



Maritime Helicopters

CASS

Continued Airworthiness Surveillance System

4th Quarter

Jan. 2022

Meeting minutes

CASS Meeting

01/27/22	10:00AM	MTF
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MEETING CALLED BY	Isaac Mackey
TYPE OF MEETING	CASS Meeting
FACILITATOR	Isaac Mackey
ATTENDEES	Dave Jones, Steve Slade, Dave Buzga, Mark Hedlund, Matt Stevens, and Dennis Busch.

Agenda Topics

1. Discuss old open action items
2. Review notable aircraft items since last CASS meeting
3. Review SDR,MIR,MDR reports
4. Review GOR's and FIR's reports
5. Review CAN's / CAS memos
6. Review teardown reports
7. Review Manufacture bulletins and AD's
8. Review notable items since last CASS meeting
9. Review AOG's
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. Flight Operational Quality Assurance (FOQA) Steering Committee
15. Other items
16. Schedule next meeting

OLD OPEN ACTION ITEMS	INITIATED BY	RESPONSIBLE PERSON	DEADLINE	CLOSED
07/13/2020 N600MH ESIS will not indicate in headed mode accurately above 70N IAW Manufacture. Looking for verbiage from Viking to address this issue in the form of a bulletin. July 30th CASS Meeting moved this to an open item. Pursuing remediation for system. More to follow Sept 29th CASS assigned this to Mark. 01/21/21 Software update in progress. Viking has approved current operation until the update is released. Jan 21st CASS Meeting left this an open item. 04/29/21 Software update in progress April 29th CASS Meeting left this an open item.	Isaac Mackey	Mark Hedlund	TBD	Open

OLD OPEN ACTION ITEMS	INITIATED BY	RESPONSIBLE PERSON	DEADLINE	CLOSED
July 30th CASS Meeting left this an open item.				
Nov 11th CASS Meeting left this an open item.				

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: 202125 Hot Start	07/15/21 N306MH B206L3 Pilot /Homer hot started aircraft; exceeded 10 seconds transient. Overtemp insp. performed. Burner replaced due to nozzle wear. More adjustments completed, did multiple starts. Start sequence good per pilot 306MH - 7/16/21 - Pilot Batt Cart 1st start really cool. Next start of acft Batt good. Acft flies then complains the next start was warm. Aborts 4th start. Completes 5th start with no issues. Aircraft started hot again. Asst6 Chief Pilot confirmed. Adjusted until starting correct. Restarted cold, Pilot started while Eng. hot, starts were confirmed by both to be good.		
202132 Gauge shows exceedance. Inadvertent use of transient torque	11/08/21 N407RH Bell 407 During flight to alternate LZ from initial attempt at Far Mountain, aircraft tried landing at Fox Relay. Visibility was approximately 2-3 miles and temperature was approx. -24C. While climbing up to Fox Relay summit and COMM site, aircraft windscreen started to ice. Pilot immediately turned the aircraft out of the icing and while turning, the Check Instrument light lit momentarily with an E in the Temperature gauge. Exceedance on gauge said 780 degrees upon shutdown (transient range). Aircraft was returned to base at MTF and maintenance was alerted to possible use of temp. transient. Write-up was placed in logbook. Engine computer downloaded engine record with no exceedances of temp, torque, nor NG. Aircraft was returned to service. Icing was light.		
202131 Torque gauge shows exceedance	11/23/21 N312MH Bell 407 Departed PS4 with 1 pax, 950# fuel, 100# Cargo, Gross wt: 4700#. Wx: Clear, Temp: -30F. Approximately 3 minutes after departure, while in cruise at 100kts/70%tq, check instrument light came on. Torque gauge showed flashing bars and number readout was showing erratic indications with 'E' indication. All other instruments showed normal operation and there was no indication of abnormal conditions.		

