



Maritime Helicopters

CASS

Continued Airworthiness Surveillance System

**March 2020
Meeting minutes**

CASS Meeting

03/26/20	10:00AM	MTF
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MEETING CALLED BY	Isaac Mackey - Fairbanks Lead
TYPE OF MEETING	CASS Meeting
FACILITATOR	Isaac Mackey - Fairbanks Lead
ATTENDEES	Bob Fell, Steve Slade, Dennis Busch, Brent Estep, Mark Hedlund

Agenda Topics

1. Discuss old open action items
2. Review system reliability report trends
3. Review SDR,MIR,MDR reports
4. Review ASR,GOR reports
5. Review CAN's / CAS memos
6. Review tear down reports
7. Review Manufacture bulletins and AD's
8. Review notable items since last CASS meeting
9. Review AOG items
10. Discuss new open action items
11. Discuss recent audit findings
12. Review suggestions for next year's maintenance training
13. Safety Program Effectiveness
14. Other items
15. Schedule next meeting

OLD OPEN ACTION ITEMS	INITIATED BY	RESPONSIBLE PERSON	DEADLINE	CLOSED
N326MH 02/07/19 ACTT 9548.7 Pilot reported beep trim will not stay matched. Maintenance investigated and found both governor Teleflex cables binding. Cables were removed. Parts on order. The 105MM call out for an inspection of this area that is not tracked in the AAIP. Feb 21st CASS meeting moved this to an open item. 05/21/19 items sent to be added to the next revision of the 105 AAIP. July 18th CASS meeting discussed getting the next 105 revision done by third quarter of 2019. 12/18/19 Submitted revision to 105 AAIP on 11/13/19. It now contains a company requirement to ENGINE CONTROLS A0648.25 to perform a Teleflex cable inspection. Dec 31st CASS meeting left this open until the revision is in place. 02/24/2020 BO-105 AAIP Rev 2 approved by the FAA and ready for use. Mar 26th CASS Meeting closed this item.	Isaac Mackey	Steve Slade	09/30/19	Closed

OLD OPEN ACTION ITEMS	INITIATED BY	RESPONSIBLE PERSON	DEADLINE	CLOSED
Mast Bearing Installation (GOR) N315MH 04/25/19 Following 5-41, 1500 Hour mast inspection, aircraft had a chip light. During teardown, it was noted that mast bearing had been installed incorrectly resulting in damage to mast and bearing. During reinstallation of swashplate it was also noted that grease was on top of the outer ring under the mast boot where it did not belong. Further inspection found the seal had broken loose and was rotating and allowing grease to escape. A new mast and bearing was ordered and installed in the aircraft. The damaged mast and bearing were sent for evaluation. Replaced seal in out ring, old seal had broken loose and was rotating. Aircraft was returned to service. Procedural corrections and company retraining to follow. 07/05/19 Refresher training from Jackson required for individuals doing the overhaul of mast assemblies. Training date TBD. July 18th CASS meeting moved this to an open item pending completion of training. 12/31/19 still need to schedule Jackson to do some refresher training on the mast bearing installation. Training TBD Dec 31st CASS meeting left this item open Mar 26th CASS meeting closed this item.	Isaac Mackey	Isaac Mackey / Jackson Cole	TBD	Closed

OLD OPEN ACTION ITEMS	INITIATED BY	RESPONSIBLE PERSON	DEADLINE	CLOSED
N330MH FM Radio issue added by July 18th CASS meeting 07/06/19 ACTT 7071.1 TDFM-136A FM Radio Displays main RF module Fail. Removed TDFM-136A And Replaced with serviceable TDFM-136B IAW Technisonic. Ops check good aircraft returned to service. 07/16/18 Teardown report on TDFM-136A confirmed bad module. Spoke with Radio masters tech about cause, determined to be a weak part of the radio and subject to failure. 07/08/19 ACTT 7085.8 TDFM-136B FM Radio display will not show frequencies on display. Removed and replaced TDFM-136B With serviceable NPX-138D. Ops check good aircraft returned to service. 07/18/19 Waiting on teardown report 07/16/19 ACTT 7099.5 NPX-138D FM radio indicates “module Comm error”. Removed NPX-138D and installed serviceable TDFM-136A. Ops check good aircraft returned to service. (installed same TDFM that was removed 07/06/19) Dec 31st CASS Meeting left this an open item. Mar 26th CASS Meeting left this an open item. Not enough flight time to verify problem	Isaac Mackey		TBD	

