NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

November 8, 2022

Group Chairman's Factual

Maintenance Records

ANC22FA041

A. ACCIDENT

Location: Kalea, Hawaii
Date: June 8, 2022
Time: 17:26 Hawaii Standard Time
Helicopter: Bell BHT-407 N402SH

B. MAINTENANCE RECORDS

Group Chairman Gregory Borsari
NTSB
Washington, DC

Group Member Lauren Douglas
K & S Helicopters
Kona, HI

Group Member David Keenen
Federal Aviation Administration
Washington, DC

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C. Summary

On June 8, 2022, about 1726 Hawaii-Aleutian standard time, a Bell 407 helicopter, N402SH, was destroyed when it was involved in an accident near Kalea, Hawaii. The pilot and two passengers sustained serious injuries, and three passengers sustained minor injuries. The helicopter was being operated as a Title 14 *Code of Federal Regulations* Part 135 on-demand air tour flight.

D. Details of the Investigation

1.0 Air Carrier Certificate

On November 3, 1999, Federal Aviation Administration (FAA), Honolulu Flight Standards District Office (FSDO), issued an Air Carrier Certificate Number K2DA320J to K & S Helicopters, Inc. PO Box 5371 Kailua-Kona, Hawaii.

2.0 Operations Specifications (OpSpecs)[1]

K&S Helicopters Inc. has a part 135 Certificate, which includes the standards, terms, conditions, and limitations contained in the FAA approved Operations Specifications (Parts A and D):

(a) Section A001 Air carrier was authorized as a 14 CFR Part 135 operation, nine seats or less.

(b) Section D085 of the OpSpecs, has 10 aircraft in the fleet. Five Bell 407, one Bell 430, two Hughes MD-369-D and two Hughes MD-369-E.

(c) Section D102 of the OpSpecs authorized K & S Helicopters to use the following additional Maintenance Requirements for the Bell 407 Rotorcraft:

Engine: The installed engine, to include turbosuperchargers, appurtenances and accessories necessary for its functioning shall be maintained in accordance with the maintenance documents. The engine shall be overhauled on or before the following time in-service.

Rotorcraft Type	Make and Model	Maintenance Document	Time in Service Interval
Bell	BHT-407	Rolls Royce CSP21001	2,000 Hours

Rotor: Each installed main and auxiliary rotor shall be maintained in accordance with the manufacture's maintenance document.

Rotorcraft Type	Rotor Main and Auxiliary Maintenance Document
Bell BHT-407	BHT-407-MM1

(d) Section D104 of the OpSpecs authorized K & S Helicopters to use Pyrotechnic Flare Gun, Fire Extinguishers, Halon and Life vest emergency equipment in its 14 CFR Part 135 nine seats or less

[1] Operations Specifications contains the authorizations, limitations, and certain procedures under which each kind of operation, if applicable, is to be conducted by the certificate holder.

operations, provided the applicable aircraft have met the additional maintenance requirements of Section 135.421[2].

3.0 Type Certificate Data Sheet

The Type Certificate Data Sheet (H2SW) prescribes conditions and limitations under which the product for which the Type Certificate (TC) was issued meets the airworthiness requirements of the Federal Aviation Regulations. According to the document, Bell Textron Canada Limited is the holder of the TC.

4.0 Helicopter Information

Bell Textron Canada Limited (formerly Bell Helicopters) manufactured the helicopter in 1997, serial number 53118. K & S, Inc. was the registered owner of the helicopter. The helicopter had 23,005.6 total flight hours with 30,490 total flight cycles as of June 6, 2022 (logbook sheet dated June 6, 2022).

K&S Helicopters was authorized to perform lift operations. Total airframe hook time as of June 6, 2022, was 713.9 hours. Maximum load authorized is 2,300 pounds combined belly and cargo.