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Item	Notes or Preventable measures to prevent this from occurring again.	Move to open action items	Responsible Person
	Turned around to return to PS4. Enroute to PS4, Torque gauge indications returned to normal with continued 'E' displayed. After landing and informing mechanic, instrument check indicated an exceedance of 134.1%. Connected laptop, showed Torque exceedance of 134.1%, and an additional exceedance of 121.5% when the helicopter was not running. Mechanic cleared exceedance indication. Mechanic was unable to find a cause. A maintenance flight was performed after inspecting the aircraft. Issue could not be duplicated. Turned over to maintenance for continuing diagnostics.		
FIR: 202126 Pilot Transmit Switch INOP	11/27/21 N407PA B407 Upon liftoff from parking, pilot tried to get clearance from tower. Pilot Transmit switch was inop. Landed and called maintenance. Passenger delay approx. one hour. Cleaned pilot transmit switch w/Electra clean and checked security of transmit switch. Ops checked XMIT switch OKAY, aircraft returned to service		
FIR: 202127 Generator overvoltage	12/06/21 N600MH Twin Otter Right Generator overvoltage shortly after takeoff, did not self-correct. Returned to Deadhorse to normal landing (first of several for this issue)		
FIR: 202128 Generator Faults	12/20/21 N600MH Twin Otter At 1330LCL we taxied out for a flight from PASC to PMD with 1800 pounds of cargo and 1 pax when a Right Generator off CASS message was displayed. Conducted the QRH checklist for the failure. We were unsuccessful! in correcting the issue and returned to the hanger. Multiple engine runs were conducted with maintenance in an attempt to rectify the generator issue but were unsuccessful in rectifying the problem. At 1855 the flight was canceled. Replaced Starter generator and reverse current relay, see LP 027227 and 027228 For complete details of maintenance performed		

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 202129 Generator Faults	12/24/21 N600MH Twin Otter PASC - PAAD After starting engines, I was unable to select R gen on. Generator display would indicate over voltage or correct voltage with no amps. We terminated the flight after discussing with maintenance Mission included Cargo and planned PTEP. No PAX onboard. 1. Replaced #2 gen control relay (K2), ops check unsatisfactory - after changing relay noticed RCR chattering 2. Replaced #2 Reverse current relay - Gen #2 observed to be overvoltage and will not load share amperage. #1 gen at 27.5 Vdc and 101 amps, #2 Gen at 30.2 Vdc and zero amps. 3. Started engines to parallel voltage regulators, #1 generator would not come online, and #2 generator would not come online. Both generators offline. 4. Replaced bus tie relay with no effect 5. Replaced r/h starter/generator with no effect. 6: Performed engine run, Left generator function was normal, right generator was at 29 volts with no amps 7. Swapped #1 and #2 RCR's - Gen 2 29 volts, producing what appeared to be normal (did not take value) amperage. Gen 1 produced 28.5 volts and no amperage. The problem followed the reverse current relays. Left the known good RCR in the #2 spot 8. Replaced #1 reverse current relay both generators came online. I started looking at the overvolt as being caused by the RCR kicking offline and unloading the generator, rather than the system overvolting, and kicking the RCR offline. Once I started looking at that part of the diagram and shooting wires, I knew which components to begin looking at, and found the bad solder joint on the generator switch.		

Notable A/C items since last CASS meeting			
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	12/25/2021 N316 Bell 206L4 N316MH is a regular replacement for N314MH at Pump Station 5 which normally occurs in the winter months. N316MH does not have an Arctic Heater Kit installed. Customers continually complain of the lack of heat especially when in the rear seating area. These customers are briefed to wear their full arctic gear in the rear compartment so to stay warm. The Pilot has issues with the wind screens icing up due to the lack of heat coming from the defrost system. The occurrence of the wind screen icing up is really pronounced when the temperatures are in the -10 and above ranges. This issue has been brought up to maintenance leadership and operations numerous times over the past years.		

SDR,MIR,MDR, not listed on the notable A/C items list
09/20/21 – N600MH – MDR – CAS messages – Faulty soldering during installation

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 21-01 – ASB412-20-181RA - Main rotor expandable blade bolt, inspection of
CAN 21-02 – ASB407-21-122 – Main rotor pitch link tube inspection
CAN 21-03 – ASB206L-21-186RA – Main rotor pitch link tube inspection
CAN 21-04 – AD2021-05-07 – inspect and replace starter gen wiring
CAN 21-05 – AD2021-07-08 – Inspect mast flange area for cracks
CAN 21-06 – AD2021-10-08 – 206 low fuel switch
CAN 21-07 – AD2021-03-15 – 119 tail rotor pitch change control mechanism
CAN 21-08 – AD2021-10-14 – 105 TT strap retirement tracking
CAN 21-09 – AD2021-10-21 – 105 swashplate bellows
CAN 21-10 – AD2021-14-14 – 119 electrical
CAN 21-11 – ASB407-21-123 – 407 300hr tailboom inspection
CAN 21-12 – AD2021-13-14 – Rescue hoist
CAN 21-13 – ASB412-21-185 – tail rotor driveshaft assembly
CAN 21-14 – AD2021-15-06 – tail rotor disk pack
CAN 21-15 – AD2021-16-06 – 119 TRGB
CAN 21-16 – AD2021-19-01 – Comfort clips
CAN 21-17 – ASB407-21-125 – CPT, intro of
CAN 21-18 – ASB407-21-126 – Pilot cyclic control stick balance
CAN 21-19 – AD2021-20-18 – Improperly installed passenger cabin windows
CAN 21-20 – AD2021-21-03 – damaged connecting link
CAN 21-21 – AD2021-22-05 – collective control tube
CAN 21-22 – AD2021-24-15 – Air comm air conditioning system