OLD OPEN ACTION ITEMS	INITIATED BY	RESPONSIBLE PERSON	DEADLINE	CLOSED
N319MH 10/12/2019 Pilot was flying security and surveillance flight with Alyeska. About ten minutes into flight and 12 NM from MTF, pilot noticed torque gauge fluctuations, engine oil pressure decreasing (all the way to 0 psi) and engine chip light illuminated. Pilot landed immediately in an unimproved area of the Tanana Flats. Pilot had to move the aircraft about thirty feet after first landing due to wet muskeg. Pilot shutdown the aircraft immediately without the two-minute cooldown due to no oil pressure. Pilot called Fairbanks mechanic on standby duty (S. Harper), he texted maintenance lead, base manager and Q&S manager who then coordinated crew retrieval. (end of pilot comments). Bell 407 from Metro was sent out to retrieve customers and personnel began prepping recovery crew. As it was undetermined how long the aircraft was run without lubrication, the decision was made to aerial recover the aircraft with the Bell 412. By 1800 this day, the aircraft was back at Metro and all personnel recovered. Initially, HAZREC was added to the Alyeska IMPACT reporting system, but this was later upgraded to a loss incident due to small amount of oil being released to the earth at the precautionary landing site (to soil) Initial investigation showed that an engine mount retorque had been accomplished, with the engine sump line removed to facilitate this work. The sump line was not properly installed afterwards, and no leak was written up by the mechanic who performed the work. Dec 31st CASS meeting moved this to an open item. Waiting on teardown reports and final cost. 01/20/2020 The engine was ran without oil for over 30 seconds and therefore required removal. All Eng. components were sent to Arrow Aviation to be inspected. N319MH received a serviceable engine from N407RH (Aircraft in yearly at the time) and was returned to service. All the engine components were overhauled and shipped back to Fairbanks. Total overhaul cost was \$279,004.67. Total shipping cost was \$3014.08 Mar 26th CASS meeting closed this item.	Isaac Mackey		TBD	Closed

Notable A/C items since last CASS meeting			
Item	Notes or Preventable measures to prevent this from occurring again.	Move to open action items	Responsible Person
FIR Servo leak	N314MH ACTT 10,892.4 01/11/2020 After Flight, during post flight inspection, found hydraulic fluid on hydraulic deck. It appeared to be coming from Right Hand Cyclic Servo. There was no customer delay and aircraft was turned over for maintenance. Removed RH Cyclic Stick Servo and replace with new Servo. MOC was performed with no faults. Aircraft returned to service. Sent out for repair to HASS. Tested found leaking and replaced seals. All work done under warranty. No charge. Mar 26th CASS meeting closed this item.	Closed	
GOR O/H	Tail rotor gearbox 01/17/2020 While pressing the output shaft into the gearbox housing, the pressing plug fell onto the output bevel gear and created a 0.0015 inch deep nick on the backside of the bevel gear Contacted Bell product support and received repair instructions with correspondence (Case # 00063466) Performed Repair and place gearbox back in service. Mar 26th CASS meeting closed this item.	Closed	
FADEC Degrade	N319MH ACTT 6590.6 01/20/2020 FADEC degraded light illuminated during engine start. ACFT was being ground run for a leak check following scheduled maintenance. Light stayed illuminated through engine shutdown and after battery was reset. FADEC Troubleshooting performed. Replaced 2k4 Relay with serviceable. FADEC Fault Cleared and operational check performed with no faults ACTT 6614.2 2/14/2020 Upon engine start, the FADEC degraded light illuminated resulting in approximately one hour delay to customer. Customer rescheduled after waiting about one hour. Performed FADEC troubleshooting, Replaced 1K1 Start relay. Operations check good. Aircraft returned to service. Mar 26th CASS meeting closed this item.	Closed	

Notable A/C items since last CASS meeting			
Item	Notes or Preventable measures to prevent this from occurring again.	Move to open action items	Responsible Person
FIR Overtemp	N315MH 1/30/2020 Start Temperature (time) exceedance of over 10 seconds above 768 degrees. Flight was aborted. (no maintenance comments) Mar 26th CASS Meeting moved this to an open action item. Awaiting maintenance comments.	Open	
	N315MH 02/07/2020 Gen fail. Mar 26th CASS Meeting moved this to an open action item. Awaiting GOR and maintenance comments.	Open	
Inspections	N407RH 02/06/2020 Aircraft was preflighted and then flown, with three Calendar Inspections being overflown. ARTEX/ELT/1-month insp/3-month lube. And fire extinguisher insp. After the flight all inspections complied with, initiated report. Aircraft returned to service. Mechanic and pilot talked to about reviewing the CALM and logbook prior to a flight or daily inspection. Conducted tool box talk on the topic. Mar 26th CASS meeting closed this item.	Closed	
Eng Chip light	N304MH 2/7/2020 During downwind leg to the second landing site, the engine chip light illuminated. Pilot aborted the planned approach to the confined area (no maintenance comments) Mar 26th CASS Meeting moved this to an open action item. Awaiting maintenance comments.	Open	

