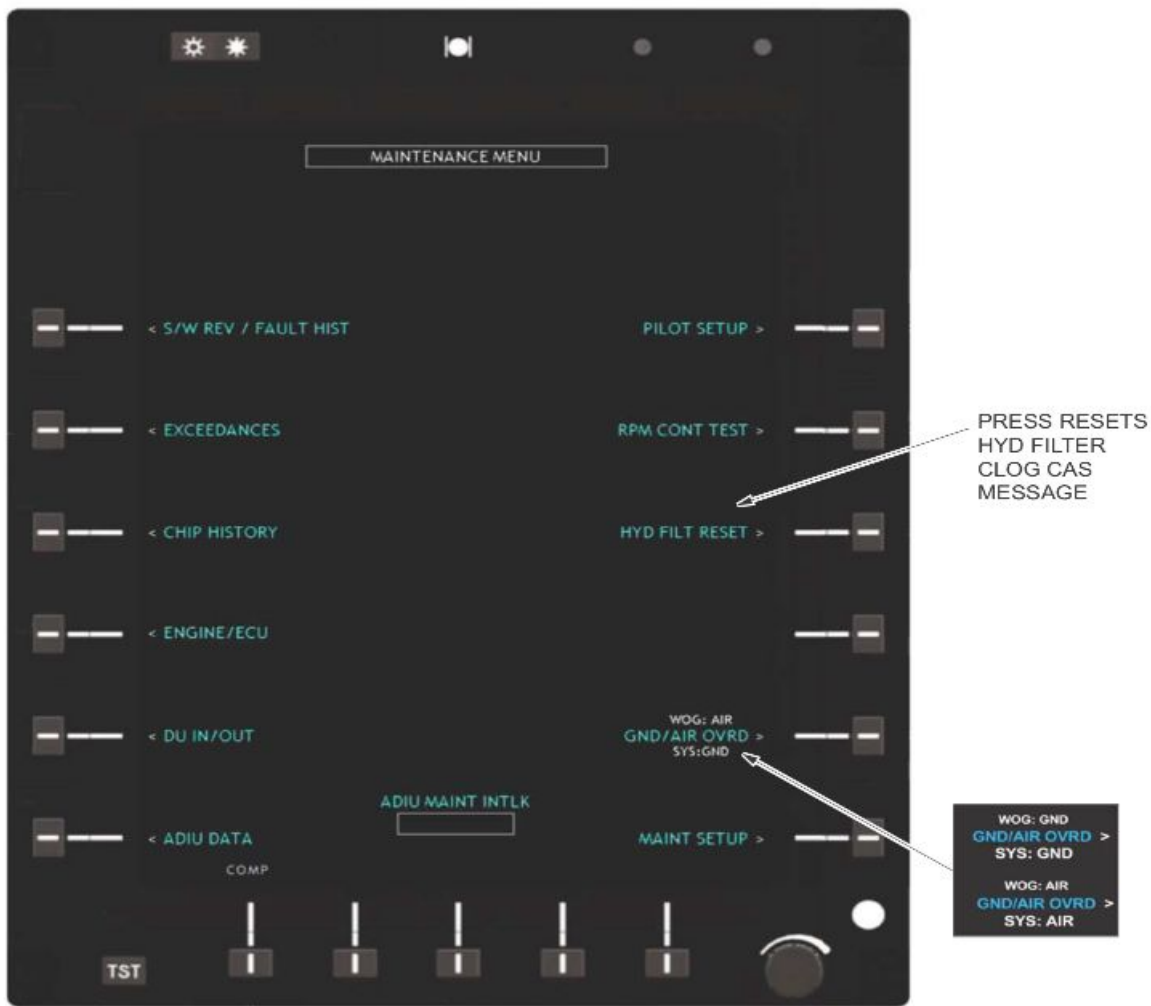
- <sup>1</sup> The root directory is the installation directory selected in [Paragraph 1.3.1.3.3](#). The default root directory is C:\Program Files\DMITS412.
- <sup>2</sup> The function is password protected. When selected, the password caption dialog box opens. Refer to [Paragraph 1.3.4.5.2](#) to change the password if necessary.

Table 2. DMITS - Non-Volatile Memory (NVM) Clear Functions

SYSTEM	NVM RECORDS	REFERENCE
ADIU	ADIU Faults <sup>(1)</sup>	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
ADIU	Exceedance Flags	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
ADIU	Exceedance History <sup>(1)</sup>	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
ADIU	Chip History <sup>(1)</sup>	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
ADIU	Flight Log History <sup>(1)</sup>	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
ADIU	Timers/Counters	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
ADIU	Initialize ADMM	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
DU	DU Faults <sup>(1)</sup>	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
DU	Normal Checklist	
DU	Emergency Checklist	
DU	Programmable CAS <sup>(2)</sup>	<a href="#">412-A-95-00-00-00A-009A-A / 00718</a>
LPS	Fault Log	<a href="#">412-A-96-00-00-00A-009A-A / 00997</a>

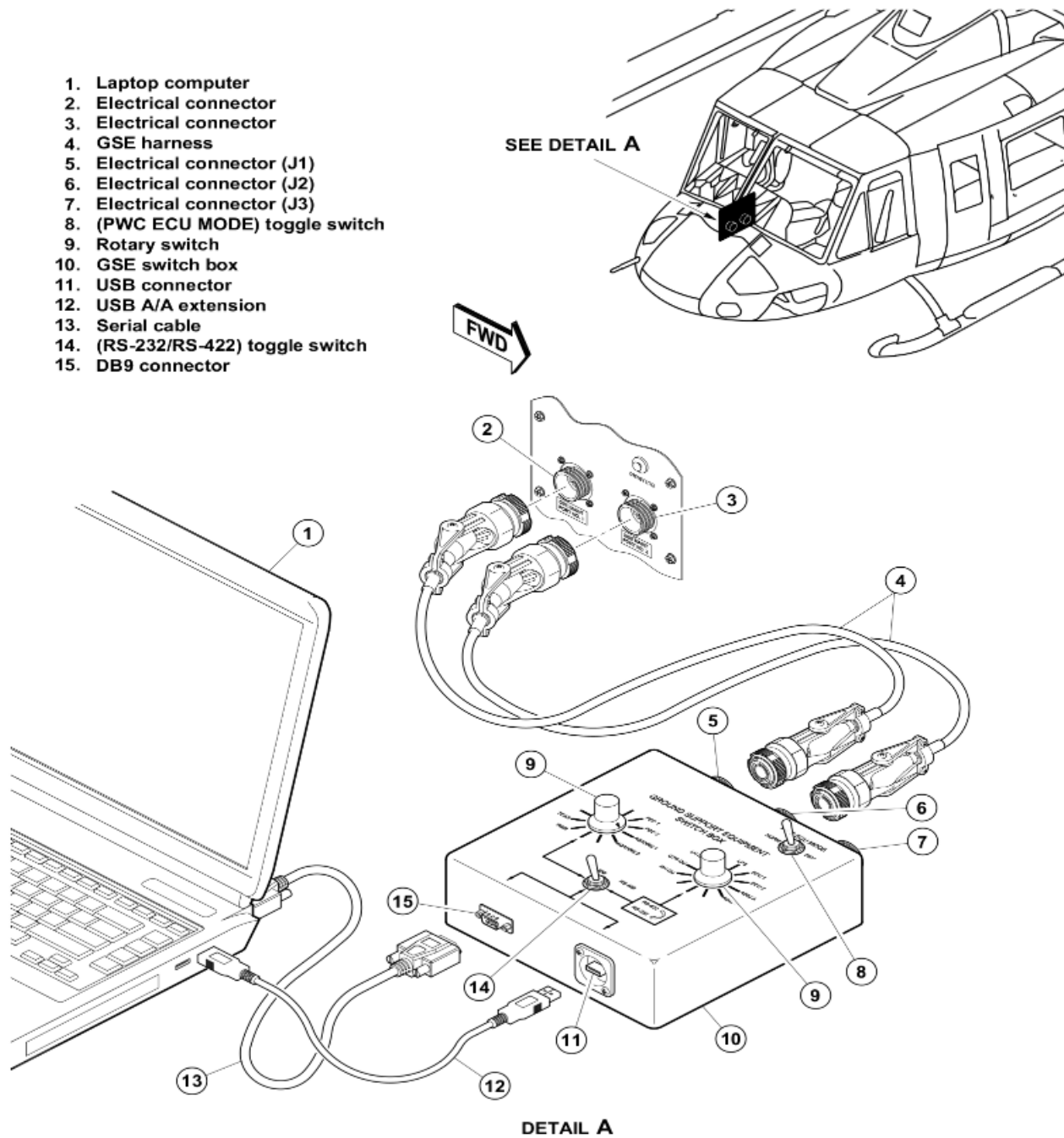
**NOTES:**

- <sup>1</sup> The function is inhibited unless the records in the NVM were previously downloaded. Refer to the applicable data module for the downloading procedure, if necessary.
- <sup>2</sup> The function is password protected. When selected, the password caption dialog box opens. Refer to [Paragraph 1.3.4.5.2](#) to change the password if necessary.



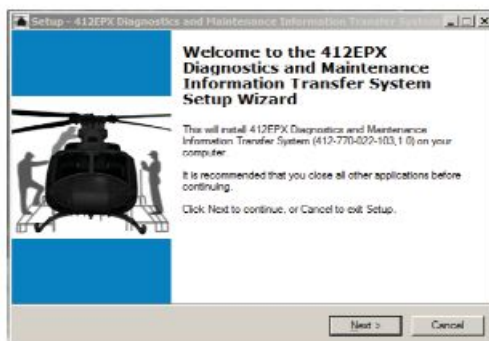
ICN-412-A-000000-B-97499-00032-A-001-01

Figure 1. Maintenance Menu (Sheet 1 of 1)



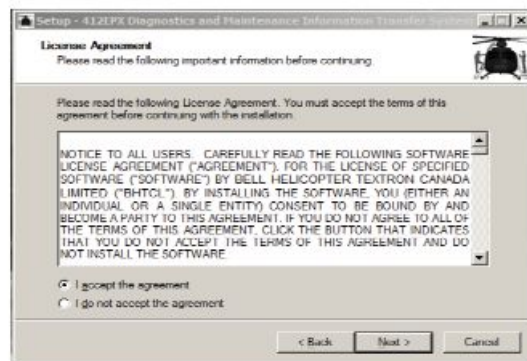
ICN-412-A-000000-B-97499-00033-A-001-01

Figure 2. GSE Switch Box (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00034-A-001-01

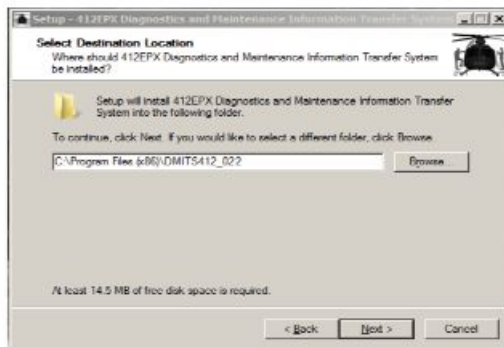
Figure 3. DMITS Installation - Setup Wizard Window (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00035-A-001-01

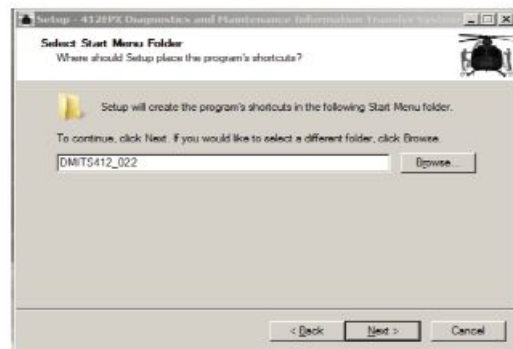
Figure 4. DMITS Installation - License Agreement Window (Sheet 1 of 1)





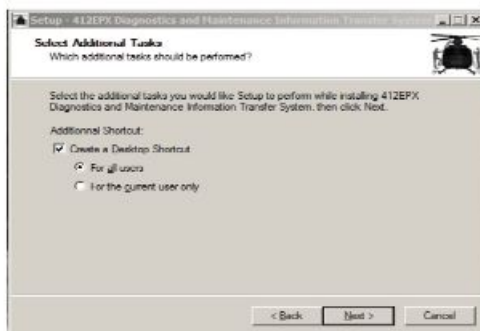
ICN-412-A-000000-B-97499-00036-A-001-01

Figure 5. DMITS Installation - Select Destination Location Window (Sheet 1 of 1)



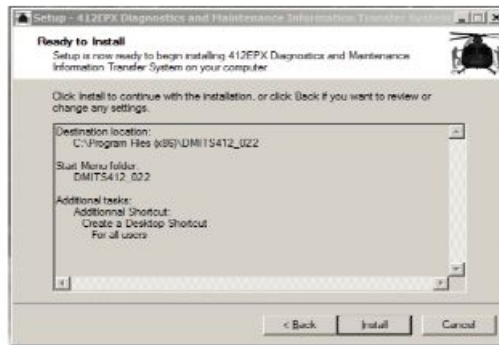
ICN-412-A-000000-B-97499-00037-A-001-01

Figure 6. DMITS Installation - Select Start Menu Folder Window (Sheet 1 of 1)