CANS, CAS MEMOS not listed on the notable A/C items list
CAN 21-23 – AD26-08 – Tail rotor drive hardware, replacement of.

Teardown 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
DEF System	10/17/21 2021 Duramax work truck 14000 miles While driving to VDZ to support the N407PA AOG the truck began do go into limp mode. Speed was reduced to 4MPH. the truck was swapped with the work truck in GRB and the maintenance crew continued on the VDZ to complete the overtorque inspection. 10/20/21 the truck was towed to Fairbanks from GRB under warranty. During the towing process the rear window was broken out. Fairbanks Lithia is working to replace the DEF tank and window under warranty. 11/09/21. Fairbanks Lithia ordered the DEF tank. Estimated three weeks out. 12/10/21 Received truck back from Lithia. No defects noted. Jan 20th CASS closed this item.	

AOG's for 2021
1. N600MH – 01/03/21 – Deadhorse – Fuel nozzle leak
2. N314MH – 01/20/21 – PS5 – Transmission temp
3. N312MH – 01/27/21 – MTF – Transmission pressure
4. N600MH – 02/01/21 – Deadhorse – Fuel nozzle leak
5. N308MH – 02/07/21 – PS4 – Transmission pressure
6. N600MH – 03/01/21 – Deadhorse – Deice timer
7. N600MH – 04/23/21 – Deadhorse – Avionics start battery
8. N306MH – 07/19/21 – Homer – flight controls binding
9. N320MH – 07/19/21 – Deadhorse – engine oil pressure switch
10. N320MH – 08/18/21 – Fairbanks – VG failed
11. N320MH – 08/28/21 – Fairbanks – Engine oil leak
12. N320MH – 09/09/21 – Deadhorse – VG failed in flight

AOG's for 2021
13. N308MH – 09/15/21 – Fairbanks – Pitch link bearing
14. N316MH – 09/20/21 – Coldfoot – Engine gearbox replacement
15. N407PA – 10/16/21 – Valdez – Engine overtorque
16. N600MH – 12-21-21 – Deadhorse – Gen coming offline

AOG's for 2021 by Location	
Deadhorse	7
PS4	1
Coldfoot	1
PS5	1
MTF	4
GRB	
Tonsina	
VDZ	1
Kenia	
HOM	1
Kodiak	
Akutan	

NEW OPEN ACTION ITEMS	INITIATED BY	RESPONSIBLE PERSON	DEADLINE	CLOSED

Recent audit maintenance findings	
Finding	Corrective action

Suggested maintenance training for next year

Safety Management System	Evidence	Effectiveness/Discussion
Emergency Response Plan-Old	ERP 26 current Homer Completed Fire Drill in DEC. Need to add to iAuditor (Tom) Discussed new version Conoco Phillips to incorporate CP differences and restructure	In progress/Discussion? Conoco items tabled until contract develops. (Update: tabled for the season which did not develop) New Bid in progress for summer 2022...no addressing all CP per-audit documents
---New	Fuel Quality manual Revision/ Reissue in Progress	Jeremy/Dennis

Safety Management System	Evidence	Effectiveness/Discussion
Station Checklists- AuditProgram- OLD New	COVID has pretty much knocked out traveling for audits, but iAuditor is catching a lot of corrective actions. Audits? Need to add item in iAuditor for Station Audit to check inventory on Spill Kit Items Fire Extinguisher audit added to Fairbanks (by number and location) Small Changes made to Fairbanks's audit template to accommodate differences.	Pump Four, GRB, Valdez, and Fairbanks, Kodiak & Valdez mgmt. audits complete for 2021. OSHA visited GRB and thought everything looked great. Homer is only out-standing mgmt. audit (post season-Dennis & Isaac?) (Homer to be looked at by Dennis the week of the McGriff/Star Aviation audit 7 Feb) Yes, it can be done. Was trying this as a few sites (Akutan) have some issues with the one size fits all template. Discussion? Start Aviation Audit in Homer for the week of 7 Feb. Dennis will travel to Homer for Audit and accomplish mgmt./annual audit for Homer that week. INDOC Class for new employees down there? Hasn't been accomplished in a while