Notable A/C items since last CASS meeting			
Item	Notes or Preventable measures to prevent this from occurring again.	Move to open action items	Responsible Person
Inflight pedal stop light	N319MH ACTT 6619.8 2/20/2020 Pedal Stop light illuminated after takeoff from field site in the vicinity of Alyeska PS8. No bindings or restrictions noted by pilot. Aircraft was returned to MTF. Upon preliminary inspection of T/R Pedal Stop System, mechanic noticed the T/R Pedal Stop Manual release handle was pulled out. Mechanic discussed this with pilot, but the pilot had not moved the handle. It was noted that the safety wire on the manual release handle was too long and was not holding the handle in the down position. Mechanic reset the handle to the down position and properly safetied the handle. Mechanic performed the T/R pedal Restrictor Operations check IAW Bell Manual. No defects noted. Pilot then performed maintenance flight on the pedal stop system with no defects. Aircraft returned to service. Mar 26th CASS meeting closed this item.	Closed	
Broken window	N307MH 01/03/2020 The cargo loader from Exxon at Pt Thompson accidentally bumped a cold, cabin window while loading cargo and broke the window. Removed Litter Window and replaced with serviceable. Aircraft returned to service. Mar 26th CASS meeting closed this item.	Closed	
GOR Tail rotor drive hardware	N309MH 03/06/2020 During the Maintenance Torque check on the Tail Rotor Drive hardware, two bolts on the aft, short shaft were found to be snug but not torqued. They were not loose, but they had no discernable torque. Also, no torque stripe had been applied to all eight bolts of short shaft. Retorqued all bolts on aft, short shaft to max torque. Applied torque stripe and transferred to logbook retorquing requirements IAW BHT 407 MM. Also, removed and replaced affected bolts with new bolts. Mar 26th CASS meeting closed this item.	Closed	

Notable A/C items since last CASS meeting			
Item	Notes or Preventable measures to prevent this from occurring again.	Move to open action items	Responsible Person
Tail rotor strike	N304MH 3/09/2020 Tail Rotor Strike in Alders (confined area opns.) Around 2; 30pm recon of confined area, 150' trees, 60' diameter LZ, power line running through one side. There was a 10-kt. wind from the northwest and pilot opted to descend into the confined area with the headwind instead of maximum LZ clearance. After descending into the LZ "hole" pilot could find only one suitable spot to land skids with uneven snow surface. Passenger offered to open the door and view tail rotor clearance for pilot. Passenger said that if the pilot moved three feet forward, the tail would be clear. Pilot felt the tail rotor strike in his pedals and the passenger said, "not good", never mind. Aircraft was returned to Homer. (maintenance comments missing) Mar 26th CASS Meeting moved this to an open action item. Awaiting maintenance comments.	Open	
Overspeed	N320MH ACTT 1979.4 03/10/2020 Pilot Induced N2 High Side (112% for one sec). First run for tail rotor balance was being performed and the pilot was doing the fuel checks on run-up. Inadvertently lifted the Fuel Switch instead of the transfer switch. Dropping the cover (and opening the fuel switch back up) caused the overspeed Maintenance contacted PWC and verified the engine must be sent in for inspection. Due to the turnaround times and flying requirements an exchange engine was purchased. Install in progress Mar 26th CASS Meeting moved this to an open action item.	Open	
Broken window	N328MH ACTT 6937.7 03/18/2020 Sweeping snow off top of aircraft and broom contacted OAT gauge. Window cracked. New window purchased for \$1100, painted and installed. Aircraft returned to service. Mar 26th CASS meeting closed this item.	Closed	

SDR,MIR,MDR, not listed on the notable A/C items list

GOR, FIR, HAZARD REPORTS not listed on the notable A/C items list

CANS, CAS MEMOS not listed on the notable A/C items list
CAN 20-01- AD2020-02-11- 412 inverters
CAN 20-02 – SB 119-098 – collective tube
CAS Memo M-20-01 BO-105 AAIP Rev 2
CAS Memo M-20-02 Bell 407 AAIP Rev 6

Tear down reports		
Aircraft and item name	Reason removed	Tear down report finding
None		

Recent AD's and manufactures bulletins not listed above		
Number	Aircraft	Description
None		

Other Notable Non A/C items since last CASS meeting		
Item	Notes	Move to open action items

AOG's for 2020
1. N314MH – PS5 – Servo leaking
2.
3.