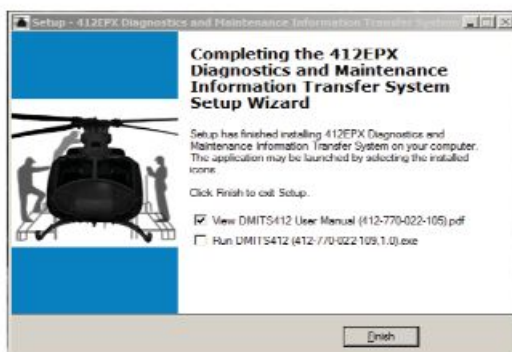
ICN-412-A-000000-B-97499-00038-A-001-01

Figure 7. DMITS Installation - Select Additional Tasks Window (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00039-A-001-01

Figure 8. DMITS Installation - Ready to Install Window (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00040-A-001-01

Figure 9. DMITS Installation - Completing the Setup Wizard Window (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00041-A-001-01

Figure 10. USB/RS-232 Converter Installation - Found New Hardware Wizard (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00042-A-001-01

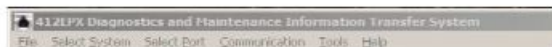
Figure 11. USB/RS-232 Converter Installation - Installation Mode Window (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00043-A-001-01

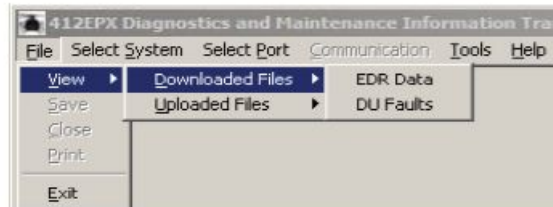
Figure 12. USB/RS-232 Converter Installation - Search and Installation Options Window (Sheet 1 of 1)





ICN-412-A-000000-B-97499-00044-A-001-01

Figure 13. DMITS - Main Window (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00045-A-001-01

Figure 14. DMITS - File Menu (Sheet 1 of 1)



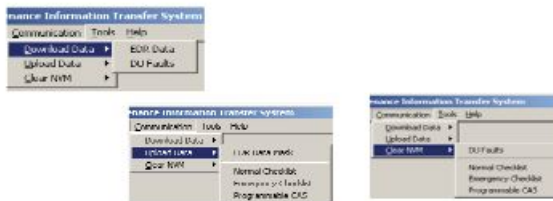
ICN-412-A-000000-B-97499-00046-A-001-01

Figure 15. DMITS - Select System Menu (Sheet 1 of 1)



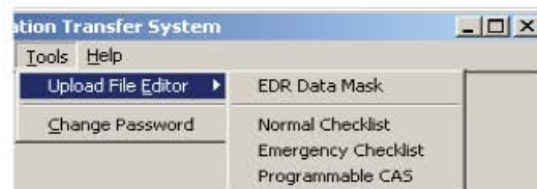
ICN-412-A-000000-B-97499-00047-A-001-01

Figure 16. DMITS - Select Port Menu (Sheet 1 of 1)



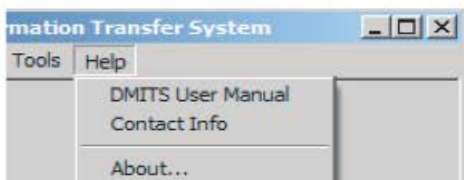
ICN-412-A-000000-B-97499-00048-A-001-01

Figure 17. DMITS - Communication Menu (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00049-A-001-01

Figure 18. DMITS - Tools Menu (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00050-A-001-01

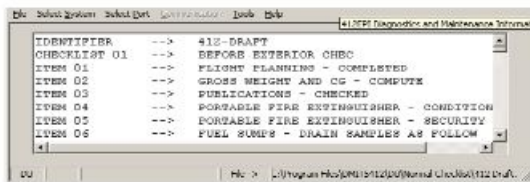
Figure 19. DMITS - Help Menu (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00051-A-001-01

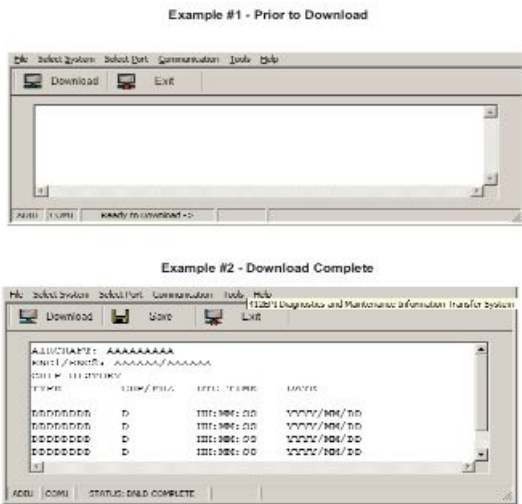
Figure 20. DMITS - Status Bar (Sheet 1 of 1)





ICN-412-A-000000-B-97499-00052-A-001-01

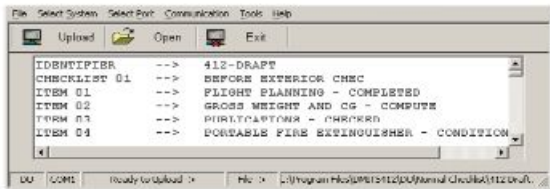
Figure 21. DMITS - Viewing Window (Sheet 1 of 1)



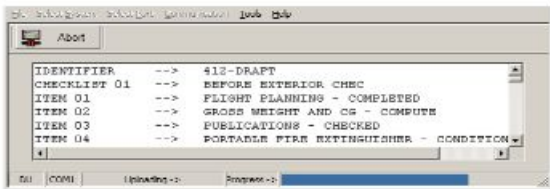
ICN-412-A-000000-B-97499-00053-A-001-01

Figure 22. DMITS - Download Maintenance Function Window (Sheet 1 of 1)

Example #1 - Prior to Upload

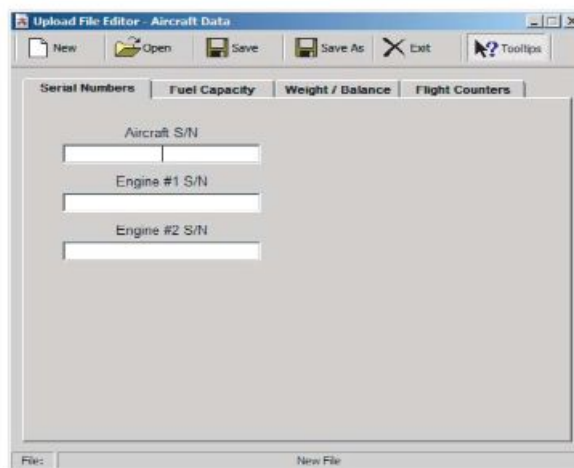


Example #2 - Uploading



ICN-412-A-000000-B-97499-00054-A-001-01

Figure 23. DMITS - Upload Maintenance Function Window (Sheet 1 of 1)



ICN-412-A-000000-B-97499-00055-A-001-01

Figure 24. DMITS - File Editors (Example) (Sheet 1 of 1)

# CHAPTER 04 AIRWORTHINESS LIMITATIONS SCHEDULE

EPX SUPPLEMENT

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### List of Effective Data Modules

The listed documents are included in issue 008, dated 2025-02-07, of this publication.

C = Changed data module, N = New data module

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Document title	Data module code / Seq number	Issue date	Applicable to
<a href="#">Airworthiness Limitations Schedule - Introduction</a>	DMC-412-A-04-00-00-00A-018A-A / 00011	2023-05-25	SN: 38001-38999 or 39101-39999

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## Airworthiness Limitations Schedule - Introduction

Refer to [BHT-412-MM, Chapter 4](#) for the applicable Airworthiness Limitations Schedule.

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# CHAPTER 05 INSPECTIONS

EPX SUPPLEMENT

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## List of Effective Data Modules

The listed documents are included in issue 008, dated 2025-02-07, of this publication.

C = Changed data module, N = New data module

Document title	Data module code / Seq number	Issue date	Applicable to
Inspections - Applicable Manual	DMC-412-A-05-00-00-00A-028E-A / 00013	2024-08-14	SN: 38001-38999 or 39101-39999
Inspections - General Description	DMC-412-A-05-00-00-04A-028A-A / 00014	2023-05-25	SN: 38001-38999 or 39101-39999
Scheduled Inspections - Daily Inspection - Part A	DMC-412-A-05-40-00-20A-281A-A / 00015	2023-05-25	SN: 38001-38999 or 39101-39999
Scheduled Inspections - 100-Hour/12-Month Inspection - Part A	DMC-412-A-05-40-00-21A-281A-A / 00016	C 2025-02-07	SN: 38001-38999 or 39101-39999
Scheduled Inspections - 1000-Hour Inspection - Part A	DMC-412-A-05-40-00-22A-281A-A / 00017	2023-05-25	SN: 38001-38999 or 39101-39999
Scheduled Inspections - 5000-Hour/5-Year Inspection - Part A	DMC-412-A-05-40-00-23A-281A-A / 00018	2023-05-25	SN: 38001-38999 or 39101-39999
Scheduled Inspections - 25-Hour/30-Day Inspection - Part B	DMC-412-A-05-40-00-24A-281A-A / 00019	2024-11-20	SN: 38001-38999 or 39101-39999
Scheduled Inspections - 300-Hour/12-Month Inspection - Part B	DMC-412-A-05-40-00-25A-281A-A / 00020	C 2025-02-07	SN: 38001-38999 or 39101-39999
Scheduled Inspections - 600-Hour/12-Month Inspection - Part B	DMC-412-A-05-40-00-26A-281A-A / 00021	2023-05-25	SN: 38001-38999 or 39101-39999
Scheduled Inspections - 5000-Hour/5-Year Inspection - Part B	DMC-412-A-05-40-00-27A-281A-A / 00022	2023-05-25	SN: 38001-38999 or 39101-39999
Special Inspections - Description	DMC-412-A-05-47-00-00A-028A-A / 00023	2023-05-25	SN: 38001-38999 or 39101-39999
Special Inspections - Each 50 Hours Tailboom Attachment Inspection	DMC-412-A-05-47-00-27A-283A-A / 00025	2023-05-25	SN: 38001-38999 or 39101-39999
Float Bag Inspections - General	DMC-412-A-05-47-10-01A-028B-A / 00026	2023-05-25	SN: 38001-38999 or 39101-39999

Document title	Data module code / Seq number	Issue date	Applicable to
Float Bag Inspections - Part A: Regular 180-Day Inspection (Low Pressure)	DMC-412-A-05-47-10-02A-283B-A / 00027	2023-05-25	SN: 38001-38999 or 39101-39999
Float Bag Inspections - Part B: 2-Year Inspection (Moderate Pressure)	DMC-412-A-05-47-10-03A-283B-A / 00028	2023-05-25	ALL
Float Bag Inspections - Part C: Annual Inspection (Moderate Pressure), Bags With 10 or More Years Service Completed	DMC-412-A-05-47-10-04A-283B-A / 00029	2023-05-25	SN: 38001-38999 or 39101-39999
Float Bag Inspections - Emergency Flotation System Inflation Test (Every Two Years)	DMC-412-A-05-47-10-01A-340B-A / 00030	2023-05-25	SN: 38001-38999 or 39101-39999
Float Bag Inspections - 180-Day Operational Check of Float Switches and Electrical Circuit	DMC-412-A-05-47-10-01A-320B-A / 00031	2023-05-25	SN: 38001-38999 or 39101-39999
Float Bag Inspections - 2-Year Cylinder Special Inspection	DMC-412-A-05-47-10-05A-283B-A / 00032	2023-05-25	SN: 38001-38999 or 39101-39999
Conditional Inspections - Description	DMC-412-A-05-50-00-00A-028A-A / 00033	2024-08-14	SN: 38001-38999 or 39101-39999
Conditional Inspection - After Overspeed	DMC-412-A-05-50-00-13A-284A-A / 00033.1	2024-08-14	SN: 38001-38999 or 39101-39999
Conditional Inspections - After Overtorque	DMC-412-A-05-50-00-08A-284A-A / 00034	2023-05-25	SN: 38001-38999 or 39101-39999
Conditional Inspections - 5-Minute Takeoff Power Range Time Exceedance	DMC-412-A-05-50-00-11A-284A-A / 00035	2023-05-25	SN: 38001-38999 or 39101-39999
Component Overhaul Schedule - Inspection	DMC-412-A-05-10-00-01A-281A-A / 00036	C 2025-02-07	SN: 38001-38999 or 39101-39999

## Inspections - Applicable Manual

This chapter contains the necessary data to do maintenance on the systems, subsystems, and units that are applicable only to the 412EPX. For all systems, subsystems, and units not covered in this chapter, refer to the [412-MM, Chapter 05](#). Refer to [Table 1](#) for appropriate manual usage.