Safety Management System	Evidence	Effectiveness/Discussion
Management of Change OLD NEW	Red Cross training plan for fall. Online academics with in-person practical skills? Annual review of Risk Management Manual due (Jones&Buzga) No MoC for Human External Cargo, but will need a Risk Management Case added to RM Manual	First Aid/CPR/AED Training completed with Blended learning system, only requiring 1 hour in classroom and 2-4 hours of onlinetime per student... Summary, it worked.
Overall Safety Effectiveness-NEW	Driver's Safety! Toolbox talks in Fairbanks more regular and accountable this quarter in Fairbanks. General Laziness in Filling out GORs/FIRs...aircraft history, etc	Discuss for Homer?

Flight Operational Quality Assurance (FOQA) Steering Committee:

DHC-6-400 is active as of 10 Jul 20. Event validation is ongoing at this time. Several events will need to be modified in order to ensure flight operations are being conducted within the SOP. Modified events will be implemented during August 2020 as we continue event validation. (Follow up?)

Next CASS meeting scheduled for	04/21/22
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Maritime Helicopters

Third/Fourth Quarter 2021 Quality & Safety Notes



Hello from Fairbanks and welcome back to the increasingly, poorly named, third quarter quality and safety notes! Let's just say it has been a busy summer and fall and head right into winter. There have been a lot of happenings! Audits from NASA, but not in space...and Exxon, but not in a hole in the ground. Department of Defense has shown us militant concern. And Alyeska continues to pipe-in their audit questions. We've had a lot of training going on. The Alyeska pilots and mechanics had some heart stopping CPR & Defibrillator classes And ThinkHR classes continue to be a cerebral topic of discussion. Lots of topics to cover. We may have to go into a second edition. NAH, everyone loves an eleven-page safety letter!

September in Alaska had an Interior company "total" a McDonnell Douglas aircraft in a dynamic rollover event

McDonnell Douglas 369E, N125KW: Accident occurred September 06, 2021 in Delta Junction, Alaska

This is preliminary information, subject to change, and may contain errors. Any errors in this report will be corrected when the final report has been completed.

The National Transportation Safety Board did not travel to the scene of this accident.

Additional Participating Entity:

Federal Aviation Administration / Flight Standards District Office; Fairbanks, Alaska

Aurora Aviation Services Inc

<https://registry.faa.gov/N125KW>

Location: Delta Junction, AK

Accident Number: ANC21LA083

Date & Time: September 6, 2021, 17:42 Local

Registration: N125KW

Aircraft: MCDONNELL DOUGLAS HELICOPTER 369E

Injuries: 2 None

Flight Conducted Under: Part 135: Air taxi & commuter - Non-scheduled

Aircraft and Owner/Operator Information

Aircraft Make: MCDONNELL DOUGLAS HELICOPTER
Registration: N125KW
Model/Series: 369E
Aircraft Category: Helicopter
Amateur Built:
Operator:
Operating Certificate(s) Held: On-demand air taxi (135)
Operator Designator Code:

Meteorological Information and Flight Plan

Conditions at Accident Site: VMC
Condition of Light: Day
Observation Facility, Elevation: PABI, 1277 ft msl
Observation Time: 17:53 Local
Distance from Accident Site: 26 Nautical Miles
Temperature/Dew Point: 9°C / 3°C
Lowest Cloud Condition: Scattered / 2200 ft AGL
Wind Speed/Gusts, Direction: 5 knots / , 90°
Lowest Ceiling:
Visibility: 10 miles
Altimeter Setting: 29.96 inches Hg
Type of Flight Plan Filed:
Departure Point: Delta Junction, AK
Destination: Delta Junction, AK

Wreckage and Impact Information

Crew Injuries: 1 None
Aircraft Damage: Substantial
Passenger Injuries: 1 None
Aircraft Fire: None
Ground Injuries:
Aircraft Explosion: None
Total Injuries: 2 None
Latitude, Longitude: 63.999752,-144.73459 (est)

If you hadn't heard about this incident, it was pure dynamic rollover. If you aren't acquainted with that term, it might be because you work in one of our offices, or on the hangar floor, but the pilots get evaluated on this pretty much every year. I've always heard that if you can't describe the science of your own job to a complete layman or a 4th grader, then maybe you don't know your job that well. Okay here is my attempt to talk about Dynamic Rollover without making scientific drawings, nor relying on our stock, checkride answers! (Not that any of us would just walk around with memorized answers all day!!!).