The helicopter was equipped with a Rolls Royce Model 250-C47B engines. The engine had accumulated the following operating times at the time of the accident:

Engine Manufacturer	Rolls Royce
Model Number	250-C47B
Manufacture Date	June 26, 2001
Date Installed	October 12, 2021
Serial Number	CAE-847553
Time Since Overhaul (Compressor hours)	1,342.0
Total Cycles Since Overhaul (Compressor cycles)	1,206
Time Since Overhaul (Turbine hours)	512.0
Engine Total Time Hours	11,111.4
Engine Total Cycles	11,641
Location of Engine Installation	Kona Airport Maintenance Facility
Total Time of Helicopter at engine installation (hours)	22,120.1

[2] Each certificate holder who operates an aircraft type certificated for a passenger seating configuration, excluding any pilot seat, of nine seats or less, must comply with the manufacturer's recommended maintenance programs, or a program approved by the Administrator, for each aircraft engine, propeller, rotor, and each item of emergency equipment required by this chapter.

5.0 Maintenance Inspection Program

K&S Helicopters was authorized to use the manufacturers progressive maintenance inspection program to maintain the helicopter. The Airframe Progressive Inspection Program consisted of the following.

There were six, 50-hour Events for the Airframe Progressive Inspection which also included a 50-hour lubrication. After Event Number 6 was completed, the cycle began again with Event Number 1. Additionally, Inspection Program required the operator at a minimum complete one cycle (all six events) within a 12-month calendar period. If any of the six events (full cycle) were not completed within a 12-month period, the remaining events must be completed prior to operating the helicopter. The following scheduled inspections shall be performed at their specified intervals:

- 300-hour inspection for optional equipment.
- 600-hour inspection.
- 600 hour or 12-month inspection every 600 hours or 12 calendar months, whichever comes first.
- 1 month inspection.
- 12-month inspection every 12 calendar months.
- 24-month inspection every 24 calendar months.
- 1200-hour inspection.
- 1200 hour or 24-month inspection every 1200 hours or 24 calendar months, whichever comes first.
- 2500-hour inspection.

The following table lists each of the most recent inspection by event type, date of inspection, and flight hours.

Inspection	Date	Flight Hours
No.1 50 Hour Event	May 15, 2022	22,940.8
No.2 50 Hour Event	May 29, 2022	22,979.9
No.3 50 Hour Event	March 29, 2022	22,762.5
No.4 50 Hour Event	April 11, 2022	22,820.1
No.5 50 Hour Event	April 23, 2022	22,862.1
No.6[3] 50 Hour Event	May 4, 2022	22,891.4
300 Hour Equipment Inspection	May 4, 2022	22,891.4
600 Hour Inspection	Feb 23, 2022	22,629.0
600 Hour or 12 Month Inspection	May 4, 2022	22,891.4

[3] No.6 50-hour inspection includes the torque check of the tailboom attach bolts.

Inspection	Date	Flight Hours
1 Month Inspection Fire Extinguisher	June 1, 2022	Unknown
12 Month Inspection	March 2, 2021	21,448.7
24 Month Inspection	June 21, 2021	21,695.3
1200 Hour or 24 Month Inspection	August 21, 2021	21,930.3
2500 Hour Inspection	December 6, 2019	21,196.2

6.0 Tailboom Maintenance.

According to the records a new tailboom was installed August 23, 2009. Airframe total time was 5,780.0 hours. Part number 407-030-801-205D, serial number BP-1598 was installed. The tailboom was last removed and reinstalled July 3, 2014, to facilitate longeron and frame repairs at fuselage stations 167.33, 179.66 and 192.00. See section 11.0.

Per the maintenance manual, when installing the tailboom, the tailboom attaching bolts and mating nuts must be discarded and replaced with new hardware each time the tailboom is installed. According to Textron, the requirement to replace the tailboom attaching bolts and mating nuts was added to the Maintenance Manual at revision 27 dated February 26, 2010.

The most recent 300-hour task to perform a torque check of the attaching fasteners was accomplished at K&S Kona, Hawaii on May 4, 2022, per task number DMC-407-A-53-01-00-00A-720A at an airframe total time of 22,891.4 hours.

The number six 50-hour inspection includes the inspection of the upper longeron for cracks, corrosion, loose or sheared rivets. Additionally, the inspection also included an examination for condition and security of the tailboom attachment fittings on the fuselage and on the tailboom, paying particular attention to the upper left-hand fitting. If required, it was recommended to remove the sealant around the fasteners of the aft fuselage attachment fittings and to reapply sealant to the attachment fittings once the inspections were completed.

7.0 Logbook Review

Logbook items were reviewed starting from January 1, 2022. The following logbook items are noted.

