



Maritime Helicopters

CASS

Continued Airworthiness Surveillance System

**December 2019
Meeting minutes**

CASS Meeting

12/31/19	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	Dave Jones, Steve Slade

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. Open	Isaac Mackey	Steve Slade	09/30/19	
N312MH 02/14/19 ACTT 3915.6 Aircraft arrived in MTF from GRB with three main rotor head bearings out of limits. Grounded aircraft and removed the main rotor head for evaluation. Investigation in progress. Planning on corrective action of mechanic training on elastomeric bearings. Feb 21st CASS moved this to an open item. 07/18/19 This has been discussed as tool box topics and a formal elastomeric inspection training will be conducted at the annual training in October. July 18 CASS meeting closed this item.	Isaac Mackey	Jackson Cole / Dennis Busch	07/18/19	Closed

N193AL 02/14/19 ACTT unk Engine chip light. Waiting on FIR Feb 21st CASS moved this to an open item. N193AL #8 bearing failure 01/06/19 ACTT: 8072.3 Statement from onsite mechanic “As requested, (Fig 2 of Ch. 72-50-00 attached for reference) I pulled #11 and #8 for cleaning on 1.6.19, ACTT 8072.3 and afterwards realized we had no O-rings (rookie mistake) cleaned, lubed and reinstalled, had some leaking at run up, but was able to slow both #11an #8 to a slow leak (slow, dribble, leak whatever you want to call it). The pilot and I were very comfortable with it till we got O-rings in. Finding statement: See the attached reference from the RR OMM Ch. 72-50-00 for the procedure to remove and reinstall the #8 bearing. 01/29/19 ACTT: 8084.0 (Fig 2 of Ch. 72-50-00 attached for reference) Mechanic showed up with bag of O-rings, minus #10 O-ring for #8 so I changed both #13 O-rings for #11, and leak check was good. Updated relief mechanic on situation. I called the DOM and informed him we still needed #10 O-ring, and I believe it was shipped out the next day, after that I don't know when or what went on because we crew swapped. 02/12/19 ACTT: 8089.4 (Verify) From FIR: “Engine chip light illuminated. Called maintenance on the sat phone we wiped off the chip detector and reinstalled. Engine was making noise and we got another engine chip light within two minutes of ground run. We found that the turbine section of the engine was bad.” 02/21/19 ACTT 8089.4 (Verify) From FIR: “Replaced engine” Compressor removed S/N CAC-91334 Turbine removed S/N CAT-97928 Gearbox removed S/N CAG-90101 02/27/19 compressor quote for inspection at \$1039.00 03/06/19 turbine quote for repair/overhaul at \$80,154.83 Also included was the teardown report for the turbine showing the possible disturbance of the #8 bearing. July 18th CASS meeting closed this item.	Isaac Mackey	Steve Slade	07/18/19	Closed
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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 Open	Isaac Mackey	Isaac Mackey / Jackson Cole	TBD	

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
N330MH FM Radio issue	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) Open and watching	open	
Bell 412 Emergency Float Test	GOR 201906 During the 2-year special inspection of the emergency float system, when the manual release handle was pulled, the cable attaching the handle to the float valve broke. Upon inspection of the cause of the manual release cable breaking, I noticed that the bellcrank that is mounted by the side of the pilot collective stick was contacting the floor making it difficult to pull the release cable. I attempted to pull on the release cable forward of the bellcrank and found that the float valve lever still would not actuate. Another mechanic noticed while I was pulling on the cable that the float valve lever was jamming up on a screw that was installed in the float valve clevis. This screw was installed at the manufacture as a safety to prevent inadvertent discharge of the valve assembly. Once the screw was removed, I was able to pull on the manual release cable and deploy the emergency floats. Once the floats were fully inflated, I noticed that the LH mid float bag did not deploy properly and was wedged up under the flight step. after about 20 minutes of the floats being inflated, the LH mid float bag ruptured, splitting the aft chamber of the mid float bag open. I also noticed that the RH aft float bag was leaking air out of the forward chamber. The cause of the leak on the RH aft float bag was due to the bag contacting a clamp on the aft crosstube, which is used to secure the float lines to the crosstube.	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
Chip Light	N407PA 08/09/2019 Main Transmission UPPER chip detector light illuminated. On 8/9/2019 at 0830 hrs. on short final into Tiekel Repeater, the xmsn chip light illuminated. After performing normal engine shutdown, the pilot contacted maintenance personal and then pulled the upper chip detector probe. Pilot found a small metal sliver. After cleaning and replacing the probe, a five-minute ground run was performed with no anomalies. The customer (AT&T) was not delayed. Inspected and cleaned chip detector. Performed leak/serviceability checks. No faults.	Closed	
Jet fuel Spill	GOR 201905 N320MH Jet Fuel Spill During the replacement of the fuel pump on the AW119, the mechanic removed the fuel transfer pump with approx. 220 kg of fuel. Approximately 80 kgs of fuel emptied on the floor of the hangar. DAC crews and Maritime crews immediately set to cleaning the spill which did not discharge beyond the hangar floor. The cost of consumables to DAC was \$283.00	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
Loose Oil Line	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. 12/31/19 CASS meeting moved this to an open item Waiting on teardown reports and final cost.	Open	
Trans Chip	N319MH 10/24/2019 Xmsn chip light illuminated in flight while on pipeline security job. Pilot reversed course to land at Alyeska Pump Station 8. Chip detectors were removed using pilot remote maintenance authorization after called Fairbanks Maintenance. A small, threadlike sliver was found on the chip detector (lower) plug. Chip detectors were wiped clean, reinstalled, and then a leak check was performed per Maritime GMM with no faults noted. Back at Metro Field after flight back (terminated mission), mechanic checked the main xmsn chip detectors, no metal was found. FOD check was performed and then a leak check was performed with no additional faults/chips found.	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
Improper installation of a flight control	N316MH 12/08/19 Aircraft Tail Rotor Servo was being worked on due to several failure "codes" in flight or during run-ups. The aircraft has the high-altitude tail rotor modification. The mechanic moved the old servo and installed the new one. Pilot was called to perform the FOD check and that was done, looking at the servo from both the aft (from tail boom) and from forward, from the cargo compartment. Pilot and mechanic went to perform the MOC flight to check the operation of the tail rotor servo. It was noted that forward and aft cyclic seemed to require more pressure than normal, even though cyclic friction was off all the way. The aircraft was returned to the hangar for troubleshooting. Maintenance informed pilot that the servo had been installed incorrectly. The tail rotor servo bell crank was damaged beyond repair by this mis-installation and use. Damage was due to the control rod-end installation on the bottom of bellcrank instead of the top. New Bellcrank was installed and MOC completed with no faults. Total cost for damaged parts: \$1545. The maintenance individual received a letter of reprimand in his file.	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 19-02 – ASB 206L-19-182 – tail rotor blade inspection
CAN 19-03 – AD 2019-07-10 – LCR-100 AHRs
CAN 19-04 – AD 2019-07-07 – Swashplate bellows removal of
CAN 19-05 – ASB 412-14-160 RB – main driveshaft nut replace
CAN 19-06 – AD 2019-08-10 – oil line restrictor (incomplete)
CAN 19-07 – AD 2019-09-02 – Oil check Valve
CAN 19-08 – Bell TT strap retirement time, increase of
CAN 19-09 – ASB 407-19-119 – AC inspection
CAN 19-10 – ASB 407-16-112 RC – AC inspection
CAN 19-11 – ASB 206L-16-176 RC – AC inspection
CAN 19-12 – ASB 206L-19-183 – AC inspection
CAN 19-13 – ASB 206L-19-181 – T/R disc pack hardware replacement
CAN 19-14 – ASB 412-19-179 - Reduction gearbox oil line, inspection and relocation of.
CAS Memo M-19-02 – 206/407 MEL Rev 7