**Table 1. Applicable Manual**

BHT-412-MM	BHT-412-MMS-EPX
<b>INSPECTIONS</b>	
Inspections — General Description	412-A-05-00-00-04A-028A-A / 00014
Inspection Requirements — Description	<a href="#">BHT-412-MM, Chapter 05</a>
Inspections — Crash Damage	<a href="#">BHT-412-MM, Chapter 05</a>
Inspections — Types of Inspections	<a href="#">BHT-412-MM, Chapter 05</a>
Inspections — Definitions	<a href="#">BHT-412-MM, Chapter 05</a>
Inspections — Inspection and Overhaul Tolerance	<a href="#">BHT-412-MM, Chapter 05</a>
<b>SCHEDULED INSPECTIONS</b>	
Scheduled Inspections — Description	<a href="#">BHT-412-MM, Chapter 05</a>
Scheduled Inspections — Daily Inspection - Part A	412-A-05-40-00-20A-281A-A / 00015
Scheduled Inspections — 100 Hour/12 Month Inspection - Part A	412-A-05-40-00-21A-281A-A / 00016
Scheduled Inspections — 1000 Hour Inspection - Part A	412-A-05-40-00-22A-281A-A / 00017
Scheduled Inspections — 5000 Hour/5 Year Inspection - Part A	412-A-05-40-00-23A-281A-A / 00018
Scheduled Inspections — 25 Hour/30 Day Inspection - Part B	412-A-05-40-00-24A-281A-A / 00019
Scheduled Inspections — 300 Hour/12 Month Inspection - Part B	412-A-05-40-00-25A-281A-A / 00020
Scheduled Inspections — 600 Hour/12 Month Inspection - Part B	412-A-05-40-00-26A-281A-A / 00021
Scheduled Inspections — 5000 Hour/5 Year Inspection - Part B	412-A-05-40-00-27A-281A-A / 00022
<b>SPECIAL INSPECTIONS</b>	
Special Inspection — Description	412-A-05-47-00-00A-028A-A / 00023
Special Inspection — Daily/10 Hour Inspection, Whichever Occurs First Until 250 Hours	<a href="#">BHT-412-MM, Chapter 05</a>
Special Inspection — Between 1 and 5 Flight Hours After Main Rotor Hub Installation	<a href="#">BHT-412-MM, Chapter 05</a>
Special Inspection — Between 1 and 5 Flight Hours After Tailboom Installation or Attachment Bolt Replacement	<a href="#">BHT-412-MM, Chapter 05</a>
Special Inspection — Between 1 and 25 Flight Hours After Expandable Blade Bolt Installation	<a href="#">BHT-412-MM, Chapter 05</a>
Special Inspection — Between 5 and 10 Hours of Flight After Each Installation	<a href="#">BHT-412-MM, Chapter 05</a>
Special Inspection — Each 50 Hours Tailboom Attachment Inspection	412-A-05-47-00-27A-283A-A / 00025

Table 1. Applicable Manual (continued)

	BHT-412-MM	BHT-412-MMS-EPX
Special Inspection — Each 25 Hours for the Next Four Inspections	BHT-412-MM, Chapter 05	
Special Inspection — Each 25 Hours of Tail Rotor Operation	BHT-412-MM, Chapter 05	
Special Inspection — 50 Hours After Installation of Components	BHT-412-MM, Chapter 05	
Special Inspection — Each 100 Hours Tailboom Attachment Inspection	BHT-412-MM, Chapter 05	
Special Inspection — Each 100 Hours of Collective Lever Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 100 Hours Tailboom Vertical Fin Spar Cap Inspection	BHT-412-MM, Chapter 05	
Special Inspection — Each 150 Hours of Starter Generator (200SG119Q) Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 300 Hours or 6 Months of Expandable Blade Bolt Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 600 Hours of Tail Rotor Driveshaft Operation or 12 Months	BHT-412-MM, Chapter 05	
Special Inspection — Each 600 Hours or 12 Months Inspection of Tailboom Attachment Bolts	BHT-412-MM, Chapter 05	
Special Inspection — Each 600 Hours of Main Driveshaft Operation or 12 Months	BHT-412-MM, Chapter 05	
Special Inspection — Each 600 Hours or 12 Months Inspection Of Magnetic Brake Assembly	BHT-412-MM, Chapter 05	
Special Inspection — Each 1000 Hours of Component Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 12 Months or 2500 Landings of Aft High Crosstube Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 24 Months of Control Bolt Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 24 Months of Main Rotor Mast Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 2500 Hours of Main Rotor Hub Assembly Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 2500 Hours of Main Rotor Blade Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 2500 or 3000 Hours or 5 Years of Main Rotor Mast (412-040-366-109 and Subsequent) Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 2500 Hours of Tail Rotor Drive System Operation	BHT-412-MM, Chapter 05	
Special Inspection — Each 3000 Hours or 5 Years of Main Rotor Mast (412-040-366-103 and -105) Operation	BHT-412-MM, Chapter 05	



Table 1. Applicable Manual (continued)

	BHT-412-MM	BHT-412-MMS-EPX
Special Inspection — Each 3000 Hours of Transmission (412-040-008-101/103) Operation		412-A-05-47-00-26A-283A-A
Special Inspection — Each 3000 Hours of Transmission (412-040-002) Operation	<a href="#">BHT-412-MM, Chapter 05</a>	
Special Inspection — Each 3000 Hours of Transmission (412-040-004/412-040-007/412-040-802) Operation	<a href="#">BHT-412-MM, Chapter 05</a>	
Special Inspection — 3600 Hours Total Airframe Time and Each 300 Hours/12 Months Inspection	<a href="#">BHT-412-MM, Chapter 05</a>	
Special Inspection — Each 3000 Hours or 5 Years Of Transmission Mount Assembly (204-031-927) And Friction Damper Assembly (204-031-920) Operation	<a href="#">BHT-412-MM, Chapter 05</a>	
Special Inspection — Each 10 Year Collective Stick Tube Inspection	<a href="#">BHT-412-MM, Chapter 05</a>	
Float Bag Inspections — General		<a href="#">412-A-05-47-10-01A-028B-A / 00026</a>
Float Bag Inspections — Part A: Regular 180-Day Inspection (Low Pressure)		<a href="#">412-A-05-47-10-02A-283B-A / 00027</a>
Float Bag Inspections — Part B: 2-Year Inspection (Moderate Pressure)		<a href="#">412-A-05-47-10-03A-283B-A / 00028</a>
Float Bag Inspections — Part C: Annual Inspection (Moderate Pressure), Bags With 10 or More Years Service Completed		<a href="#">412-A-05-47-10-04A-283B-A / 00029</a>
Float Bag Inspections — Emergency Flotation System Inflation Test (Every Two Years)		<a href="#">412-A-05-47-10-01A-340B-A / 00030</a>
Float Bag Inspections — 180-Day Operational Check of Float Switches and Electrical Circuit		<a href="#">412-A-05-47-10-01A-320B-A / 00031</a>
Float Bag Inspections — 2-Year Cylinder Special Inspection		<a href="#">412-A-05-47-10-05A-283B-A / 00032</a>
<b>CONDITIONAL INSPECTIONS</b>		
Conditional Inspection — Description		<a href="#">412-A-05-50-00-00A-028A-A / 00033</a>
Conditional Inspection — After Hard Landing	<a href="#">BHT-412-MM, Chapter 05</a>	
Conditional Inspection — Sudden Stoppage - Power On or Off	<a href="#">BHT-412-MM, Chapter 05</a>	
<i>Conditional Inspection — After Overspeed</i>		<a href="#">412-A-05-50-00-13A-284A-A / 00033.1</a>
Conditional Inspection — After Overtorque		<a href="#">412-A-05-50-00-08A-284A-A / 00034</a>
Conditional Inspection — After Compressor Stall or Surge	<a href="#">BHT-412-MM, Chapter 05</a>	
Conditional Inspection — After Lightning Strikes	<a href="#">BHT-412-MM, Chapter 05</a>	
Conditional Inspection — After Engine Combining Gearbox Clutch Non-engagement, Mismanagement, or In-flight Slippage	<a href="#">BHT-412-MM, Chapter 05</a>	

Table 1. Applicable Manual (continued)

BHT-412-MM	BHT-412-MMS-EPX
<b>COMPONENT OVERHAUL SCHEDULE</b>	
Component Overhaul Schedule — Description	<a href="#">412-A-05-10-00-01A-281A-A / 00036</a>

## Inspections - General Description

This chapter contains the requirements for scheduled, special, and conditional inspections, and a component overhaul schedule.



**FAILURE TO CORRECT CONDITIONS SUCH AS, BUT NOT LIMITED TO, CORROSION, EROSION, MECHANICAL DAMAGE, OR OBVIOUS WEAR FOUND DURING A SCHEDULED INSPECTION COULD SERIOUSLY AFFECT THE AIRWORTHINESS OF THE HELICOPTER.**

### NOTE

This chapter contains the necessary data to do maintenance on the systems, subsystems, and units that are applicable only to the 412EPX. For all systems, subsystems, and units not covered in this manual, refer to the [BHT-412-MM, Chapter 5](#).

These inspection requirements are an inspection program designed and recommended by Bell Helicopter Textron (BHT) for the 412EPX. These inspection requirements are to be used in conjunction with the Model 412 Series requirements contained in the [BHT-412-MM, Chapter 5](#).

For the use of these inspection requirements, including inspection tolerances and definition of terms and inspections, refer to the [BHT-412-MM, Chapter 5](#).

For inspections that apply specifically to the engine, refer to the Pratt & Whitney Canada PT6T-9 Maintenance Manual, 3053182 for requirements.

### Scheduled Inspections

Part A - Inspect the helicopter daily, each 100 hours/ 12 months, each 1000 hours, and each 5000 hours/ 5 years.

Part B - Inspect the helicopter each 25 hours/ 30 days, each 300 hours/12 months, each 600 hours/ 12 months, and each 5000 hours/5 years.

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## Scheduled Inspections - Daily Inspection - Part A Procedure

Table 1. Daily Inspection - Part A

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTH- ER
3053182	<p>DATE: _____ W.O. _____</p> <p>FACILITY: _____</p> <p>HELICOPTER S/N: _____</p> <p>REGISTRY NO.: _____</p> <p>TOTAL TIME: _____</p> <p>SIGNATURE: _____</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">For helicopters on the Part A inspection program, accomplish the following checks daily before flight operation.</p> <p><b>GENERAL</b></p> <p>1. Each listed inspection item or maintenance function is to be performed in accordance with the specified data module in the <a href="#">BHT-412-MM</a>, <a href="#">BHT-412-MMS-EPX</a>, or <a href="#">BHT-412-CR&amp;O</a>.</p> <p>2. Refer to the Pratt &amp; Whitney Canada PT6T-9 Maintenance Manual for engine inspection requirements.</p> <p>3. Refer to the <a href="#">BHT-412-MM</a>, <a href="#">Chapter 5</a> for the other daily inspections of the Part A inspection program.</p> <p><b>EMERGENCY FLOAT KIT (412-706-150)</b></p> <p>1. Inspect crosstubes for condition, and crosstube supports for condition and security of attachment (evidence of debonding and/or movement).</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">If any evidence of debonding and/or movement of the upper and lower supports is found, complete the support removal (<a href="#">412-A-32-45-00-13A-520B-A / 00427</a>, <a href="#">412-A-32-45-00-14A-520B-A / 00430</a> and <a href="#">412-A-32-45-00-15A-520B-A / 00433</a>) and rebonding procedures applicable as per <a href="#">412-A-32-45-00-13A-720B-A / 00429</a>, <a href="#">412-A-32-45-00-14A-720B-A / 00432</a> and <a href="#">412-A-32-45-00-15A-720B-A / 00435</a>.</p> <p>2. Visually inspect skid tubes and skid shoes for condition, corrosion, and security of attachment (evidence of debonding and/or movement). Refer to <a href="#">412-A-32-45-00-05A-685B-A / 00401</a> and <a href="#">412-A-32-45-00-06A-685B-A / 00407</a> for repair procedure.</p>		

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## Scheduled Inspections - 100-Hour/12-Month Inspection - Part A Procedure

Table 1. 100-Hour/12-Month Inspection - Part A

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
	FACILITY: _____ _____ HELICOPTER S/N: _____ _____ REGISTRY NO.: _____ _____ TOTAL TIME: _____ _____ SIGNATURE: _____ _____ DATE: _____ W.O. _____		
	<b>NOTE</b>		
	For helicopters on the Part A inspection program, accomplish each 100 hours of flight operation or after 12 calendar months, whichever comes first.		
	<b>GENERAL</b>		
3053182	1. Each listed inspection item or maintenance function is to be performed in accordance with the specified data module in the <a href="#">BHT-412-MM</a> , <a href="#">BHT-412-MMS-EPX</a> , or <a href="#">BHT-412-CR&amp;O</a> .		
	2. Refer to the Pratt & Whitney Canada PT6T-9 Maintenance Manual for engine inspection requirements.		
	3. Record all work accomplished during inspection in the helicopter maintenance record.		
	4. Check helicopter records for recorded discrepancies.		
<a href="#">412-A-05-40-00-20A-281A-A / 00015</a>	5. Accomplish complete Daily Inspection - Part A.		
	6. Refer to the <a href="#">BHT-412-MM, Chapter 5</a> for the other 100-hour/12-month inspections of the Part A inspection program.		
<a href="#">412-A-63-00-00-00A-009A-A / 00467</a>	<b>TRANSMISSION</b>		
	The 100-hour or 12-month inspection of the transmission chip detectors for debris, the cleaning, and the test are not required for the 412EPX.		
<a href="#">412-A-65-00-00-00A-009A-A / 00569</a>	<b>TAIL ROTOR GEARBOX</b>		
	The 100-hour or 12-month inspection of the tail rotor gearbox chip detector for debris, the cleaning, and the test are not required for the 412EPX.		
<a href="#">412-A-65-00-00-00A-009A-A / 00569</a>	<b>INTERMEDIATE GEARBOX</b>		
	The 100-hour or 12-month inspection of the intermediate gearbox chip detector for debris, the cleaning, and the test are not required for the 412EPX.		
<a href="#">412-A-96-00-00-00A-009A-A / 00997</a>	<b>BATTERY SYSTEM</b>		
	1. Do a servicing of the battery in-line with the battery manufacture's instruction.		

