



Maritime Helicopters

Summer 2020 Quality & Safety Notes



Summer 2020

What a strange summer. There, I said it. From SARS-CoV-2 and all that fallout, including much less drilling for oil in our rich state, to one of the lowest wildfire risk levels that anyone can remember, this has been a strange summer season. From the Q&S Desk, I think that while flying activity is less, the auditors are having a field day. We've had visits from quite a few customers, as well as getting used to a bigger internal audit profile for ourselves, (e.g. the addition of our Prudhoe Bay/Twin Otter airplane hangar). There is a lot of information in this letter this month, which might make you think that the sky is falling. We have more safety training going on with ThinkHR classes on most OSHA subjects and we are dealing with corrective actions from a lot of audits. But I think we are in a much better place this year than just one year ago.

If anyone has a finding on their monthly iAuditor station inspection and corrective action isn't happening quickly, *I'm* taking calls right here as employees are making their work areas better. From spill kits, to the fuel systems, to fire extinguishers, we are identifying problems and fixing them. So thank you all.

As far as the strange weather with more non-flying days than I can remember due to rain, hail, thunderstorms, or plagues of locusts and most likely, murder hornet swarms? I can't help. Just make sure we are making the best weather decisions possible while balancing our customer's needs with everyone's safety.

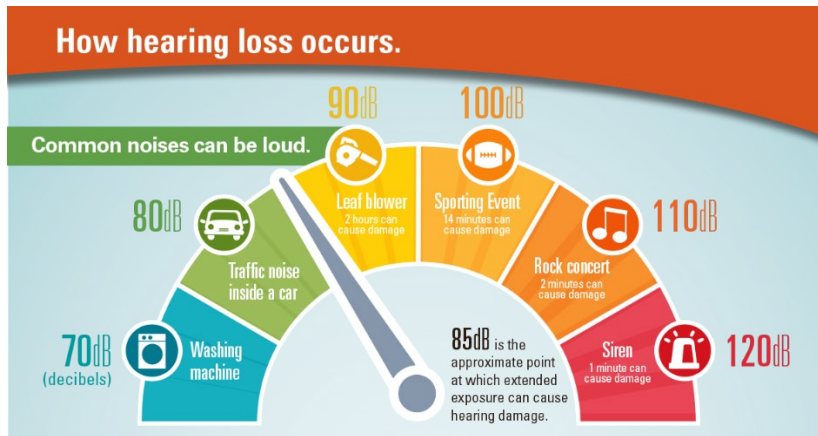
While I look forward to seeing you all soon due to a long, COVID delay to our internal audit cycles, I'm not counting my chickens. I'll see you when I see you.

Dennis



Noise, Noise, Noise

It's been a while since we've discussed hearing loss, hearing loss, and PPE in our chosen, LOUD profession. And since we've added a new noise source (another named for aircraft) we should have a quick discussion on a noisy topic. We've all seen posters like this...



So we know that at about 85 decibels, extended exposure can lead to hearing loss. Our Bell 407s will produce 97 decibels upon takeoff and are at least 85 decibels sitting on the ground at flight idle. Yes, we all wear hearing protection around the aircraft and that is good but we need to remember that to be effective, hearing protection must fit properly and you must know how to wear it. Here's a quick primer from one of the earplug manufacturers to remind you of how to fit earplugs.

How to Put In Earplugs

Worn properly an earplug like the **Howard Leight Max NRR 33** (FOAMIES) can be used in noise up to 110 dB(A). 110 dB is roughly equivalent to someone blowing a whistle a few feet from your ear. Aside from being extremely irritating, it's very dangerous for your ear. 120dB is typically recognized as the pain threshold and the point where damage to your ear can happen very quickly.

On their website, the Howard Leight company writes that the best earplug is the one that is worn properly, and we might add comfortably. We've found over the years that safety equipment that is comfortable and easy to wear is more likely to be used than alternates that are cumbersome or irritating.

To help you wear your ear plugs both comfortably and properly, we've taken a couple pictures to demonstrate the proper technique.