Helicopters are made to go up. Usually that means that all parts of the aircraft should go in the up direction at the same rate! You should never leave parts behind. But sometimes something like a landing skid or landing gear gets stuck on or under something on the ground while you are trying to pick the aircraft up. This is very bad. What can happen is that the whole aircraft will try to go up, but pivot on the "stuck" part and do a side flip into the ground. This is very, very bad!

If you keep pulling power in, and one side of the aircraft gets "stuck" you will exceed a critical angle where all of your momentum is rolling instead of going in that great "STRAIGHT UP" DIRECTION.

The worst part is, that this can happen so quickly that the pilot can't recover once the aircraft starts rolling sideways! So how do you get out of this situation and how do you keep from getting into it in the first place? The answers are TOO EASY!

1. After you land, check your landing gear/skids to see if you may be caught on anything or maybe under a heavy snow layer
2. Pick up the aircraft very slowly! That way, if you are caught on something, you should never get to the angle where you would tip the aircraft. Also, if you pull in power slowly, you'll never have enough momentum to flip the aircraft if you do start tipping. You would just place the collective back to flat pitch and stop the excitement

and then shut down to try digging out whatever you hung up on in the first place.

If you are a pilot, PLEASE watch some of the numerous videos on YouTube and other sites on Dynamic Rollover and how to prevent it.

<https://www.youtube.com/watch?v=CzyRkP87NxE>

<https://www.youtube.com/watch?v=0O-SZ9QBwzE>

<https://www.youtube.com/watch?v=kVO7AsihmvE>

There are many more of these videos available!

A postscript to this article...

Just this Monday, I went out to a customer site where the snow was three feet deep with two inches of ice on top of the snow. This is a perfect condition to get into dynamic rollover! I landed a few times to crush the surface ice in case that icy top would stick me in the snow underneath as I picked up. Then, after landing, I stomped the snow down around the landing skids to break up the ice. When I took off later, I came up **EXCEEDINGLY** slowly to ensure the skids were clear of the ice layer. All's well that ends well. The other choice would have been to NOT LAND HERE.



Alaska wildlife note; there is an Arctic Ground Squirrel in this photo, trying to walk across the ice with great difficulty.

The Safety Management System (Incident & Accident Reporting)

FIRs/GORs for 3rd Quarter 2021

FIR: 202122 Weather Return/Weather below IFR Minimums	10/8/2021/1030 N600MH Today 10/08/21 approximately 10:30 after departing PAAD in route to PASC the weather dropped below landing minimums. Center informed us the Alaska jet was holding over MAJEF at 4000 feet and wanted to know our intentions. After assessing our options, we agreed the chances of extended delays over PASC would result in us exceeding our bingo fuel and cost us our alternate landing airport. I decided to return to Point Thompson with the passengers and wait for better weather.		M. Hedlund
FIR: 202123 No Altitude Reporting	10/10/21 1630 N600MH Deadhorse Today 10/10/21 approximately 16:30 pm after engine startup a CAS message (FLT Ctl B Fail) appeared. The QRH gave no guidance on clearing the fault, so maintenance suggested a complete power down and restart. This cleared the CAS Message. 10 Minutes later during climb out center called to verify our code and state no altitude reporting. While on the RNAV Z 24 approach to PASC at approximately 800 msl. We received multiple glide slope aural warnings followed by a full-scale deflection of the glide path indicator which then triggered multiple ground proximity warnings. With the runway in sight, we remained visual and landed		M. Hedlund
FIR:202124 Over Torque while slinging	10/16/2021/1020 N407PA Reef Island Pilot was bringing in the first load of propane barrels from the vessel to the Reef Island site, and believed he had enough altitude to clear the trees at the edge of the site but was too low and the propane barrels made contact with the trees. Pilot felt the contact, applied aft cyclic stopped the aircraft and checked the torque gauge. No limit was exceeded. Pilot then transitioned out the bubble window, positioned aircraft over the barrels, and pulled them up out of the trees. When transitioning back inside, pilot saw the Check Inst caution light was illuminated. Pilot reduced collective and saw the torque gauge indicated an exceedance had occurred. At this point he had the barrels so close to the deck I elected to place them there. After the crew unhooked load, the aircraft was landed on the adjacent pad. Removed M/R Head and mast assembly. Replaced mast assembly with serviceable, inspected M/R Blades, M/R heads assy, reassembled all IAW BH407MM, MOC'S completed and aircraft returned to service. <i>It is critical that we use the correct technique when conducting any operation. With your head in the bubble looking at the load, this is 100% preventable.</i>		D. Jones I. Mackey