AOG's for 2019 by Location	
PS4	
PS5	1
MTF	
GRB	
Tonsina	
VDZ	
HOM	
Kodiak	
Akutan	
Coldfoot	
Deadhorse	

NEW OPEN ACTION ITEMS	INITIATED BY	RESPONSIBLE PERSON	DEADLINE	CLOSED

Recent audit maintenance findings	
Finding	Corrective action
Repeat Finding: Tool Control: Tool control is still an issue in Fairbanks hanger for maritime helicopters. Maritime is not following their own policy on consumable items as they were present and toolboxes and on accounted for in personal drawers. Recommendation: Ensure that Maritime Helicopters mechanics are following documented company tool control policy to include specific areas such as consumables in tool boxes to meet the intent of AOG guidelines section 4.4.9.	There is a very mature tool control program at Maritime. The GMM prescribes the on-shift and off-shift inventories which are being accomplished by mechanics and also spot checked by maintenance leads and Q&S. One consumable item to which there was some confusion was spools of aircraft safety wire. This is being allowed into tool boxes in a shadowed position as with other tools. Photos evidences of daily inventories, shadow boxing and actual tool drawers attached as exhibits 1905201H (#1-#5). Disagree with this as a high risk item. Maritime has had only one FOD incident in five years which involved a customer having access to the aircraft and leaving a rag on the aircraft.
Repeat Finding: FOD control. During walkthrough of the Maritime Helicopters maintenance facility it was noted that FOD was present in company tool boxes, and does not meet the expectations of ExxonMobil Aviation Services for FOD control as outlined in the AOG paragraph 4.4.10. Recommendation: Ensure that FOD programs meet the intent of the ExxonMobil AOG section 4.4.10.	Spot checks are ongoing. CAS Memo produced and attached as exhibit 190502H #1 regarding FOD Program Promotion.
Finding: Incident and Hazard Reporting. During the review of the Safety Management System (SMS) program for Maritime Helicopters, the answers provided to the Advisors' questions indicated that the incident and hazard reporting system is not effective, and is not being tracked in the Maritime Helicopters SMS system. Recommendation: Work to further refine the incident and hazard reporting program and begin tracking and trending of reports. This can be done by the use of safety promotion, training, and increasing the general understanding level of the SMS as a whole.	Not certain about the comment here. Enclosed are exhibits 190501 (#1-#3). The Flight Irregularity Report and the Ground Occurrence Reports have good participation and tracking from the initial incident through management review at the quarterly Continuing Aviation Surveillance System Meetings' Safety Review. FIRs and GORs are also distributed to the workforce in the form of the quarterly safety notes as part of Continuous Improvement and Safety Promotion
Finding: Publication Control. While conducting aircraft hangar inspection in Fairbanks, Alaska it was noted that printed publications were present in aircraft tool boxes which is against Maritime Helicopters publications control policy. Recommendation: Ensure that the policy is being followed as written, and copied publications are not present in tool boxes.	There was a single evidence of a mechanic whom had printed a page from the Bell manual to accomplish a task and then not destroyed the copy. GMM reference changed to include the printing of "uncontrolled copy" footer on all technical manual reproduction. Exhibit 190503M #1

Recent audit maintenance findings	
Finding	Corrective action
Finding: Aircraft Logbooks. During review of aircraft logbooks it was noted that aircrew preflight signature acceptance documentation was missing. Recommendation: Ensure that pilots are following logbook documentation procedures for acceptance of aircraft regarding pre-flight.	CAS Memo attached to stress completion of records and will also include the system for changing errors made in aircraft logbooks associated with finding 190505L Exhibit 190505M #
Finding: Emergency Response Plan. During review of the Maritime Helicopters emergency response plan program it was noted that expectations do not meet ExxonMobil AOG 10.2.1 guidelines. There was no documentation on drills, and how they manage the deficiencies noted during drills. Recommendation: Ensure that the emergency response plan drill deficiencies are identified, and assigned to personnel for rectification with target dates for completion.	Discussed the ERP addition to the iAuditor program. (Exhibit 190506M #1). It was also discussed that ERP has been added to the Safety Portion of the Quarterly CASS Meeting with the complete Safety Committee attending. Management participation in ERP has been positive and ERP will be added to regular audit schedule. ERP is still discuss at all indoctrination Training and (now) annual instead of biannual safety training
Finding: Audit Plan. During a review of the Maritime Helicopters quality assurance program it was identified that no annual audit plan exists, and no tracking of audits was available. Recommendation: Create an annual audit plan, and tracking system to ensure scheduled audits are completed on an annual basis.	Audit plan has always existed and <i>was previously</i> more focused on a manual system with results entered into an Excel format. Now, with iAuditor (discussed with Aviation Advisor and on the <i>suggestion</i> of the aviation advisor) the audit plan is stored in iAuditor. Exhibit 190507 #1
Finding: Risk Register. During review of the Maritime Helicopters quality management program it was noted that there was no audit feedback to the risk register to identify new risks in the Maritime Helicopters operation. Recommendation: Ensure that the audit function has a tie back to the risk register to ensure risk identification and risk mitigation for the quality management system that meets the intent of the ExxonMobil AOG section 2.0.3	Finding Under Review. Having added the Safety Review portion to the quarterly CASS meeting. The “management involvement and feedback” is being accomplished.
Finding: Shelf Life Control. During a review of the Maritime Helicopters spares department items were identified that were past shelf life, and did not match dates being tracked in the stores control system. Recommendation: Ensure that all items entered into the stores control system are entered accurately, and match shelf life dates on parts that are on the shelves.	There was a single item that was transcribed into the CALM program improperly. It was not expired during the audit visit and the monthly, shelf life item inventory would have caught the mistake. Exhibit 190501L #