Table 1. 100-Hour/12-Month Inspection - Part A (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<p>412-A-96-20-00-00B-320B-A / 01129</p> <p>BHT-412-MM, Chapter 96</p> <p>BHT-412-MM, Chapter 96</p> <p>412-A-96-00-00-00A-009A-A / 00997</p>	<p>2. Do an inspection of the battery compartment for its general condition.</p> <p>3. Do a check of the battery mount for security and corrosion.</p> <p>4. Do the operation check of the BATTERY HOT warning message. Every third 100 hour inspection (300 hours) or every 12 months.</p> <p><b>Every third 100 hour inspection (300 hours) or every 12 months:</b></p> <p>5. Do an electrical leak check of the standby attitude battery.</p> <p>6. Do the capacity test of the standby attitude battery.</p> <p><b>EMERGENCY BUS AND POWER DIODES</b></p> <p><b>Every third 100 hour inspection (300 hours) or every 12 months:</b></p> <p>1. Perform an operational check of emergency bus system as follows:</p> <p>1.1. Inspect EMERG BUS INTCT circuit breaker for wear. Operate circuit breaker manually and check by feel. Worn or loose circuit breaker is not acceptable. Close circuit breaker.</p> <p>1.2. Place all switches in OFF or NORM position and close all circuit breakers.</p> <p>1.3. Connect battery.</p> <p>1.4. Place BATTERY BUS 1 switch and BATTERY BUS 2 switch in the ON position. Position INV 1 and INV 2 switches in the ON position. INVERTER 1 and INVERTER 2 Crew Alerting System (CAS) messages should not be illuminated.</p> <p>1.5. Check emergency bus power by pressing the FIRE SYSTEM TEST switch momentarily. Observe both FIRE ARM switches illuminate.</p> <p>1.6. Position emergency bus switch to EMERG LOAD position. Check emergency bus power by pressing the FIRE SYSTEM TEST switch momentarily. Observe both FIRE ARM switches. Verify INVERTER 1 and INVERTER 2 CAS messages are illuminated.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Check INVERTER 1 CAS message is not illuminated and INVERTER 2 CAS message is illuminated.</p> <p>1.7. Position BATTERY BUS 1 and BATTERY BUS 2 switches off. Check emergency bus power by pressing FIRE SYSTEM TEST switch button momentarily. Observe FIRE ARM switches illuminate.</p> <p>1.8. Position INVERTER 1 and INVERTER 2 switches OFF. Position emergency bus switch to NORMAL. Disconnect battery.</p> <p>2. Perform functional check of power diodes.</p> <p><b>INSTRUMENT SYSTEMS</b></p>		
<p>412-A-96-65-01-00A-340A-A / 01041</p>	<p>2. Perform functional check of power diodes.</p> <p><b>INSTRUMENT SYSTEMS</b></p>		



Table 1. 100-Hour/12-Month Inspection - Part A (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<a href="#">412-A-95-64-03-09A-320A-A / 00885</a> <a href="#">412-A-96-67-02-03A-320A-A / 01081</a>	<p><b>Every third 100 hour inspection (300 hours) or every 12 months:</b></p> <ol style="list-style-type: none"> <li>Do a PSI - Operational Check.</li> <li>Do a Mast Torque System - Flight Check.</li> </ol> <p><b>EMERGENCY FLOAT KIT (412-706-150)</b></p> <ol style="list-style-type: none"> <li>Inspect forward and aft caps holding crosstubes to helicopter for security, and the rubber pads for looseness and/or deterioration.</li> <li>Visually inspect crosstubes for damage as follows:</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p>Particular care should be taken to inspect in the areas of the supports at the aircraft attach points.</p> <ol style="list-style-type: none"> <li>Inspect the crosstube for scratches, nicks, dents, and corrosion, and note the depth of the damage. Refer to the zones shown in <a href="#">412-A-32-45-00-09A-685B-A / 00419</a>. The minimal longitudinal distance between repairs is 3.0 inches (76.2 mm). Crosstubes exceeding the damage limits must be replaced.</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p>The limits of the damage are also restricted axially and radially as shown in <a href="#">412-A-32-45-00-09A-685B-A / 00419</a>.</p> <ol style="list-style-type: none"> <li>Visually inspect the landing gear supports for nicks, dents, and corrosion. For damage and repair limits, refer to <a href="#">412-A-32-45-00-09A-685B-A / 00419</a>. Replace support if damaged beyond limits.</li> <li>Check the torque on the U-bolts that attach the supports (80 to 100 inch-pounds (9.0 to 11.3 Nm)). Retorque if necessary.</li> <li>Inspect the skid tubes for scratches, nicks, dents, and corrosion. Refer to <a href="#">412-A-32-45-00-05A-685B-A / 00401</a> for damage and repair limits and for damage and repair zones. The minimal axial distance between repairs is 3 inches (76.2 mm). If the damage limits are exceeded, the skid tube must be replaced. Refer to <a href="#">412-A-32-45-00-05A-520B-A / 00399</a> and <a href="#">412-A-32-45-00-05A-720B-A / 00404</a>.</li> <li>Inspect the region of the skid tube between the saddles for bending. A smooth bend from saddle to saddle with an apex of 1.5 inches (38.1 mm) is acceptable. If the bending exceeds 1.5 inches (38.1 mm) the tube must be replaced. Refer to <a href="#">412-A-32-45-00-05A-520B-A / 00399</a> and <a href="#">412-A-32-45-00-05A-720B-A / 00404</a>.</li> <li>Inspect the skid tube outer diameter for a maximum out-of-round (flatness) of 0.2 inches (5.1 mm), refer to <a href="#">412-A-32-45-00-05A-685B-A / 00401</a>. If the tube is found to be in excess of the 0.2 inches (5.1 mm) limit, it must be replaced or repaired as required.</li> </ol>		

Table 1. 100-Hour/12-Month Inspection - Part A (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
	<p>7. Damage exceeding 0.03 inches (.8 mm) in depth and/or 1.25 inches (31.8 mm) in length on the tow fitting is not permitted. If these limits are exceeded the tow ring must be replaced. Replace the mounting hardware (MS21042L6 nut, NAS149D0663J, and NAS1149D1063J washers) if damaged, or corroded.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Cracks that run transversely across weld beads are permissible.</p> <p>8. Visually inspect the skid shoes for damage. Refer to <a href="#">412-A-32-45-00-06A-685B-A / 00407</a> for repair procedure.</p> <p>9. Inspect the walkway nonslip compound on the top of each skid tube. Refer to <a href="#">412-A-32-45-00-05C-685B-A / 00403</a> for walkway repair procedure.</p> <p>10. Check the torque on the saddle bolts attaching the crosstube and skid tube (refer to <a href="#">412-A-32-45-00-09A-720B-A / 00420</a>). Retorque if necessary.</p>		

## Scheduled Inspections - 1000-Hour Inspection - Part A Procedure

Table 1. 1000-Hour Inspection - Part A

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
	FACILITY: _____ HELICOPTER S/N: _____ REGISTRY NO.: _____ TOTAL TIME: _____ SIGNATURE: _____ DATE: _____ W.O. _____  <p style="text-align: center;"><b>NOTE</b></p> For helicopters on the Part A inspection program, accomplish each 1000 hours of flight operation.  Refer to the <a href="#">BHT-412-MM, Chapter 5</a> for the 1000-hour inspections of the Part A inspection program.		

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## Scheduled Inspections - 5000-Hour/5-Year Inspection - Part A Procedure

Table 1. 5000-Hour/5-Year Inspection - Part A

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
	DATE: _____ W.O. _____ FACILITY: _____ HELICOPTER S/N: _____ REGISTRY NO.: _____ TOTAL TIME: _____ SIGNATURE: _____  <p style="text-align: center;"><b>NOTE</b></p> For helicopters on the Part A inspection program, accomplish each 5000 hours of flight operation or 5 calendar years, whichever comes first.  Refer to the <a href="#">BHT-412-MM, Chapter 5</a> for the 5000-hour/5-year inspections of the Part A inspection program.		

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## Scheduled Inspections - 25-Hour/30-Day Inspection - Part B Procedure

Table 1. 25-Hour/30-Day Inspection - Part B

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
3053182	<p>DATE: _____ W.O. _____            FACILITY: _____            HELICOPTER S/N: _____            REGISTRY NO.: _____            TOTAL TIME: _____            SIGNATURE: _____</p> <p style="text-align: center;"><b>NOTE</b></p> <p>For helicopters on the Part B inspection program, accomplish the following checks each 25 hours of flight operation or 30 days, whichever occurs first.</p> <p><b>GENERAL</b></p> <ol style="list-style-type: none"> <li>Each listed inspection item or maintenance function is to be performed in accordance with the specified data module in the <a href="#">BHT-412-MM</a>, <a href="#">BHT-412-MMS-EPX</a>, or <a href="#">BHT-412-CR&amp;O</a>.</li> <li>Refer to the Pratt &amp; Whitney Canada PT6T-9 Maintenance Manual for engine inspection requirements.</li> <li>Refer to the <a href="#">BHT-412-MM</a>, <a href="#">Chapter 5</a> for the 25-hour/30-day inspections of the Part B inspection program.</li> </ol> <p><b>EMERGENCY FLOAT KIT (412-706-150)</b></p> <ol style="list-style-type: none"> <li>Inspect crosstube for condition, and crosstube supports for condition and security of attachment (evidence of debonding and/or movement).</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p>If any evidence of debonding and/or movement of the upper and lower supports is found, complete the support removal (<a href="#">412-A-32-45-00-13A-520B-A / 00427</a>, <a href="#">412-A-32-45-00-14A-520B-A / 00430</a> and <a href="#">412-A-32-45-00-15A-520B-A / 00433</a>) and rebonding procedures applicable as per <a href="#">412-A-32-45-00-13A-720B-A / 00429</a>, <a href="#">412-A-32-45-00-14A-720B-A / 00432</a> and <a href="#">412-A-32-45-00-15A-720B-A / 00435</a>.</p> <ol style="list-style-type: none"> <li>Visually inspect skid tubes and skid shoes for condition, corrosion, and security of attachment (evidence of debonding and/or movement). Refer to <a href="#">412-A-32-45-00-05A-685B-A / 00401</a> and <a href="#">412-A-32-45-00-06A-685B-A / 00407</a> for repair procedure.</li> </ol>		
<a href="#">412-A-26-00-00-00A-009A-A / 00144</a>	<p><b>HALOTRON FIRE EXTINGUISHER KITS (412-704-180-101 and 412-706-180-101)</b></p> <ol style="list-style-type: none"> <li>Visually inspect the portable fire extinguishers for condition, mounting, and valid inspection certificate.</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p>The halotron fire extinguisher (192N69953) must be replaced after 12 years as determined by the date of manufacture.</p>		

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## Scheduled Inspections - 300-Hour/12-Month Inspection - Part B Procedure

Table 1. 300-Hour/12-Month Inspection - Part B

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
412-A-96-00-00-00A-009A-A / 00997	<p>DATE: _____ W.O. _____</p> <p>FACILITY: _____</p> <p>HELICOPTER S/N: _____</p> <p>REGISTRY NO.: _____</p> <p>TOTAL TIME: _____</p> <p>SIGNATURE: _____</p> <p style="text-align: center;"><b>NOTE</b></p> <p>For helicopters on the Part B inspection program, accomplish the following checks each 300 hours of flight operation or after 12 calendar months, whichever comes first.</p> <p><b>GENERAL</b></p> <p>1. Each listed inspection item or maintenance function is to be performed in accordance with the specified data module in the <a href="#">BHT-412-MM</a>, <a href="#">BHT-412-MMS-EPX</a>, or <a href="#">BHT-412-CR&amp;O</a>.</p> <p>2. Refer to the <a href="#">BHT-412-MM</a>, Chapter 5 for the other 300-hour/12-month inspections of the Part B inspection program.</p> <p><b>EMERGENCY BUS INTERCONNECT CIRCUIT BREAKER AND DIODES</b></p> <p>1. Perform an operational check of the emergency bus interconnect circuit breaker and diodes:</p> <p>1.1. Inspect EMERG BUS INTCT circuit breaker for wear. Operate circuit breaker manually and check by feel. Worn or loose circuit breaker is not acceptable. Close circuit breaker.</p> <p>1.2. Place all switches in OFF or NORM position and close all circuit breakers.</p> <p>1.3. Connect battery.</p> <p>1.4. Place BATTERY BUS 1 switch and BATTERY BUS 2 switch in the ON position. Position INV 1 and INV 2 switches in the ON position. INVERTER 1 and INVERTER 2 Crew Alerting System (CAS) messages should not be illuminated.</p> <p>1.5. Check emergency bus power by pressing the FIRE SYSTEM TEST switch momentarily. Observe both FIRE ARM switches illuminate.</p> <p>1.6. Position emergency bus switch to EMERG LOAD position. Check emergency bus power by pressing the FIRE SYSTEM TEST switch momentarily. Observe both FIRE ARM switches. Verify INVERTER 2 CAS message is illuminated.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Check INVERTER 1 CAS message is not illuminated and INVERTER 2 CAS message is illuminated..</p> <p>1.7. Position BATTERY BUS 1 and BATTERY BUS 2 switches off. Check emergency bus power by pressing FIRE SYSTEM TEST switch button momentarily. Observe FIRE ARM switches illuminate.</p>		

Table 1. 300-Hour/12-Month Inspection - Part B (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<a href="#">412-A-96-65-01-00A-340A-A / 01041</a>	1.8. Position INVERTER 1 and INVERTER 2 switches OFF. Position emergency bus switch to NORMAL. Disconnect battery. 2. Perform functional check of power diodes.		
<a href="#">412-A-95-64-03-09A-320A-A / 00885</a> <a href="#">412-A-96-67-02-03A-320A-A / 01081</a>	<b>INSTRUMENT SYSTEMS</b> 1. Do a PSI - Operational Check. 2. Do a Mast Torque System - Flight Check.		
<a href="#">412-A-63-00-00-00A-009A-A / 00467</a>	<b>FUSELAGE - CABIN</b> 1. Transmission:  The 300-hour or 12-month inspection of the transmission chip detectors for debris, the cleaning, and the test are not required for the 412EPX.		
<a href="#">412-A-65-00-00-00A-009A-A / 00569</a>	<b>TAILBOOM</b> 1. Intermediate gearbox.  The 300-hour or 12-month inspection of the intermediate gearbox chip detector for debris, the cleaning, and the test are not required for the 412EPX. 2. Tail rotor gearbox.  The 300-hour or 12-month inspection of the tail rotor gearbox chip detector for debris, the cleaning, and the test are not required for the 412EPX.		
	<b>EMERGENCY FLOAT KIT (412-706-150)</b> 1. Inspect forward and aft caps holding crosstubes to helicopter for security, and the rubber pads for looseness and/ or deterioration. 2. Visually inspect crosstubes for damage as follows:  <p style="text-align: center;"><b>NOTE</b></p> Particular care should be taken to inspect in the areas of the supports at the aircraft attach points.  2.1. Inspect the crosstube for scratches, nicks, dents, and corrosion, and note the depth of the damage. Refer to the zones shown in <a href="#">412-A-32-45-00-09A-685B-A / 00419</a> . The minimal longitudinal distance between repairs is 3.0 inches (76.2 mm). Crosstubes exceeding the damage limits must be replaced.  <p style="text-align: center;"><b>NOTE</b></p> The limits of the damage are also restricted axially and radially as shown in <a href="#">412-A-32-45-00-09A-685B-A / 00419</a> .  2.2. Visually inspect the landing gear supports for nicks, dents, and corrosion. For damage and repair limits, refer to <a href="#">412-A-32-45-00-09A-685B-A / 00419</a> . Replace support if damaged beyond limits. 3. Check the torque on the U-Bolts that attach the supports (80 to 100 inch-pounds (9.0 to 11.3 Nm)). Retorque if necessary.		