GOR: 202106 Bad Fuel Sample	7/20/21 N312MH Fairbanks Hangar While sampling the forward and aft fuel cells, the pilot noticed excessive sediment after completion. The last sample on record in the cabinet was from 7/12/21. The aircraft had flown approximately 12 hours since the last sample. Fairbanks Lead Mechanic conducted toolbox talk on fuel sampling. Stress fuel samples in quarterly Quality & Safety Letter.		I. Mackey D. Busch
GOR: 202107 Refueling Spill	8/19/2021 N306MH Granite Point Tank Farm On the helipad at Granite Point, a passenger was helping the pilot add fuel to the aircraft with five-gallon jerry cans. While adding fuel, the "SPILL RESISTANT" nozzle dribbled fuel onto the aircraft and ground. A duckpond and diapers were deployed in response to the rest of the spill and the rest of the refueling happened without incident. The Harvest Energy representative described the spill as 1/2 cup that was spilled onto the ground. Enough that they said that they would need to dig up the contaminated soil and dispose. (Spill Awareness warning in this one. This was a half cup. Think of how small that is. For the Pipeline Company, the IMPACT reports start at "any amount")		D. Buzga
GOR: 202108 ENGINE FOD	8/5/2021 N316MH Bettles/Ambler Road During Post flight, found turbine shims on engine deck. Further inspection found 12 o'clock turbine top gearbox stud sheared off Removed 12 o'clock turbine, gearbox stud & replaced with serviceable		J. Lister
GOR:202109 Plow and Plow Truck Damage	10/6//2021/1300 2006 Chevrolet Plow Truck, Fairbanks Found damage to the RH side door...still functioning but dented on lower panel. Suspect damage occurred when plowing the ramp. need to warn plow drivers not to push too hard or accelerate into set-up. Or wet snow. A-Arms of Plow also damaged and had to be replaced <i>(In the Interior, we don't usually get this heavy type of snow. But you must be flexible. If the equipment is pushing too much weight, it's too much weight! Careful with these plow trucks!)</i>		I. Mackey

GOR: 202110 Sheet Metal Dents	11/8/2021/1730 N305MH Akutan At approximately 17:50 on 11/8/2021, during post-flight of aircraft, a dent was discovered in the skin of aircraft N305MH below the pilot's door, around STA 38 where the skin slopes to form the belly of the aircraft. The dent is about 1 inch wide and 1/8 inch deep, and appears to be non-perforating with no cracks or tears. This was not previously noted by the pilot or mechanic during pre-flight or daily operations, and the pilot did not experience any events during flight that would cause suspicion of damage. Corrective action will be sanding the affected area to remove damaged/flaked paint and repainting the area to avoid corrosion. Damage will be readdressed at next major maintenance.		S. Slade
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FIRs/GORs for 4rth Quarter 2021

FIR: 202125 Hot Start	7/15/2021/1030 N306MH B206L3 Pilot /Homer hot started aircraft; exceeded 10 seconds transient. Overtemp insp. performed. Burner replaced due to nozzle wear. More adjustments completed, did multiple starts. Start sequence good per pilot 306MH - 7/16/21 - Pilot Batt Cart 1st start really cool. Next start of acft Batt good. Acft flies then complains the next start was warm. Aborts 4th start. Completes 5th start with no issues. Aircraft started hot again. Asst. Chief Pilot confirmed. Adjusted until starting correct. Restarted cold, Pilot started while Eng. hot, starts were confirmed by both to be good. <i>(If the gauge says too hot, its too hot. Abort the start before it becomes an issue. We'll fix it!)</i>		S. Slade
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FIR 202129 Generator Faults	12/24/2021/1230 N600MH PASC - PAAD After starting engines, I was unable to select R gen on. Generator display would indicate over voltage or correct voltage with no amps. We terminated the flight after discussing with maintenance Mission included Cargo and planned PTEP. No PAX onboard. 1. Replaced #2 gen control relay (K2), ops check unsatisfactory - after changing relay noticed RCR chattering 2. Replaced #2 Reverse current relay - Gen #2 observed to be overvoltage and will not load share amperage. #1 gen at 27.5 Vdc and 101 amps, #2 Gen at 30.2 Vdc and zero amps. 3. Started engines to parallel voltage regulators, #1 generator would not come online, and #2 generator would not come online. Both generators offline. 4. Replaced bus tie relay with no effect 5. Replaced r/h starter/generator with no effect. 6: Performed engine run, left generator function was normal, right generator was at 29 volts with no amps 7. Swapped #1 and #2 RCR's - Gen 2 29 volts, producing what appeared to be normal (did not take value) amperage. Gen 1 produced 28.5 volts and no amperage. The problem followed the reverse current relays. Left the known good RCR in the #2 spot 8. Replaced #1 reverse current relay both generators came online. I started looking at the overvolt as being caused by the RCR kicking offline and unloading the generator, rather than the system overvolting, and kicking the RCR offline. Once I started looking at that part of the diagram and shooting wires, I knew which components to begin looking at, and found the bad solder joint on the generator switch. <i>(Glad it's finally fixed!)</i>	M. Hedlund