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 2019	
1.	N312MH – 02/09/19 – GRB – Engine overtemp
2.	N193AL – 02/14/19 – Akutan – Engine chip light (#8 bearing)
3.	N327MH – 03/21/19 – Valdez – boost pump wiring
4.	N327MH – 04/14/19 – Valdez – Fuel differential pressure switch
5.	N328MH – 04/15/19 – MTF – Mast assy
6.	N320MH – 05/20/19 – Deadhorse – Oil pressure bypass valve
7.	N328MH – 06/21/19 – Deadhorse - Grease pack seal leak
8.	N309MH – 07/12/19 – Juneau – FADEC fault
9.	N319MH – 08/16/19 – PS4 – Eng. temp bulb
10.	N319MH – 10/12/19 – MTF - Loss of oil pressure
11.	N315MH – 12/13/19 – Kenia – Leaking fuel pump

AOG's for 2019 by Location	
PS4	1
PS5	
MTF	2
GRB	1
Tonsina	
VDZ	2
HOM	2
Kodiak	
Akutan	1
Coldfoot	
Deadhorse	2

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
407 main rotor bearing inspection training. 206 Mast overhaul/assembly training

Safety Management System		Evidence	Effectiveness
Emergency Response Plan-Old		18 Feb- Exxon Table Top ERP Planning for 2019. Amended ERP Checklist Sent to Exxon	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
New		Probably need to do an exercise with the Koala/B412 primary/backup---self supported ERP up at OSI? This is the year for RED Cross training	Discuss possibilities due to two aircraft being there. Need to have all departments begin compiling list of names for CPR/AED/First Aid training. Cost is still \$27.00 each. Instructor recertification is complete. Need approx. \$150 of expendable supplies for classes.
Station Checklists-Audit Program-OLD		Most Stations now using iAuditor. Several bumps along the way with scheduling. 40%-50% at best Began iAuditor led audit of Fairbanks Base. Homer still needs to complete a monthly iAudit. July was complete except for Kodiak Need to work with Homer as far as automated version Adding Fuel Vendor Audits due to OSI Audit finding (Big State) OSI looking for completion on several issues	Attempted Fall audits at Pump Stations 4&5, turned back for icy roads. Reschedule and now schedule Homer and Fairbanks audits. Fairbanks annual audit complete now Checklist added RII pay schedule?
Management of Change	OLD	AW119-UPDATE	Need Status update from Steve? Aircraft already working, ask Steve to just review effectiveness of MoC?
	NEW	Other new Aircraft/Systems?	MoC for NVG operations started by D. Jones

Safety Management System	Evidence	Effectiveness
Overall Safety Effectiveness-OLD	Incident Reporting improved this quarter <i>New BBS coming?</i> Still haven't purchased new ladders for Fairbanks (went to backburner as there were many opinions on what to buy) Awaiting Exxon audit results Still need a major ERP exercise at both bases. We had one first aide injury in April. Training	Effectiveness Still a bit slow on GOR/FIRs, but even getting some input from new employees on these Behavior based Safety Observations-Program on hold as ISNetWorld okay with us using Alyeska Program. Add Anonymous Reporting to Toolbox Talks and Safety Letter (update-waiver from Alyeska on BBS) ASRAP response in progress. 85% answered. Awaiting CAS memos on discussed items from DoM- Still Outstanding but no word from Exxon Keep stressing Toolbox talks! (record) Need Fire Drill at Homer. 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	03/26/20
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