Table 1. 300-Hour/12-Month Inspection - Part B (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<a href="#">BHT-412-MM, Chapter 96</a> <a href="#">BHT-412-MM, Chapter 96</a>	<p>4. Visually inspect skid tubes and skid shoes for excessive wear, scratches, nicks, dents, cracks, holes, corrosion, and security of attachment. Refer to <a href="#">412-A-32-45-00-05A-685B-A / 00401</a>, for damage and repair limits and for damage and repair zones. The minimal axial distance between repairs is 3 inches (76.2 mm). If the damage limits are exceeded, the skid tube must be replaced. Refer to <a href="#">412-A-32-45-00-05A-520B-A / 00399</a> and <a href="#">412-A-32-45-00-05A-720B-A / 00404</a>.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Particular care should be taken to inspect in the areas of the fasteners in the skid tubes and all attaching components.</p> <p>5. Inspect the region of the skid tube between the saddles for bending. A smooth bend from saddle to saddle with an apex of 1.5 inches (38.1 mm) is acceptable. If the bending exceeds 1.5 inches (38.1 mm), the tube must be replaced. Refer to <a href="#">412-A-32-45-00-05A-520B-A / 00399</a> and <a href="#">412-A-32-45-00-05A-720B-A / 00404</a>.</p> <p>6. Inspect the skid tube outer diameter for a maximum out-of-round (flatness) of 0.2 inches (5.1 mm), refer to <a href="#">412-A-32-45-00-05A-685B-A / 00401</a>. If the tube is found to be in excess of the 0.2 inches (5.1 mm) limit, it must be replaced, or repaired as required.</p> <p>7. Damage exceeding 0.03 inches (.8 mm) deep and/or 1.25 inches (31.8 mm) long on the tow fitting is not permitted. If these limits are exceeded, the tow ring must be replaced. Replace the mounting hardware (MS21042L6 nut, NAS149D0663J, and NAS1149D1063J washers) if damaged, or corroded.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Cracks that run transversely across weld beads are permissible.</p> <p>8. Visually inspect the skid shoes for damage. Refer to <a href="#">412-A-32-45-00-06A-685B-A / 00407</a> for repair procedure.</p> <p>9. Inspect the walkway nonslip compound on the top of each skid tube. Refer to <a href="#">412-A-32-45-00-05C-685B-A / 00403</a> for walkway repair procedure.</p> <p>10. Check the torque on the saddle bolts attaching the crosstube and skid tube (refer to <a href="#">412-A-32-45-00-09A-720B-A / 00420</a>). Retorque if necessary.</p> <p><b><u>BATTERY SYSTEM</u></b></p> <p>1. <i>Do an electrical leak check of the standby attitude battery.</i></p> <p>2. <i>Do the capacity test of the standby attitude battery.</i></p>		

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**Scheduled Inspections - 600-Hour/12-Month Inspection - Part B  
Procedure**

**Table 1. 600-Hour/12-Month Inspection - Part B**

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<p>412-A-96-00-00-00A-009A-A / 00997</p> <p>412-A-96-20-00-00B-320B-A / 01129</p>	<p>DATE: _____ W.O. _____</p> <p>FACILITY: _____</p> <p>HELICOPTER S/N: _____</p> <p>REGISTRY NO.: _____</p> <p>TOTAL TIME: _____</p> <p>SIGNATURE: _____</p> <p align="center"><b>NOTE</b></p> <p>For helicopters on the Part B inspection program, accomplish each 600 hours of flight operation or 12 calendar months, whichever occurs first.</p> <p>Refer to the <a href="#">BHT-412-MM, Chapter 5</a> for the 600-hour/12-month inspections of the Part B inspection program.</p> <p>1. Do the operation check of the BATTERY HOT warning message.</p>		

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**Scheduled Inspections - 5000-Hour/5-Year Inspection - Part B  
Procedure**

**Table 1. 5000-Hour/5-Year Inspection - Part B**

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
	DATE: _____ W.O. _____ FACILITY: _____ HELICOPTER S/N: _____ REGISTRY NO.: _____ TOTAL TIME: _____ SIGNATURE: _____  <p align="center"><b>NOTE</b></p> For helicopters on the Part B inspection program, accomplish each 5000 hours of flight operation or 60 months, whichever occurs first.  Refer to the <a href="#">BHT-412-MM, Chapter 5</a> for the 5000-hour/5-year inspections of the Part B inspection program.		

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## Special Inspections - Description

### NOTE

Refer to the Pratt & Whitney Canada PT6T-9 Maintenance Manual, 3053182 for special inspections that apply specifically to the engine and related components.

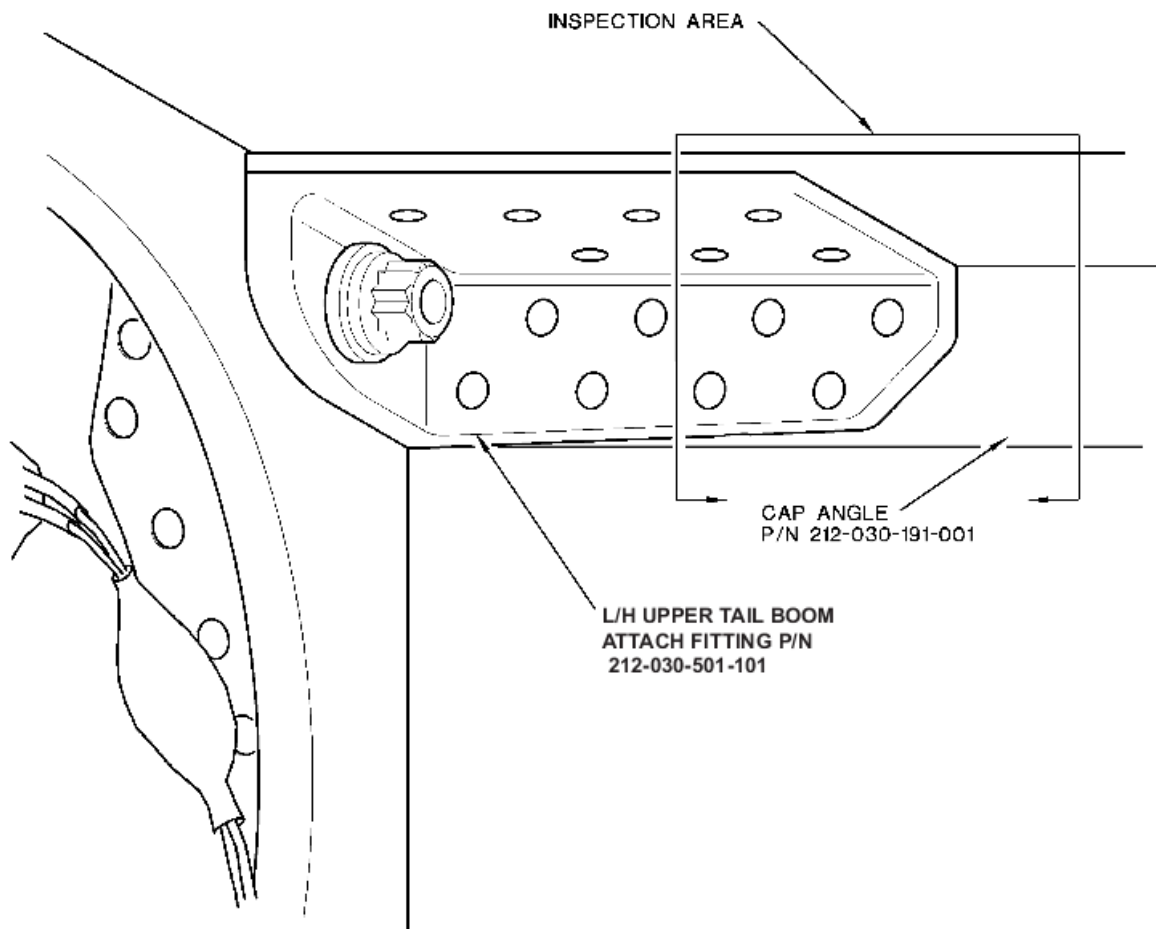
For special inspections, refer to the [BHT-412-MM, Chapter 5](#).

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## Special Inspections - Each 50 Hours Tailboom Attachment Inspection Procedure

Table 1. Each 50 Hours Tailboom Attachment Inspection

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<p>412-A-04-00-00-00A-018A-A / 00011</p>	<p>DATE: _____ W.O. _____                      FACILITY: _____                      HELICOPTER S/N: _____                      REGISTRY NO.: _____                      TOTAL TIME: _____                      SIGNATURE: _____</p> <p style="text-align: center;"><b>NOTE</b></p> <p>This inspection applies only to helicopters S/N 38001 through 38999, S/N 39101 through 39999.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Accomplish every 50 hours of helicopter operation. This inspection is mandated by Chapter 4 (412-A-04-00-00-00A-018A-A / 00011). No extensions are permitted.</p> <p><b><u>FUSELAGE/TAILBOOM ATTACHMENT</u></b></p> <p>1. Inspect fuselage and tailboom attachment components and hardware for cracks with 10X magnifying glass. Pay particular attention to interface between forward end of tailboom attachment fitting and cap angle, and main beam web area below cap angle (Figure 1).</p>		



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Figure 1. Fuselage Tailboom Attachment Inspection (Sheet 1 of 1)

## Float Bag Inspections - General

### NOTE

BHT internal procedures require an additional initial emergency flotation system inflation test. Completion of this test is indicated on the float bag cover. Customer/operator is to use the date on the log card to sequence the 180-day inspections.

In addition to the initial test requirements, there are three types of scheduled inspections that apply to float bags:

### Initial Test Requirements

Applicable to bags in storage for more than 3 years.

#### Part A

A regular low pressure inspection done at the completion of every 180-day period unless indicated otherwise.

#### Part B

A similar inspection to Part A with increased pressure requirements, performed on the bag every two years (i.e. every fourth 180-day inspection) unless as indicated otherwise.

#### Part C

The inspection procedure described in Part B, becomes applicable to the bag on an annual basis at the end of the tenth (10) year in service.

All inspections (Part A, B, or C) can be accomplished separately for each bag, or during the scheduled emergency flotation system inflation test, which is required every 2 years.

### Initial Test Requirements

### NOTE

Individual float bag inflation or deflation will be accomplished using the test fittings on the float bag. Use either clean, oil free, dry, shop air or nitrogen as required. Test(s) will be accomplished with a connector fitting between the reservoir inflation valve and the bag distribution line (convenient location) loosened. This permits the gas pressure in the distribution line to equalize with the atmospheric pressure in case of bag check valve malfunction.

New float bag (never installed since new) that has been in storage for more than three years from date of manufacture must pass the following test in the sequence listed, prior to installation.

Float bags with less than three years in storage (never listed since new) must comply with [412-A-05-47-10-02A-283B-A / 00027](#), before initial installation on an aircraft.

### NOTE

Refer to the above Part A, B, or C inspection as applicable, for a float bag that is, or has been installed on a helicopter.

### NOTE

Float inflation or deflation will be accomplished using the test fittings on float bag. Use either clean, oil free, dry, shop air or nitrogen as required.

To test the internal diaphragm(s), inflate alternately each float compartment to 3.0 psig (20.7 kPa). Pressure should not drop below 2.75 psig (19.0 kPa) after 1 hour for each compartment.

Inflate all float components to 4.0 psig (27.6 kPa). The check valve in inflation fitting shall not be capped. The pressure should not drop below 3.75 psig (25.9 kPa) after 1 hour.

### NOTE

The pressure relief valve is designed to open at  $5.0 \pm 0.5$  psig ( $34.5 \text{ kPa} \pm 3.5 \text{ kPa}$ ). Normally, these valves should not open during this test.