FIR 202130 Chilly Aircraft	12/25/2021 N316 Bell 206L4 N316MH is a regular replacement for N314MH at Pump Station 5 which normally occurs in the winter months. N316MH does not have an Arctic Heater Kit installed. Customers continually complain of the lack of heat especially when in the rear seating area. These customers are briefed to wear their full arctic gear in the rear compartment so to stay warm. The Pilot has issues with the wind screens icing up due to the lack of heat coming from the defrost system. The occurrence of the wind screen icing up is really pronounced when the temperatures are in the -10 and above ranges. This issue has been brought up to maintenance leadership and operations numerous times over the past years. <i>(Under Review: Yes, we know that 316MH doesn't have the best heater)</i>		S. Slade
202131 Torque gauge shows exceedance	11/23/2021 N312MH Bell 407 Departed PS4 with 1 pax, 950# fuel, 100# Cargo, Gross wt: 4700#. Wx: Clear, Temp: -30F. Approximately 3 minutes after departure, while in cruise at 100kts/70%tq, check instrument light came on. Torque gauge showed flashing bars and number readout was showing erratic indications with 'E' indication. All other instruments showed normal operation and there was no indication of abnormal conditions. Turned around to return to PS4. Enroute to PS4, Torque gauge indications returned to normal with continued 'E' displayed. After landing and informing mechanic, instrument check indicated an exceedance of 134.1%. Connected laptop, showed Torque exceedance of 134.1%, and an additional exceedance of 121.5% when the helicopter was not running. Mechanic cleared exceedance indication. Mechanic was unable to find a cause. A maintenance flight was performed after inspecting the aircraft. Issue could not be duplicated. Turned over to maintenance for continuing diagnostics. <i>(a good example of how one inadvertent instrument reading can cause us a lot of work! Kudos to the crew for being thorough)</i>		I. Mackey
FIR: 202132 Gauge shows exceedance. Inadvertent use of transient torque	11/8/2021/1130 N407RH Bell 407 During flight to alternate LZ from initial attempt at Far Mountain, aircraft tried landing at Fox Relay. Visibility was approximately 2-3 miles and temperature was approx. -24C. While climbing up to Fox Relay summit (approx. 4,800 feet) and COMM site, aircraft windscreen started to ice. Pilot immediately turned the aircraft out of the icing and while turning, the Check Instrument light lit momentarily with an E in the Temperature gauge. Exceedance on gauge said 780 degrees upon shutdown (transient range). Aircraft was returned to base at MTF, and maintenance was alerted to possible use of temp. transient. Write-up was placed in logbook. Engine computer downloaded engine record with no exceedances of temp, torque, nor NG. Aircraft was returned to service. Icing was light <i>(A few comments here since this was my incident. The 20/20 hindsight</i>		I. Mackey