Date	Defect	Corrective Action
1/1/2022	Red PC link bearing worn.	Replaced Red PC link bearing with new.

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Date	Defect	Corrective Action
1/22/2022	Boost pump light illuminate in flight.	Replaced LH boost pump PN 1C27-10 IAW BHT 407 MM.
1/27/2022	Servo Leaking.	Replaced RH forward servo PN 206-076-062-127 SN HR252 and replaced with same PN. SN HR1101.
2/7/2022	Anti-collision light inop.	Found broken wire. Repaired and ops checked okay.
2/14/2022	T/R hub feathering bearing has play.	Removed TR hub PN 407-012-101-113 SN HB 629. Removed TR blades PN 406-016-100-119, SN A-1429. SN A-2220 and installed new TR hub SN APCS-16439 TSN 0.0. Installed serviceable TR blades PN 406-016-100-119 SN A4897, SNA-4771.
2/14/2022	T/R balance check required for replacement of TR hub and blade assembly.	Installed micro vibe II equipment and verified balance was within limits.
2/14/2022	Operational control flight (OCF) required for replacement of TR hub / blade assembly.	OCF completed. Full T/R authority checked with quick stop, max power takeoff, auto rotations, turns and slides.
2/15/2022	TR mast nut retorque due.	Accomplished mast nut retorque. Found stable. No further action required.
2/18/2022	Aircraft will not start.	Replaced ignition exciter box with new.
3/14/2022	Left fuel XFR light inop during normal operation.	Repaired wiring for left fuel XFR light. Checked good.
3/18/2022	Left fuel boost pump / XFR light intermittent in flight.	Installed serviceable fuel boost pump. Replaced boost pump switch with new. Ops checked good.
3/19/2022	Left transfer pump light stays on. Pump appears to be working.	Found broken wire @ pressure switch. Repaired wire IAW Bell 407 mm chapter 96. Ops checked good.
3/23/2022	Left boost pump light came on during flight.	R&R LH boost pump PN 1C27-10. Repaired fuel system wiring. Op checked good.
4/21/2022	Aircraft battery will not hold charge.	Aircraft battery replaced. SN 41166191 IAW AMM.
5/4/2022	ASB 407-21-123 Tailboom 100-hour inspection due to inspect the left side of the tailboom skins and lower left closure plate for signs of cracks or loose rivets.	Complied with part II of ASB 407-21-123 by visual inspection of the tailboom for cracks and loose hardware. No defects noted.

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Date	Defect	Corrective Action
5/4/2022	ASB 407-21-122 M/R pitch link insert inspection due.	Complied with ASB, part II inspection of M/R pitch link assembly inserts for debonding and reapplied torque stripe. No defects noted.
5/4/2022	AD 2012-18-09 Re-torque of tailboom attach nuts due.	Completed Re-torque of tailboom attach nuts IAW AD2012-18-09.
5/16/2022	Broken coupling at FWD drive shaft.	Replaced with serviceable coupling PN 407-340-340-103 IAW B407 AMM chapter 65.
5/18/2022	During flight FADEC light illuminated.	Dual PLA position error from training flight. Cleared FADEC fault and returned aircraft to service.
5/20/2022	FADEC Auto/Manual button will not illuminate "Auto".	Replaced 2 each light bulbs.
5/20/2022	After 30 minutes of flight at 10 FT AGL and 35 kts.	Replaced PLA transducer.
5/23/2022	Main rotor blades need refurbishing.	Removed and replaced main rotor blades.
5/25/2022	FADEC degrade light illuminated.	PLA faults recorded. Removed faulty HMU and installed serviceable HMU PN 114070-04A5, SN J6AMU0015. Ground run and leak checked okay.
5/29/2022	Broken Disc Pack @ Forward Shaft.	Removed broken disc pack PN 407-340-340-103 and replaced with new IAW AMM Chapter 65. Ground run performed.
5/31/2022	Anti-Collision light Inop.	Found wiring to the anti-collision light not conforming to standard practices. Removed vertical fin. Removed tip cap. Installed conduit thru the vertical stab. Rewired the anti-collision light using new shielded wire. Reinstalled vertical fin and operational checked lights.
6/4/2022	TRGB cowling door fastener not secured.	Secured TRGB cowling door Dzus fastener with new grommet.