Decrease the pressure to 2.25 psig (15.5 kPa) at a temperature of  $75.0 \text{ }^\circ\text{F} \pm 10 \text{ }^\circ\text{F}$  ( $23.9 \text{ }^\circ\text{C} \pm 12.2 \text{ }^\circ\text{C}$ ), and atmospheric pressure of  $29.92 \pm 0.5$  inches of mercury. Adjust the pressure after 1 hour to 2.05 psig (15.5 kPa). Maintain a constant temperature. The pressure shall not drop below 2.0 psig (13.8) over a period of 24 hours.

During preceding [Paragraph 5](#), carefully examine the float bag for any signs of deterioration, surface contamination, separating seams, abrasion and audible or visible leaks.

**NOTE**

The inspections as per [412-A-05-47-10-02A-283B-A / 00027](#), [412-A-05-47-10-03A-283B-A / 00028](#), or [412-A-05-47-10-04A-283B-A / 00029](#) become applicable and recurring as prescribed following the initial testing and installation of the bag until it is retired.

## Float Bag Inspections - Part A: Regular 180-Day Inspection (Low Pressure)

### Procedure

#### NOTE

Individual float bag inflation or deflation will be accomplished using the test fittings on the float bag. Use either clean, oil free, dry, shop air or nitrogen as required. Test(s) will be accomplished with a connector fitting between the reservoir inflation valve and the bag distribution line (convenient location) loosened. This permits the gas pressure in the distribution line to equalize with the atmospheric pressure in case of bag check valve malfunction.

#### NOTE

This inspection is required every 180 days following initial installation of each individual bag except when Part B (every two years) or Part C (annual) inspections apply.

1. Locate the helicopter in a clear area with sufficient room for bag(s) to be inflated, and ensure that the inflation safety pin is installed in valve of the reservoir.
2. Perform the Regular 180-Day Inspection (Low Pressure) of the affected bag as follows:

#### NOTE

This test should be performed in the hangar or in an area shaded from the sun. Do not perform this test when Outside Air Temperature (OAT) exceeds 100 °F (37.78 °C). An effort should be made to keep the temperature constant during this test.

#### NOTE

If all bags are inspected at the same time, they can be inflated using the manual release handle or the firing squib. Refer to [412-A-05-47-10-01A-340B-A / 00030](#). Keep all lines and connectors tight.

- 2.1. Unpack the float bag, remove the rubber strap assemblies and inflate all compartments to 2.25 psig (15.5 kPa).
- 2.2. Record the initial test temperature in °F (°C) at the end of 1 hour stabilization and adjust the pressure of all compartments to 2.25 psig (15.5 kPa).

#### NOTE

The pressure shall not drop lower than 2.0 psig (13.78 kPa), corrected for any temperature change after 6 hours.

3. Correction for temperature change after the additional 6 hour test period will be accomplished as follows:
  - 3.1. Record the final temperature °F (°C).
  - 3.2. Calculate the difference between the initial temperature and final temperature. Plot this difference on the chart in [Figure 1](#) to determine the factor to use to correct the final pressure.

#### NOTE

If outside temperature increased during the test period, subtract the values determined in [Step 3.2.](#) from the final bag pressure recorded at the end of the 6 hour test period.

If outside temperature decreased during the test period, add the value determined in [Step 3.2.](#) to the final bag pressure recorded at the end of the 6 hour test period.

- 3.3. The final corrected float bag pressure after final testing should not be lower than 2.0 psig (13.78 kPa). Replace bag, if final corrected pressure is less.

#### EXAMPLE:

After 1 hour stabilization period:

Initial temperature 70°F (21°C).

Initial float pressure 2.25 psig (15.5 kPa).

After additional 6 hour test period:

Final temperature 80°F (27°C).

Final float pressure 2.37 psig (16.34 kPa).

Outside Air Temperature change:

80 °F to 70 °F (16.34 kPa to 15.5 kPa) = 10 °F (5.5 °C).

Factor for Change in Float Bag Pressure (read from [Figure 1](#)):

0.32 psig (to be subtracted in this case, due to increase of temperature after the 6 hour period).

Corrected Final Bag Pressure:

2.37 psig - 0.32 psig = 2.05 psig.

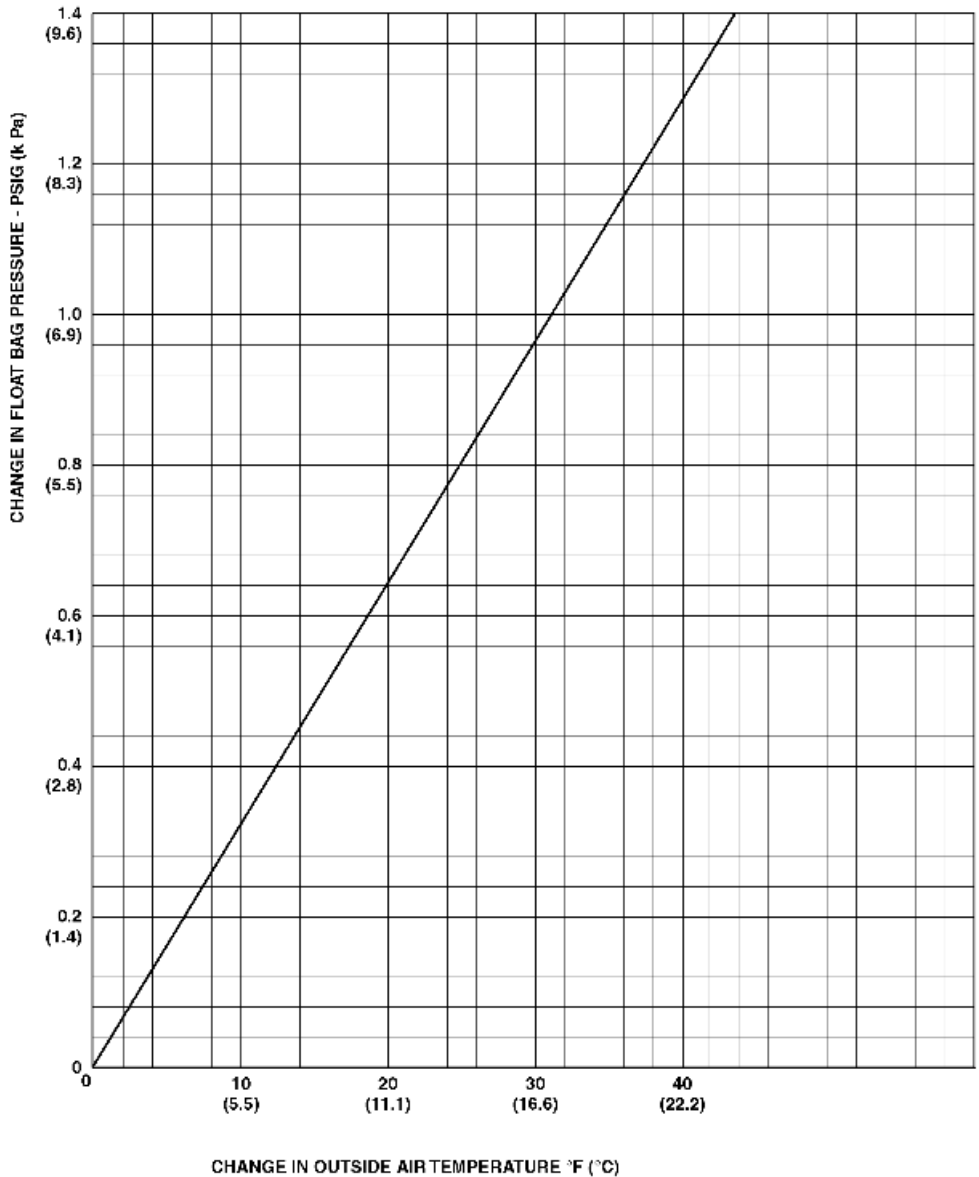
As 2.05 psig is above 2.00 psig, bag compartment is satisfactory.

**NOTE**

Use soapy water solution to test for suspected leaks.

4. During [Step 3.](#), carefully examine the float bag for any signs of deterioration, surface contamination, separating seams, abrasion and audible or visible leaks.
5. Inspect surfaces of rubber strap assemblies for crazing and cracking. Any signs of crazing or cracking are cause for replacement.
6. Deflate alternate compartments to atmospheric pressure. Adjust the pressure of inflated compartments to 2.25 psig (15.5 kPa). The pressure of inflated compartments shall not drop below 2.15 psig (14.82 kPa) following the 1 hour period.
7. Check bag covers for condition, worn spots, tears, and lacing for wear.





NOTE: METRIC UNITS IN PARENTHESES.

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Figure 1. Air Temperature vs. Float Pressure Chart (Sheet 1 of 1)

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## Float Bag Inspections - Part B: 2-Year Inspection (Moderate Pressure)

### Procedure

#### NOTE

This inspection must be performed every two years for each float bag and replaces the Part A (low pressure) inspection as applicable. This inspection can be performed alternately with Part A as required by the inspection schedule of the affected bag. This Part B inspection cannot be replaced by Part A inspection at any time.

1. Locate the helicopter in a clear area with sufficient room for bag(s) to be inflated, and ensure that the inflation safety pin is installed in valve of the reservoir.
2. Perform the 2-Year Inspection (Moderate Pressure) of the affected bag as follows:

#### NOTE

This test should be performed in the hangar or in an area shaded from the sun. Do not perform this test when OAT exceeds 100°F (38°C). An effort should be made to monitor and keep the temperature constant during this test.

3. Remove the float covers and disconnect the rubber strap assemblies from all the floats. Spread out floats as much as possible.

#### NOTE

If an individual float bag is being tested, inflate and deflate bag using the test fittings on float bag. Use either clean, oil free, dry, shop air or nitrogen as required. Test(s) will be accomplished with a connector fitting between the reservoir inflation valve and the bag distribution line (convenient location) loosened. This permits the gas pressure in the distribution line to equalize with the atmospheric pressure in case of bag check valve malfunction.

#### NOTE

If all bags are inspected at the same time, they can be inflated using the manual release handle or the firing squib (Refer to [412-A-05-47-10-01A-340B-A / 00030](#)). Keep all lines and connectors tight.

4. Open alternate compartment to atmospheric pressure and inflate remaining float compartments to 3.0 psig (20.68 kPa). Pressure should not drop below 2.75 psig (18.96 kPa) after a 1 hour period.
5. Inflate all compartments to 4.0 psig (27.57 kPa). Pressure shall not drop below 3.75 psig (25.85 kPa) following the 1 hour period.
6. During [Step 5.](#), carefully examine float bag for deterioration, surface contamination, abrasion and audible or visible leaks.
7. Decrease pressure to 2.25 psig (15.5 kPa) in all compartments. Allow pressure to stabilize over 1 hour period. Adjust the pressure in all compartments to 2.25 psig (15.5 kPa) and record the test area temperature. The pressure should not drop below 2.0 psig (13.78 kPa) corrected for any temperature change, after 6 hour test period. If bag pressure drops below 2.0 psig (13.78 kPa), repair or replace discrepant bag.
8. Perform any minor maintenance required or return the bag to the manufacturer. If major repairs are required, covers for condition, worn spots, and tears, and the lacing for wear. Follow instructions in the [412-A-32-45-00-01A-685B-A / 00385](#). Tighten and seal all connectors of the bag, and in the aircraft inflation system, as required.
9. Check bag covers for condition, worn spots, and tears, and the lacing for wear.

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## Float Bag Inspections - Part C: Annual Inspection (Moderate Pressure), Bags With 10 or More Years Service Completed

### Procedure

#### NOTE

This Part C Inspection applies to bag(s), which have reached 10 or more years of service completed from date of initial installation on an aircraft. This inspection is basically Part B but becomes applicable on an annual basis for each affected float bag. This inspection can be performed alternately with Part A as required by the inspection schedule of the affected bag. This Part C inspection cannot be replaced by Part A inspection at any time.

1. Perform an annual inspection of each affected bag with 10 years or more in service, in accordance with the procedure described under Part B.
2. Perform Regular 180-Day Inspection (Part A) at affected intervals between the Part C Inspections.
3. After 10 years of service, float repairs are limited to local coating of fabric with vendor specified cement, to seal fabric porosity. Refer to [412-A-32-00-00-00A-009A-A / 00380](#) for more details.

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## Float Bag Inspections - Emergency Flotation System Inflation Test (Every Two Years)

### Procedure

#### NOTE

The following system inspection/test shall be performed every 2 years following initial installation of the Emergency Flotation Kit on the aircraft, or following maintenance to the inflation system, as required. This test is not required on an annual basis for a flotation bag installed on the aircraft that has completed 10 years or more in service. This bag can be tested separately under Part C.

The float bag inspection requirement (Part A, Part B, or Part C) can be performed during this inflation test, as required by the individual bag inspection schedule.

1. Park helicopter in a clear area with sufficient room for all floats to be inflated.
2. Remove the float covers and disconnect the rubber strap assemblies from all floats. Spread out floats as much as possible.

#### NOTE

The operator has the option to inflate the complete Emergency Flotation System with the manual inflation part of the system or the firing squib if less than 2 years life remains. Serviceability of the squib is determined by a combination of shelf life and in-service life, which is a total of 15 years from date of manufacture.

3. Inflate float bags with the manual inflation system as follows:
  - 3.1. Remove the safety pin from the valve on the reservoir.