	<i>on this one is that when you are creeping up a mountain side with low visibility, instead of continuing at high torque with possible icing, the best bet would be to turn back around and go home. The other point is, that just because it is -24C, that doesn't mean that VFR icing isn't a real possibility. I've flown up here since 1994 and usually those lower temps mean that the icing won't be there. But in this case, the icing was there and it showed up very quickly. The windscreen would have easily been covered if I had continued up the hill.)</i>		
GOR:202114 Turbine Dents	11/11/2021 N306MH Bell 206L3 2,000 hr. inspection Found 2 large dents with cracks on the exhaust section of the turbine while removing the turbine for 2000hr. insp. The dents/cracks were under the fire shield.  <i>(cracks in an area we don't look at enough)</i>		
GOR 202115 Winter Driving Accident	11/24/2021 Dodge Truck 3C6UDS5oL2cg131642 New mechanic with very little time driving in the snow was driving the company, Dodge work truck by the Walmart in Fairbanks. He was merging into a turning lane for a left-hand turn and did not slow down enough, locked up brakes and hit the vehicle ahead of him. Police report number 2021-090736. Company truck will be fixed by Maritime in Fairbanks. Claim will be filed for vehicle which was struck. No injuries from this incident. <i>(Please see my mention of drivers training and some nice YouTube videos regarding winter driving, later in this letter)</i>		
GOR 202116 Fuel Tank in Delta Runs DRY	Delta Fuel Skid Fuel Tank in Delta was out of gas and the GRB aircraft had to come back to Fairbanks to refuel at the end of the Alyeska CMC flight day (no delay to customer). Column was added to the daily fuel status sheet for those using our fuel sites to subtract their fuel from the tank total. Seems to be working. <i>(regular, weekly fuel skid inspections MUST, MUST, MUST be done!)</i>		
GOR 202117 Company Truck Accident	Chevy Silverado Pickup (surprised it can even run) License number GKD404 Road Conditions Ice and Snow Road Lighting: Dark unlit Driving east along Ciechanski Rd Employee had turned on to Bridge Access Rd toward Kenai from Kalifornski Beach Rd. Driving about 40		

	to 50mph he noticed the road curving to the left up ahead. Thinking the road to be Bridge Access Rd and relatively straight he eased off the accelerator and prepared to navigate the curve. As he approached farther to the curve, he realized it was a sharp 90 degree corner and applied the brakes realizing he was travelling too fast to successfully navigate the turn. Driver skidded through a small snow berm sideways down off the road and the vehicle rolling onto its roof. Filed under company insurance and awaiting vehicle status		
GOR 202118 Transmission Oil Leak upon Shutdown	11/21/2021/1530 Bell 407 N407RH During Shutdown after a 1.4-hour customer flight, heavy drip of oil was noticed from the XMSN deck on postflight. Cowlings were opened and a large amount of XMSN oil was on the XMSN deck. Write-up was placed in logbook and maintenance notified Oil line was discovered to be loose from annual maintenance. <i>(loose lines and B-nuts are easily checked on daily inspection and preflight. Please continue to check!)</i>		

Vehicle Accidents/Incidents

Since the start of winter, we have had two aircraft incidents involving slippery roads/winter driving. We've gotten off easy since nobody was hurt! But winter driving is hard, even if you have done it before. PLEASE slow down and take control of your driving. As I write this, the roads around Fairbanks have at least two inches of solid ice on them. I drive in from North Pole each day at about 48 MPH and there are still people driving to drive 70 MPH in the left lane which is arguably worse on the ice and snow. If 48 mph seems too fast for conditions, slow down to 41 mph or 38 mph or whatever speed gets you to your destination safely.

When it comes right down to it, speed doesn't get you to work on time. Advanced preparation and leaving in time gets you to work on time. I'm about 16 miles from Maritime, so if all that was enroute time, that would be 17 minutes and 27 seconds to get to work at 55 MPH. If I only could do 40 MPH, it would take just 24 minutes. **Six minutes and 33 seconds more than the posted speed limit!!**

So you see the point I am making here. If you find you are going to be late because you left only 17 ½ minutes for work in the snow and ice? Go ahead and take your lumps and be late. And then leave 7 minutes earlier tomorrow.

I'm looking at some places in Fairbanks for a big icy parking lot or practice space for those whom haven't driven in Alaska conditions before...In the meantime, here are a couple of winter driving videos...

<https://www.youtube.com/watch?v=TZQXuWzBC18>

(copy and paste to browser)

Audits coming up from Star Aviation (for our insurer), ConocoPhillips and more! I'll be taking an annual look at the Homer base, during the week of the 7th of Feb. Everyone keep on your toes and make sure your work areas are spotless. (my desk does not count in that alert).

See You Soon,

Dennis

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AND DON'T BE THIS GUY!



**MARITIME HELICOPTERS
PUBLICATIONS
ROUTING MEMORANDUM**

DATE: 01/26/22

TO: All Employees

FROM: Quality & Safety department

SUBJECT: 3rd & 4th quarter Safety

Please complete the verification of receipt below and return this form to the Records Department in Fairbanks via email to faiaadmin@maritimehelicopters.com or by fax to (907)452-4539

BY SIGNING THIS FORM I ACKNOWLEDGE I have reviewed and will comply with the memo listed above

EMPLOYEE SIGNATURE

DATE



01/26/2022