Recent audit maintenance findings	
Finding	Corrective action
Finding: SMS training. During the review of the SMS program it was noted that SMS training is accomplished every two years. Given the findings concerning incident and hazard reporting, the Advisor felt training on the Maritime Helicopters SMS could be stronger. Recommendation: Conduct SMS training annually.	Quality & Safety has added SMS training on annual basis
Finding: Stabilized Approach. During a review of the Maritime Helicopters operations manual it was noted that the stabilized approach rate of decent exceeds the AOG allowable of 750 ft. /min. Recommendation: Ensure that the Maritime Helicopters operations manual notes that if a rate of decent exceeds the AOG maximum, that a verbal briefing is conducted to meet the intent of the ExxonMobil AOG section 6.11.3.d.	The Maritime SOP has been revise to reflect the policy of AOG's 750 ft./min rate of descent for stabilized approaches Exhibit 190503L #1 (2 Pages)
Finding: PED Policy. During a review of the Maritime Helicopters operations manual it was noted that there is no personal electronic device policy. Recommendation: Ensure that Maritime Helicopters creates a personal electronic device policy, and inserts it into the current operations manual to meet the expectations of the AOG section 6.11.6.	Maritime SOP Changed to include a more AOG compliant policy regarding Personal Electronic Devices. Exhibit 190504L #1
Finding: Dangerous Goods Storage. During a review of the Maritime Helicopters spares department it was noted that dangerous good items are not segregated on the shelves from standard spares. Recommendation: Ensure that all dangerous goods items are segregated in a dangerous goods area in the store room.	Dangerous Good Categorization is for shipping of items aboard aircraft under IATA. The flares in question were in their original packaging and stored IAW the SDS. (190509L #1). Flares have been moved to a military style ammunition can on the insistence of the aviation advisor.

Suggested maintenance training for next year

Safety Management System		Evidence	Effectiveness
Emergency Response Plan-Old		Probably need to do an exercise with the Koala/B412 primary/backup---self supported ERP up at OSI?	Discuss possibilities due to two aircraft being there.
New		Exxon still calls for pre-season exercise. Need to confirm with Project Manager that this fits the bill Close this items as acceptable ERP plan	
Station Checklists-Audit Program-OLD		iAuditor working well Remote audits on hold for Corona Virus scare Adding Fuel Vendor Audits due to OSI Audit finding (Big State) Fairbanks Base audit begins 30 Mar-3 April Internal Evaluation manual version 20-1 is out an on portal. Incorporates iAuditor. The Checklists in the appendices are now just examples. iAuditor is "IT"	. Vendor Audit complete for Crowley/Exxon/Deadhorse
Management of Change	OLD	AW119-UPDATE	MoC closed
	NEW	Other new Aircraft/Systems? Twin otter update	MoC for NVG operations closed

Safety Management System	Evidence	Effectiveness
Overall Safety Effectiveness-OLD	Incident Reporting improved this quarter	Effectiveness Still a bit slow on GOR/FIRs, but even getting some input from new employees on these
	Awaiting Exxon audit results	Only substantial open item is QA/QC training for Brent and Isaac. Numerous emails, phone calls and text to Chuck Ross. No response
	Training	Keep stressing Toolbox talks! (record) SMS Training to be added annual instead of biannual. Annual SMS training successful with Alyeska personnel. Add Homer when able.

Next CASS meeting scheduled for	04/23/20
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