**ENSURE ALL PERSONNEL AND OBJECTS ARE CLEAR OF THE HELICOPTER AND SURROUNDING AREA.**

- 3.2. Inflate all floats by pulling the pilot's manual release handle.
4. If the electrical firing squib is used, accomplish the following steps:
  - 4.1. Ensure FLOAT ARM switch is off and submerge a pair of lower fuselage float switches in a container full of water. The container should be maintained in place and at proper level with the help of a stand or jack.
  - 4.2. With 28 VDC helicopter power applied, close ESS BUSS and EMERG FLOATS circuit breakers.
  - 4.3. Inflate floats by placing the EMERG FLOATS switch to ARMED position.
5. Verify that all floats are inflated.
6. Check all plumbing for leaks and security.
7. Perform Part A, B, or C float bag inspection as required.
8. Replace discrepant float bag(s) or component(s) as required.
9. Perform any minor maintenance required on float bags or return to manufacturer, if major repairs are required. After 10 years in service, float bag repairs are limited to local coating of fabric with vendor specified cement, as described in the maintenance section, to seal fabric porosity. Any float bag with more than 10 years in service, which requires maintenance and/or repair more extensive than that described, will be retired.
10. Tighten and seal connector(s) in inflation system.
11. Check bag covers for condition, worn spots, and tears, and the lacing for wear.



**THE FOLLOWING CHECK SHOULD BE MADE ONLY AT THE TIME WHEN THE PRESSURE CYLINDER IS DISCHARGED.**

12. Check manual inflation handle for proper rigging and operation.

13. If required, refurbish the squib valve as follows:



**BEFORE DISASSEMBLING VALVE FOR REFURBISHING, RELEASE THE PRESSURE IN THE SQUIB CHAMBER.**

- 13.1. Slowly back out squib valve 1-1/2 to 2 turns.
- 13.2. Disassemble the valve and refurbish per the manufacturer's data provided with the refurbishing kit.
- 13.3. Restore the valve (P/N 30905) using refurbishing kit (P/N 30907), and squib kit (P/N 30908).
- 13.4. Restore valve (P/N 20022988) using refurbishing kit (P/N 28022969) and squib kit (P/N 29022971).
- 13.5. Use lockwire to safety the shear head element and squib to the valve housing.
- 13.6. Reinstall the valve.
14. Pack floats. Refer to [412-A-32-45-00-01A-950B-A / 00387](#) for proper instructions.
15. Install the bag covers.
16. Service the system reservoir. Use calibrated gauge attached to the pressure intensifier to check accuracy of the reservoir pressure gauge. Reservoir gauge readings shall be within  $\pm 200$  psig (1379 kPa) of master gauge. Gauges that are found to be faulty shall be replaced.



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## Float Bag Inspections - 180-Day Operational Check of Float Switches and Electrical Circuit Procedure

1. Disconnect the electrical connector from the reservoir squib valve.
2. Ensure that 28 VDC is applied to the EMERG BUS 2.
3. Close the EMERG FLOATS and STEP circuit breaker.
4. Set STEP switch to RAISE.
5. Verify that both STEPS EXTEND lights illuminate on caution panel.
6. Set FLOATS switch to ARMED position.
7. Verify FLOATS ARMED light on instrument panel illuminates and steps retract.
8. Actuate a pair of float switches on lower fuselage with a container full of water.
9. Verify that 28 VDC is present between pins A (+) and B (-) of squib connector.
10. Verify that 28 VDC is present between pins C (+) and D (-) of squib connector.
11. Repeat [Step 8.](#) through [Step 10.](#) for the remaining set of float switches on the lower side of fuselage.
12. Return switches to their original position and remove power from electrical system.

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## Float Bag Inspections - 2-Year Cylinder Special Inspection Procedure

### NOTE

Cylinder assembly (212-073-920) is an FAA approved welded type reservoir. It is not DOT (ICC) approved, therefore, it does not qualify for hydrostatic inspection in a licensed ICC facility. In view of this, the FAA has approved a visual inspection to be conducted at 2 year intervals from the date of delivery, and a 10 year retirement from the manufacture date.

1. At the end of a 2 year period from date of delivery, visually inspect the cylinder assembly (212-073-920) as follows:
  - 1.1. Examine interior and exterior surfaces for any signs of rust, pitting, or other signs of corrosion (use small light suspended inside cylinder through cylinder neck).
  - 1.2. Examine interior and exterior finish for any breaks, flaking, or other signs of poor bonding of the finish coat to the metal walls of the cylinder.
  - 1.3. Examine questionable or inaccessible areas encountered during inspections described in [Step 1.1.](#) and [Step 1.2.](#) above, with a 0.25 or 0.5 i n c h (6.35 or 12.7 mm) outside diameter right angle borescope or fiber-optic flex scope to more accurately determine, if corrosion exists.
  - 1.4. Record inspection on a decal and permanently attach to cylinder.
  - 1.5. Scrap all cylinders showing any sign of corrosion. Return cylinders with finish discrepancies, but with no corrosion, for refinishing.
  - 1.6. Ship cylinders for repair to the following address:

Applied Companies  
28020 Avenue Stanford  
Valencia, CA 91355 U.S.A.  
Phone: 661-257-0090  
Fax: 661-257-3770  
Toll Free: 800-799-6194  
E-Mail: [appliedcomp@earthlink.net](mailto:appliedcomp@earthlink.net)
  - 1.7. Replace and scrap the cylinder at the completion of a 10 year period from the manufacture date.

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## Conditional Inspections - Description

### NOTE

Refer to the Pratt & Whitney Canada PT6T-9 Maintenance Manual, 3053182 for conditional inspections that apply specifically to the engine and related components.

*For overtorque conditional inspection, refer to [412-A-05-50-00-08A-284A-A / 00034](#). For 5-minute takeoff power range time exceedance conditional inspection, refer to [412-A-05-50-00-11A-284A-A / 00035](#). For overspeed conditional inspection, refer [412-A-05-50-00-13A-284A-A / 00033.1](#). For all other conditional inspections, refer to the [BHT-412-MM, Chapter 5](#).*

If overhaul evaluation is specified, complete both the conditional inspection and normal inspection procedures (as applicable) for that component listed in [BHT-412-CR&O](#).

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## Conditional Inspection - After Overspeed Procedure

Table 1. After Overspeed

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<p>412-A-62-00-00-00A-009A-A</p> <p><a href="#">BHT-412-CR&amp;O, Chapter 63</a></p> <p><a href="#">BHT-412-CR&amp;O, Chapter 62</a></p>	<p>DATE: _____ W.O. _____</p> <p>FACILITY: _____</p> <p>HELICOPTER S/N: _____</p> <p>REGISTRY NO.: _____</p> <p>TOTAL TIME: _____</p> <p>SIGNATURE: _____</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Accomplish after overspeed.</p> <p>Components removed from a helicopter for evaluation following an overspeed shall be evaluated as an interrelated group. Removal records accompanying each component shall cross reference part and serial numbers of other drive system components removed for evaluation.</p> <p><b><u>AFTER OVERSPEED</u></b></p> <p style="text-align: center;"><b>NOTE</b></p> <p>Overspeed is defined as any incident in which 104.5% main rotor RPM is exceeded and/or engine overspeed limits in engine manual are exceeded.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Main rotor RPM over 104.5% (for more than 10 seconds) or 110% will display a RTR OVERSPD CAS message. The exceedance duration and peak value will be displayed on the DU exceedance page. This CAS message can only be cleared by a maintenance action.</p> <ol style="list-style-type: none"> <li>1. If the RTR OVERSPD CAS message is latched go to the DU exceedance page to determine the exceedance duration and peak value (<a href="#">412-A-95-64-02-27A-042A-A / 00793</a>).</li> <li>2. If main rotor RPM has exceeded 110% go to step 4.</li> <li>3. If main rotor RPM has not exceeded 110%, clear the ADIU NVM exceedance (<a href="#">412-A-95-64-03-05A-550A-A / 00854</a>). No further actions required.</li> <li>4. Perform overspeed inspection as follows:               <ol style="list-style-type: none"> <li>4.1. Main rotor hub assembly:                   <ol style="list-style-type: none"> <li>4.1.1. Remove main rotor hub. Remove main rotor blades.</li> <li>4.1.2. Perform an overhaul conditional evaluation inspection. Make an entry in component record to show reason for removal was overspeed.</li> <li>4.1.3. Inspect main rotor blade retention bolts.</li> </ol> </li> <li>4.2. Main rotor blades:                   <ol style="list-style-type: none"> <li>4.2.1. Inspect main rotor blades skin for wrinkles and deformation.</li> <li>4.2.2. If no discrepancies are found, main rotor blades may be retained in service.</li> </ol> </li> </ol> </li> </ol>		

Table 1. After Overspeed (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
412-A-64-00-00-00A-009A-A  <a href="#">BHT-412-CR&amp;O, Chapter 64</a>  Pratt & Whitney Canada Engine Maintenance Manual	4.2.3. If discrepancies are found, return all blades to an authorized blade repair station. Make an entry in component record to show reason for removal was overspeed. If known, list percent of overspeed and duration. 4.3. Tail rotor hub and blades: 4.3.1. Remove tail rotor hub and blade assembly. 4.3.2. Remove tail rotor blades. 4.3.3. Replace tail rotor blade retention bolts. 4.4. Tail rotor blades: 4.4.1. Perform Major Overspeed Inspection of tail rotor blades. 4.4.2. Make an entry in component record to show reason for removal was overspeed. 4.5. Perform a close inspection of the following components. If no visual damage is found, components may be retained in service. 4.5.1. Main transmission. 4.5.2. Intermediate gearbox. Check gearbox for security and retorquer retaining bolts. 4.5.3. Tail rotor gearbox. Check gearbox for security and retorquer retaining nuts. 4.5.4. Main rotor mast. 4.5.5. Main input driveshaft. 4.5.6. Tail rotor driveshafts. 4.5.7. Tail rotor driveshafts hangers. 4.5.8. Swashplate. 4.5.9. Drive hub and sleeve. 4.5.10. Tail rotor hub. 4.6. Install a serviceable main rotor hub and blade assembly. Install serviceable tail rotor blades. Balance and install tail rotor hub and blade assembly. 4.7. Clear the ADIU NVM exceedance ( <a href="#">412-A-95-64-03-05A-550A-A / 00854</a> ). 4.8. Refer to applicable Pratt & Whitney Canada Engine Maintenance Manual for engine overspeed and inspection requirements.		



## Conditional Inspections - After Overtorque Procedure

Table 1. AFTER OVERTORQUE

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
Pratt & Whitney Canada Engine Maintenance Manuals  <a href="#">BHT-412-MM, Chapter 62</a> <a href="#">412-A-63-00-00-00A- 009A-A / 00467</a> <a href="#">BHT-412-MM, Chapter 64</a> <a href="#">412-A-65-00-00-00A- 009A-A / 00569</a>	DATE: _____ W.O. _____ FACILITY: _____ HELICOPTER S/N: _____ REGISTRY NO.: _____ TOTAL TIME: _____ SIGNATURE: _____  <p style="text-align: center;"><b>NOTE</b></p> <p>Accomplish after overtorque.</p> <p>Components removed from a helicopter for evaluation following an overtorque shall be evaluated as an interrelated group. Make entries in component records to cross reference part and serial numbers of other drive system components removed for evaluation.</p> <p><b>AFTER OVERTORQUE</b></p> <p>Overtorque is defined as any incident in which torsional loads are introduced into the helicopter dynamic system in excess of established limits.</p> <p>1. Refer to applicable Pratt &amp; Whitney Canada PT6T-9 Engine Maintenance Manual for engine overtorque inspection limits.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Steps 2 to 5 are applicable for airspeeds below 60 Knots and a mast torque (Qm) indication above 111%. These conditions will display a XMSN OVERTRQ CAS message. The exceedance duration and peak value will be displayed on the DU exceedance page.</p> <p>2. When torque has exceeded 111% for 3 seconds or less but has not exceeded 114%, clear the ADIU NVM exceedance (<a href="#">412-A-95-64-03-05A-550A-A / 00854</a> and <a href="#">412-A-95-64-03-05A-550B-A / 00855</a>). No further action is required.</p> <p>3. When torque has exceeded 111% for more than 3 seconds but has not exceeded 114% perform a thorough visual inspection of the following components. If inspection does not reveal any discrepancies or obvious damage, components may be retained in service. Clear the ADIU NVM exceedance (<a href="#">412-A-95-64-03-05A-550A-A / 00854</a> and <a href="#">412-A-95-64-03-05A-550B-A / 00855</a>).</p> <p>3.1. Tail rotor blades            3.2. Main rotor hub            3.3. Tail rotor hub            3.4. Intermediate gearbox. Check gearbox for security and torque check retaining bolts.</p>		

Table 1. AFTER OVERTORQUE (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<p>412-A-63-00-00-00A-009A-A / 00467</p>	<p>3.5. Tail rotor gearbox. Check gearbox for security and torque check retaining nuts.</p> <p>3.6. Tail rotor driveshafts</p> <p>3.7. Tail rotor driveshaft hangers</p> <p>3.8. Swashplate</p> <p>3.9. Hub and sleeve assembly</p> <p>3.10. Main driveshaft</p> <p>3.11. Mast.</p> <p>3.12. Transmission</p> <p>4. When overtorque exceeds 114%, but does not exceed 120%, do as follows:</p> <p>4.1. Perform thorough visual inspection of components listed in step 3.</p> <p>4.2. Inspect main transmission chip detectors and full flow debris monitor.</p> <p>4.2.1. If metal particles are found, indicating internal failure, remove transmission for overhaul evaluation. Make an entry in the component record explaining reason for removal was overtorque. Remove all transmission system oil lines. Flush and reinstall oil lines. Replace external oil filter element. Remove and scrap oil cooler. Install new oil cooler.</p> <p>4.2.2. If chip detectors and full flow debris monitor appear normal and there is no evidence of internal failure, return helicopter to service. Operate normally for 3 to 10 hours and then check chip detectors and full flow debris monitor. If no metal particles are found, normal scheduled inspection intervals may then be followed. If metal particles are present prior to or at the 3 to 10-hour check or if there is any evidence of internal failure, remove transmission for overhaul evaluation. Make an entry in the component record explaining reason for removal was overtorque. Remove all transmission system oil lines. Flush and reinstall oil lines. Replace external oil filter element. Remove and scrap oil cooler. Install new oil cooler.</p> <p>4.3. Clear the ADIU NVM exceedance (412-A-95-64-03-05A-550A-A / 00854 and 412-A-95-64-03-05A-550B-A / 00855).</p> <p>5. When overtorque has exceeded 120%:</p> <p style="text-align: center;"><b>NOTE</b></p> <p>If overhaul evaluation is specified, complete both the conditional inspection and normal inspection procedures (as applicable) for that component listed in BHT-412-CR&amp;O.</p>		
<p>BHT-412-CR&amp;O</p>	<p>5.1. Return the following components to an overhaul facility for overhaul evaluation.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Component removal record of dynamic components shall reflect overtorque as reason for removal.</p> <p>5.1.1. Transmission</p> <p>5.1.2. Main driveshaft</p> <p>5.1.3. Main rotor hub</p> <p>5.1.4. Mast</p>		