8.0 Airworthiness Directives (AD)[4] and Service Bulletins

Airworthiness directives and service bulletins were reviewed. The review focused on the tailboom and tailboom attach fittings. The following are noted.

- SB 407-21-123 Inspection of the tailboom assembly and closure plate on the left side for cracking and loose fasteners. Last complied with May 2, 2022. No findings.

[4] Airworthiness Directive (AD) is a regulatory notice sent out by the FAA informing the operator of an action that must be taken for the aircraft to maintain its airworthiness status.

- AD 2012-18-09 Replace tailboom attaching hardware in accordance with SB 407-10-93. Recheck the torque of the attaching hardware every 300 hours. Last retorque complied with May 4, 2022. Initial replacement of the attaching bolts complied with July 21, 2014.

- AD 2013-12-07 External inspection of the tailboom assembly for cracks, loose rivets, or other damage in specific areas depicted. The task is required prior to the first flight of the day to visually check for cracks, loose rivets, or other damage. This inspection can be conducted by a certificated pilot incorporated in the preflight inspection. Last complied with June 8, 2022. The inspection is also included in the Event 4 Scheduled Inspection. Last Event 4 completed April 11, 2022. No findings.

- AD 2015-05-04 Visual Inspection of the aft fuselage upper skin and longerons for cracks. Last complied with May 29, 2022. No findings.

- AD 2018-10-06 Inspection of the tail rotor driveshaft segment assemblies in accordance with SB 407-16-113. Last complied with May 4, 2022. No findings.

9.0 Weight and Balance Summary

The helicopter was weighed anytime it was either painted or a major change in the weight had occurred, such as a modification. The helicopter was last weighed on December 17, 2016. Note: Empty fuel, with engine oil, main gearbox oil, tail rotor gearbox all full.

Longitudinal Weight:	3,019.1 lbs	
Longitudinal Arm:	130.3 inches	Arm: -1.43 inches
Longitudinal Moment:	393,494.7 lb-inches	Moment: -2,152.96 inches

The helicopter weight and balance last recalculated July 27, 2019, after an avionics upgrade. See next page.

Longitudinal Weight:	3,072.0 lbs	
Longitudinal Arm:	132.0 inches	Arm: -0.71 inches
Longitudinal Moment:	405,405.5 lb-inches	Moment: -2,167.0 inches

10.0 Service Difficulty Reports (SDR)[5]

The Maintenance Records Group reviewed the SDR for the accident helicopter back to 2018. There was one SDR, dated November 11, 2021, when the helicopter performed a precautionary landing due to an engine oil pressure indication of zero. Maintenance replaced the engine oil pressure transducer.

11.0 Major Repairs

The maintenance records group reviewed the major repairs on file with the FAA. The following major repair was noted.

December 2, 2014 – This is a correction to the major repair submitted May 29, 2014. Repaired damaged frames at STA. 167.33 by splicing in new frame section from LBL 7.75 to LBL 23.0. Fabricated upper splice repair from 7075T6 0.032". Repaired damage at STA. 179.66 by fabricating repair clip and shim. Repaired damage at STA. 192.00 by fabricating a doubler for ground side of frame and a repair doubler for the aft side of frame. Removed LH aft fuselage skin to gain access to the LH engine pan longeron and installed new customer supplied longeron and reinstalled LH aft skin.

Details for the work order (No.1105) associated with the major repair were reviewed and the following was noted. Reference technical bulletin 407-12-96 Rev A dated February 14, 2012. Replaced damage skin P/N 206-033-003-161 and LH and RH retainer's P/N 407-030-740-116S and 407-030-740-115S with new customer supplied parts. Removed and installed referencing TB 407-12-96 dated February 14, 2012, and BHT-ALL- SRMM 3-3-1.

Removed left hand aft fuselage skin to gain access to the left-hand engine pan longeron P/N 206-031-314-173. Removed cracked left hand engine pan longeron P/N 206-031-314-173 and installed new longeron and reinstalled L/H aft fuselage skin, reference BHT-206-SRM-1 section 6 application 6-2-6. Determined to be major repair.

Repaired damaged frames at STA 167.33, 179.66 and 192.00 LBL 13.00. Determined to be a major repair.