Table 1. AFTER OVERTORQUE (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<p>BHT-412-MM, Chapter 62</p> <p>412-A-63-00-00-00A-009A-A / 00467</p> <p>BHT-412-MM, Chapter 64</p> <p>412-A-65-00-00-00A-009A-A / 00569</p>	<p>5.2. Perform thorough visual inspection of other components outlined in step 3.</p> <p>5.3. Clear the ADIU NVM exceedance (412-A-95-64-03-05A-550A-A / 00854 and 412-A-95-64-03-05A-550B-A / 00855).</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Steps 6 to 9 are applicable for airspeeds between 60 Knots and 105 Knots with a mast torque (Qm) indication above 100%. These conditions will display a XMSN OVERTORQUE CAS message. The exceedance duration and peak value will be displayed on the DU exceedance page.</p> <p>6. When torque has exceeded 100% for 3 seconds or less but has not exceeded 105%, clear the ADIU NVM exceedance (412-A-95-64-03-05A-550A-A / 00854 and 412-A-95-64-03-05A-550B-A / 00855). No further action is required.</p> <p>7. When torque has exceeded 100% for more than 3 seconds but has not exceeded 105% perform a thorough visual inspection of the following components. If inspection does not reveal any discrepancies or obvious damage, components may be retained in service. Clear the ADIU NVM exceedance (412-A-95-64-03-05A-550A-A / 00854 and 412-A-95-64-03-05A-550B-A / 00855).</p> <p>7.1. Tail rotor blades</p> <p>7.2. Main rotor hub</p> <p>7.3. Tail rotor hub</p> <p>7.4. Intermediate gearbox. Check gearbox for security and torque check retaining bolts.</p> <p>7.5. Tail rotor gearbox. Check gearbox for security and torque check retaining nuts.</p> <p>7.6. Tail rotor driveshafts</p> <p>7.7. Tail rotor driveshaft hangers</p> <p>7.8. Swashplate</p> <p>7.9. Hub and sleeve assembly</p> <p>7.10. Main driveshaft</p> <p>7.11. Mast</p> <p>7.12. Transmission.</p> <p>8. When overtorque exceeds 105%, but does not exceed 111%, do as follows:</p> <p>8.1. Perform thorough visual inspection of components listed in step 7.</p> <p>8.2. Inspect main transmission chip detectors and full flow debris monitor.</p> <p>8.2.1. If metal particles are found, indicating internal failure, remove transmission for overhaul evaluation. Make an entry in the component record explaining reason for removal was overtorque. Remove all transmission system oil lines. Flush and reinstall oil lines. Replace external oil filter element. Remove and scrap oil cooler. Install new oil cooler.</p>		
<p>BHT-412-MM, Chapter 62</p>			

Table 1. AFTER OVERTORQUE (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<p>BHT-412-CR&amp;O</p>	<p>8.2.2. If chip detectors and full flow debris monitor appear normal and there is no evidence of internal failure, return helicopter to service. Operate normally for 3 to 10 hours and then check chip detectors and full flow debris monitor. If no metal particles are found, normal scheduled inspection intervals may then be followed. If metal particles are present prior to or at the 3 to 10-hour check or if there is any evidence of internal failure, remove transmission for overhaul evaluation. Make an entry in the component record explaining reason for removal was overtorque. Remove all transmission system oil lines. Flush and reinstall oil lines. Replace external oil filter element. Remove and scrap oil cooler. Install new oil cooler.</p> <p>8.3. Clear the ADIU NVM exceedance (<a href="#">412-A-95-64-03-05A-550A-A / 00854</a> and <a href="#">412-A-95-64-03-05A-550B-A / 00855</a>).</p> <p>9. When overtorque has exceeded 111%:</p> <p style="text-align: center;"><b>NOTE</b></p> <p>If overhaul evaluation is specified, complete both the conditional inspection and normal inspection procedures (as applicable) for that component listed in <a href="#">BHT-412-CR&amp;O</a>.</p>		
	<p>9.1. Return the following components to an overhaul facility for overhaul evaluation.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Component removal record of dynamic components shall reflect overtorque as reason for removal.</p> <p>9.1.1. Transmission                      9.1.2. Main driveshaft                      9.1.3. Main rotor hub                      9.1.4. Mast</p> <p>9.2. Perform thorough visual inspection of other components outlined in step 7.</p> <p>9.3. Clear the ADIU NVM exceedance (<a href="#">412-A-95-64-03-05A-550A-A / 00854</a> and <a href="#">412-A-95-64-03-05A-550B-A / 00855</a>).</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Steps 10 to 13 are applicable for airspeeds above 105 Knots with a mast torque (Qm) indication above 81%. These conditions will only display a XMSN OVERTRQ CAS message for a mast torque (Qm) indication above 100%. There will be no XMSN OVERTRQ CAS message for a mast torque indication between 81% and 100%.</p> <p>10. With an airspeed greater than 105 Knots if mast torque has exceeded 81% for 3 seconds or less but has not exceeded 84%, no action is required.</p> <p>11. With an airspeed greater than 105 Knots if mast torque has exceeded 81% for more than 3 seconds but has not exceeded 84% perform a thorough visual inspection of the following components. If inspection does not reveal any discrepancies or obvious damage, components may be retained in service.</p> <p>11.1. Main rotor hub</p>		
<p>BHT-412-MM, Chapter 62</p> <p><a href="#">412-A-63-00-00-00A-009A-A / 00467</a></p> <p>BHT-412-MM, Chapter 64</p>			

Table 1. AFTER OVERTORQUE (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
<p>412-A-63-00-00-00A-009A-A / 00467</p>	<p>11.2. Main driveshaft 11.3. Mast 11.4. Transmission 11.5. Tail rotor blades 11.6. Tail rotor hub 11.7. Swashplate 11.8. Hub and sleeve assembly.</p> <p>12. With an airspeed greater than 105 Knots if mast torque has exceeded 84% but has not exceeded 100% for more than 3 seconds or 103%, do as follows:</p> <p>12.1. Perform thorough visual inspection of components listed in step 11.</p> <p>12.2. Inspect main transmission chip detectors and full flow debris monitor.</p> <p>12.2.1. If metal particles are found, refer to <a href="#">BHT-412-MM, Chapter 63</a> and <a href="#">BHT-412-MM, Chapter 63</a> for oil contamination procedures.</p> <p>12.2.2. If chip detectors and full flow debris monitor appear normal and there is no evidence of internal failure, return helicopter to service. Operate normally for 3 to 10 hours and then check chip detectors and full flow debris monitor. If no metal particles are found, normal scheduled inspection intervals may then be followed. If metal particles are present prior to or at the 3 to 10-hour check, refer to <a href="#">BHT-412-MM, Chapter 63</a> and <a href="#">BHT-412-MM, Chapter 63</a> for oil contamination procedures.</p> <p>13. With an airspeed greater than 105 Knots if mast torque has exceeded 100% for more than 3 seconds or 103%, do as follows:</p> <p style="text-align: center;"><b>NOTE</b></p> <p>If overhaul evaluation is specified, complete both the conditional inspection and normal inspection procedures (as applicable) for that component listed in <a href="#">BHT-412-CR&amp;O</a>.</p>		
<p>BHT-412-CR&amp;O</p>	<p>13.1. Return the following components to an overhaul facility for overhaul evaluation.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Component removal record of dynamic components shall reflect overtorque as reason for removal.</p> <p>13.1.1. Transmission 13.1.2. Main driveshaft 13.1.3. Main rotor hub 13.1.4. Mast.</p> <p>13.2. Clear the ADIU NVM exceedance (<a href="#">412-A-95-64-03-05A-550A-A / 00854</a> and <a href="#">412-A-95-64-03-05A-550B-A / 00855</a>).</p> <p>13.3. Perform a thorough visual inspection of the following components.</p> <p>13.3.1. Tail rotor blades 13.3.2. Tail rotor hub 13.3.3. Intermediate gearbox. Check gearbox for security and torque check retaining bolts</p>		

Table 1. AFTER OVERTORQUE (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
	13.3.4. Tail rotor gearbox. Check gearbox for security and torque check retaining nuts 13.3.5. Tail rotor driveshafts 13.3.6. Tail rotor driveshaft hangers 13.3.7. Swashplate 13.3.8. Hub and sleeve assembly.		

## Conditional Inspections - 5-Minute Takeoff Power Range Time Exceedance Procedure

Table 1. 5-MINUTE TAKEOFF POWER RANGE TIME EXCEEDANCE

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
	DATE: _____ W.O. _____ FACILITY: _____ HELICOPTER S/N: _____ REGISTRY NO.: _____ TOTAL TIME: _____ SIGNATURE: _____  <p style="text-align: center;"><b>NOTE</b></p> Accomplish after time in the Takeoff Power range has exceeded the 5-minutes (300 seconds) limit. This conditional inspection is only applicable for airspeeds below 105 Knots. For airspeeds greater than 105 Knots and a mast torque (Qm) indication greater than 81%, refer to the After Over-torque Conditional Inspection ( <a href="#">412-A-05-50-00-08A-284A-A / 00034</a> ). The duration shown on the DU exceedance page will be the total time in the takeoff power range, the allowable 300 seconds (5 minutes) plus the exceedance time in seconds.  <u><b>5-MINUTE TAKEOFF POWER RANGE TIME EXCEEDANCE</b></u> 1. If the takeoff power event has exceeded the 300 seconds (5-minutes) limit but has not exceeded 450 seconds total time accomplish the following: 1.1. Access the DU exceedance page ( <a href="#">412-A-95-64-02-27A-042A-A / 00793</a> ). 1.2. Record the transmission (mast) torque exceedance date, UTC time, duration, and peak value in the helicopter historical records. 1.3. Refer to Pratt & Whitney Canada PT6T-9 Engine Maintenance Manual for required action. 2. If the takeoff power event has exceeded the 300 seconds (5-minutes) limit and has exceeded 450 seconds total time accomplish the following: 2.1. Access the DU exceedance page ( <a href="#">412-A-95-64-02-27A-042A-A / 00793</a> ). 2.2. Record the transmission (mast) torque exceedance date, UTC time, duration, and peak value in the helicopter historical records. 2.3. Perform a thorough visual inspection of the following components. If inspection does not reveal any discrepancies or obvious damage, components may be retained in service. 2.3.1. Main rotor hub 2.3.2. Main driveshaft 2.3.3. Mast assembly 2.3.4. Swashplate and support assembly 2.3.5. Hub and sleeve assembly 2.3.6. Tailboom attachment hardware		

Table 1. 5-MINUTE TAKEOFF POWER RANGE TIME EXCEEDANCE (continued)

DATA REFERENCE	INSPECTION TASK DESCRIPTION	INITIAL	
		MECH	OTHER
	2.3.7. Tail rotor hub and blade assembly. 2.4. Refer to Pratt & Whitney Canada PT6T-9 Engine Maintenance Manual for required action.		



## Component Overhaul Schedule - Inspection Procedure

### NOTE

Refer to the Pratt & Whitney Canada PT6T-9 Maintenance Manual, 3053182 for component overhaul schedules that apply specifically to the engine and related components.

1. The Component Overhaul Schedule ([Table 1](#)) provides the time interval between overhaul for each applicable helicopter component particular to the 412EPX. For all other components, refer to the [BHT-412-MM, Chapter 5](#).

**Table 1. Component Overhaul Schedule**

NOMENCLATURE	PART NUMBER (1)	OVERHAUL INTERVAL (HOURS)
<b>POWER TRAIN</b>		
Transmission Assembly	412-040-008-101	(2) 3000 hours
Mast Assembly	412-040-368-101	(5) (6) 6000 hours
<b>ROTORS</b>		
Main Rotor Hub Assembly	412-010-502-101	(4)

### NOTES:

- 1 Operating time specified for overhaul of any given part number in this schedule applies to all successive dash numbers or suffixes, unless otherwise specified.
- 2 All transmission quills, with the exception of rotor brake quill, shall be overhauled at time of transmission overhaul.
- 3 *D E L E T E D*
- 4 On-condition. Special inspection required each 2500 hours ([BHT-412-MM, Chapter 5](#)).
- 5 For each hoist operation performed within penalty CG region, four additional flight hours must be logged against main rotor mast, yoke, and lower cone seat. Refer to [BHT-412-MM, Chapter 4](#) for penalty region chart.
- 6 Visually inspect ([BHT-412-CR&O, Chapter 63](#)) tube assembly 412-040-510-103 at mast assembly overhaul.

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