[5] As required under 14 CFR 135.415, each scheduled operator is to report the occurrence or detection of each failure, malfunction or defect concerning (a) fires during flight, (b) false fire warning during flight, (c) engine exhaust system that causes damage during flight, (e) an aircraft component that causes accumulation or circulation of smoke, vapor, or toxic or noxious fumes during flight, (f) engine shutdown during flight, (g) a propeller feathering, (h) aircraft structure requiring major repairs, (i) cracks, corrosion, (j) other safety critical issues as stated in the CFR. These occurrences must be reported within 96 hours of the event.

Repaired damaged frame at STA 167.33 (P/N 206-032-303-129) by splicing in new frame section from LBL 7.75 to LBL 23.0. Fabricated upper splice repair from 7075T6.032. Referencing BHT-ALL-SRM 3-6-3. Fabricated repair doubler from 7075T6.032. Fabricated lower splice from new frame segments and 7075T6.032 referencing BHT-206-SRM 5.2.4. Treated and primed all repair parts referencing BHT-ALL-SPM 3-16.

Repaired damaged frame at STA 179.66 by fabricating repair clip and shim from 7075T6.032 P.O.10256 increasing the dimensions of the clip to add fasteners around damage, repair clip replaces P/N 206-032-304-007 clip. Fabricated repair doubler from 7075T6.032 P.O.10256 to repair damage to doubler P/N 206-032-304-029 referencing BHT-ALL-SRM 3-6-3 application C. Treated and primed all repair parts referencing BHT-ALL-SPM 3-16.

Repaired damaged frame at STA 192.00 by fabricating a doubler from 2024T3.040 P.O.12839 for the forward side of the frame and a doubler for the aft side of frame from customer supplied 2024T3.032 referencing BHT-ALL-SRM 3-5-4. Fabricated replacement clips from 2024T3.040 P.O. 12839 P/N PH206-032-305-161, -162 and reinstalled. Treated and primed all repair parts referencing BHT-ALL-SPM 3-16.

12.0 Supplemental Type Certificates (STC)[6] and Major Alterations

The major alterations and STCs on file with the FAA were reviewed. There were 16 major alterations incorporated since the date of manufacture. None of the major alterations affected the tailboom structure. The following major alterations are noted.

March 31, 1998 – Installation of Cargo Hook Suspension System, STC No. SR00418SE in accordance with Onboard Systems International installation manual and Bell model 407 installation instructions for Cargo Hook Kit BHT-407-II-5. Total airframe hook time as of June 8, 2022, was 713.9 hours. Maximum load authorized was 2,300 pounds combined belly and cargo.

October 30, 2015 – Installed Plus Power Kit, STC No. SR09531RC Improved Hover Performance in accordance with BHTI drawing 407-709-001.

13.0 Time Limit Components

The maintenance group reviewed the Time Limit Component reports for the airframe, engine and rotor components installed on the helicopter.

[6] The FAA issues Supplement Type Certificates, which authorize a major change or alteration to an aircraft, engine or component that has been built under an approved Type Certificate.

Components were tracked by the manufacturer part number and serial number, flight hours, flight cycles, calendar date or any combination of flight hours, flight cycles and date.

As part of the review process attention focused on the tail boom and tail boom attach points and structure. The tailboom assembly was an on-condition part and was tracked by the operator. Time since install was 5,780 hours. Total time of the tailboom was 17,229.9.

14.0 Vendors

K&S Helicopters was authorized to utilize vendors to perform maintenance in accordance with 14CFR135.437. Vendors were audited periodically per 135. Vendor audits were reviewed (sampling of audits). No discrepancies noted.

15.0 Method of Record Keeping

Per CFR Parts 43, 91 and 135, records were maintained for the helicopter, engines and components with the use of logbooks and component tracking spreadsheets with formulas and daily data entry that tracks hours, days and landings. Included were the time remaining for each inspection due and/or life limited component time remaining by days, cycles and/or flight hours.

According to the DOM historical maintenance records were kept for the life of the helicopter and were not discarded even though the maintenance work has been previously superseded.

16.0 Manuals

K&S Helicopters utilized the following manuals to maintain and ensure the airworthiness of its aircraft:

(a) Original equipment manufacturers maintenance manuals.

(b) Maintenance Training Manual - Training Program used by K&S Helicopters for all maintenance personnel with regards to company and technical maintenance process and procedures.

(c) Approved Vendor List – The list provided a list of vendors allowed to provide maintenance and services to K&S Helicopters

(d) General Operations Manual - This manual provided company personnel with a single source of policy that would guide and assist them in performing duties pertaining to the operation of K&S helicopters.

(e) Manufacturer Manuals –Textron and Rolls Royce Manuals.

17.0 Maintenance Operations

K&S Helicopters is located at 73-341U Street, Kailua-Kona, HI 96740. The facility has all the manuals, components, tooling, and equipment to maintain the fleet. K&S Helicopters employed seven Airframe and Powerplant Certificated Mechanics with one having an Inspection Authorization Certificate. Maintenance Operations are conducted at the facility seven days a week.

According to the Director of Maintenance, all routine and non-routine inspections were accomplished at the facility.

Further, a Safety Management System program, International Standard for Business Aircraft Operations (ISBAO) is utilized for its maintenance operations.

18.0 Record of Conversation

On June 16, 2022, beginning at about 09:20 HST Arian Fazel, an Aviation Maintenance Technician that performed the most recent tailboom attachment retorque check, agreed to talk with the NTSB maintenance group members and to have the conversation recorded. The following notes are a summary of the conversation.

When asked if he had any certificates, Mr. Fazel stated he has an A&P[7] and that he got his A&P about four years ago. When asked to provide information on his aviation career and his maintenance experience. Mr. Fazel stated when he got out of high school, he joined the Coast Guard and when he came back, he wanted to get into aviation. He moved to California and went to Spartan. He got his Airframe there and then transferred over to Honolulu Community College and got his Powerplant there. He stated he moved back home and met Lauren (DOM) and she hired me, and he has been working here since. That was around the end of 2017. Asked about any training specifically for the Bell 407 he stated nothing specific. He stated K&S Helicopters was the only helicopter company he worked for since leaving the Coast Guard.

When Covid started coming in K&S Helicopters had to let him go as nobody was flying so he worked for a local cargo company for little while in 2020 which lasted eight to nine months. He was stuck on nights and didn't like the shift. And it was a little bit different then he thought it would be working on those aircraft. He was doing the paperwork and for them and didn't really like it. He called Cal and Lauren, and they welcomed him back. He said it was November or December 2020 when he went

[7] FAA Airframe and Powerplant maintenance certificate.

back to K&S Helicopters. He said it was about an eight-month period from the time he left and then came back.

Asked if the maintenance was performed at the K&S Helicopters facility, he said yes. Asked about any on the job injuries Mr. Fazel said nothing that required medical attention.

Asked If he needed help, who would he turn to? He stated if I needed help with something I've done before or didn't feel comfortable doing he would go to Lauren.

Asked what manuals he has access to in order to maintain the helicopters, he said the online Bell 407 manuals. He said he has access to Bell 429 manuals as well. Not really working on that much. Asked if the manuals were user friendly? He said, in his opinion the old manuals were more user friendly. The newer ones are a little more difficult to navigate, but definitely useable.

Asked about the method of record keeping if it was electronic or paper. He said, it was on paper.

Mr. Fazel was asked if he got involved in Airworthiness Directives, he said we comply with them. Lauren would come out and inform us of the AD, get us the paperwork and we'd perform the work. Asked when the work gets assigned if he understands it was AD driven rather than just a routine task he responded yes.

When asked if any special tooling was needed to maintain the 407 that is not available here? Mr. Fazel said not to his knowledge. What about tooling calibration requirements? Such as a torque wrench that had to be periodically checked. He stated he believed the torque wrenches are annual, but we calibrate everything as far as he knew. Asked for example if he used a torque wrench and assuming it is a company torque wrench how did he know it has been calibrated? There is a sticker and a record kept in the parts office.

When asked when was the last time he worked on the accident helicopter? He stated that morning. Turbine change. We installed the turbine. Any issues that morning from the pilot? No, nothing.

When asked, based on his overall experience how good of a condition was the helicopter in? He stated it was a high hour aircraft, but there was nothing that he saw that he felt was unairworthy.

Asked if he performed the tailboom attach bolt tasks such as the retorque. He did not do any replacements, just the retorques. Asked if he could through what you do? He said, honestly, he doesn't memorize anything, so he utilizes the manual which

walks you through step by step. Just followed the procedures. Asked if it is a difficult task to do, he responded that it was not difficult.

Asked about applying the run-on torque value to the bolt torque he said that is when you replace or install the tailboom which he has never done. He stated he never did anything with the tailboom other than the torque check. Asked if he ever had to replace a bolt, he said no.

When asked if he understood what the procedure was, he replied yes.

Asked on the day of the accident was he working by himself or with somebody? He said, he believed he had it for two days and he believed he worked on it by himself on Sunday. On Monday for the most part, he was working it alone.

Asked what his normal hours he worked during the day. Did he get eight hours of sleep at night, give or take. He stated, yes. Asked if anything happening outside of work that would affect your level of concentration? Other than this event, he said no.

Asked if the FAA ever come around when he's been working the helicopter? He said no. He knows they have been in the facility here, but he never personally has spoken to the FAA.

Asked if he typically did maintenance on his own or with other mechanics? He stated usually with Cody or Lauren. You said you had the helicopter for two days, Sunday and Monday. Does that mean the helicopter was down for two days? Or going somewhere else? He stated it was scheduled at the facility for two days. We had it here for two days for maintenance.

Asked if recalled what other maintenance was accomplished that morning that might have been done? He said he didn't recall.

With the tailboom fastener hardware retorque inspection, he was asked to guess how many times he had done that in the past? He said, many times since he started. He was taught by other mechanics that he trust and is still in contact with. Other mechanics gave him some on-the-job training. Many times, he couldn't tell how many. More than five, six, seven, eight times.

Asked if he had any anomalous findings with the inspection in the past? He said no. Asked so they've always been good, never found any issues? He stated correct. Asked if had any trouble with the procedure for the retorque with how it was written? Where he had to do something a little differently? Or use a different tool? He said, no.

Asked when he did the retorque inspection did he have a second set of eyes that watch him do it, or did he do it by himself? It's the kind of procedure where he had somebody take a look in there to make sure nothing was left in there or anything else out of place. He stated he didn't recall anything being wrong. That was just procedures, so that is what we do.

Asked besides the crack observed on the exemplar helicopter earlier this morning has he found cracks anywhere else on the tailboom before on a 407? Mr. Fazel stated he had seen repairs before on the 402 and the aircraft that went down, he'd seen that it was repaired in the past.

Asked If he found a crack or a discrepancy could he describe the normal process on how it gets reported? He said, first he would notify Lauren, write it up in the book and take it from there. Take the aircraft out of service.

Asked for that retorque inspection could he provide details on how you set up for the procedures? He stated he made sure he had all the material he would need, manuals, proper tools, ladder, everything I needed to do the job.

Asked if he could provide visual details for accessing the area when doing the retorque or any other kind of inspection? He stated, honestly, it is kind of poor visibility, do the best he can do and go about what the maintenance manual was telling him to do. He further stated some of it is hard to see, some points are almost impossible to see, he just poked his head in there with a light and a mirror. That was his opinion on that.

Asked just going back on his past experience with the 407 had he worked on other models? He said, just what we have. He didn't have much experience on the 500s or anything else other than the 407s and what I've done on the 430s. Primarily the 407s.

Asked on average every month how often would he say he'd do this task? He said it all depends on how much we are flying, but he would say maybe once a month, sometimes twice a month.

Asked if had ever removed the tailboom? He responded, never. Asked if he ever helped install one? He said never.

Asked if he knew if the tailboom was removed on any of the 407s to facilitate other maintenance? He stated he didn't know. of anything other than the 402 that had a repair. There might have been another aircraft, but I don't know. I have never seen it being removed.

Asked if he had ever encountered water damage or corrosion in the attachment fitting area? He stated what he saw out there today was the most he'd seen. The one we just looked at earlier.

Asked about earlier observations on the other Bell; like inside condition with some dirt, was it typical? He stated, so, we saw this morning on the other Bell, the condition on the inside, there was some dirt, is that typical? He said he believed so. He added, when we do our inspections, we clean it up first so we can get a good look. Asked if could provide procedures for the cleaning process? What was used? He said, whatever it says to use, and he really didn't know off the top of his head. Whatever the manual says. He added for the most part he wiped to make sure everything was clean so he can see.

Interview concluded about 09:45 HST.

Submitted by:

Gregory Borsari
Maintenance Records