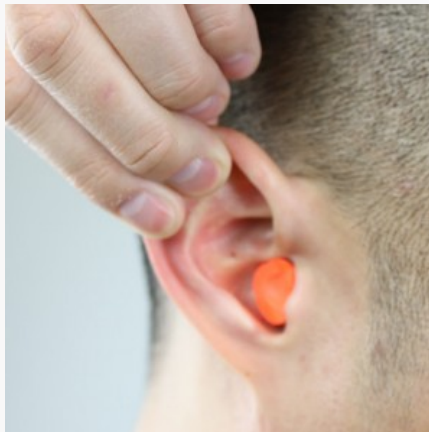
To properly fit an earplug, here are a couple of easy to use tips that will make it easier and more effective.



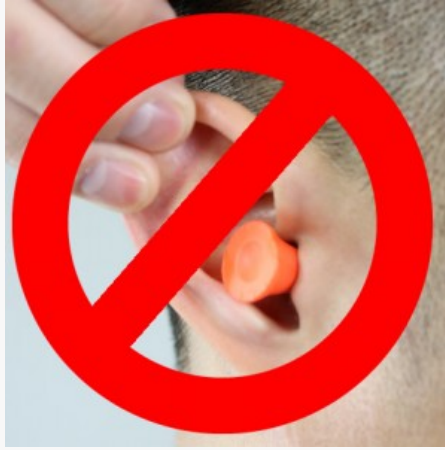
Roll the ear plug with clean hands into as narrow a tube as you can.



Reach over your head with your free hand and pull your ear gently up and slightly out to help open up the ear canal.



Insert the rolled up earplug with a slight turning motion until it is well inside your ear canal. The entire length of the plug should fit inside the ear with only a small amount protruding. (See photos). Hold the ear plug gently in place for 30-40 seconds as the foam expands so it doesn't work its way out.



If the ear plug doesn't seem to fit properly, remove it and try again. If you are new to wearing ear plugs, there is a natural tendency to only put a small amount of the plug into the canal. These soft earplugs will not damage the ear, and are made to be fit deeper and to expand fully to best protect your hearing.

I find that most people don't know about the "pull up your ear with the opposite hand to expand your ear canal" thing.

Of course, if you have well-fitting earmuff type hearing protectors, that would be better than earplugs. And earmuffs AND earplugs are even better.

And now, what you've all been breathlessly waiting for! The newly tested sound levels of the new Maritime Twin Otter, answering the question, "Is the airplane loud?" (spoiler alert: yes, it's loud).

I did some testing with the decibel meter and found the following: When the Twin Otter has one engine started, it seems to throw out a mild 67 decibels. With two engines started it is at 79 decibels. That's INSIDE the cabin! When you are outside those numbers are both about 80-85 decibels.

During cruise flight, I measured about 90 decibels inside the cabin. But I passed up my magic sound meter to the pilots and they measured 103dB in the cockpit area.

To summarize the summary of the morale of this story. If you are around the Twin Otter while it is running, you'd better have your hearing protection on.

(Last minute add on to this story. The Bell 412 is MUCH louder. I had the dB Meter out the other day on the ramp and at flight idle, within about thirty yards of the aircraft, I saw numbers between 110 and 120dB.)

Emergency Response Exercise and Planning Update

First of all, let me get the Emergency Pocket Checklist info out of the way. We are now on Revision 24 and the color we are printing the EPC on is **blue!**

All right, calm down...Not too much excitement all at once.

On July 15th, we exercised the newest Emergency Response Plan for Deadhorse, Alaska with the Twin Otter Team, Exxon personnel and Management participation from Homer.

The scenario was that the Twin Otter was on the ground at Point Thomson, where it had to return due to an engine fire. The aircraft was shut down on the runway and left there while the notional passengers and crew evacuated the aircraft.

Like all Emergency Exercises, the execution of this one asked more questions than were presented by the simple scenario. Can you move the aircraft immediately to clear the runway? Will the National Transportation Safety Board weigh in on that issue? Will there be assets at Point Thomson to move a crippled aircraft?

Lots of questions to answer. But on the plus side of this exercise, the fixed wing crews did a great job of starting a running log of events and phone calls right at the start of the hypothetical incident. Everyone participated including the Director of Operations, Director of Maintenance, and managers from Exxon who was the customer in the scenario.

As a company, we will be having more and more of these Emergency Response Exercises so its good to mentally practice how we would react if we were the employee on duty when an incident happens.

Cotton Still Kills!

I need to mention a quick correction in the ThinkHR, Cold Weather Survival Class. When that class talks about warm fibers for clothing in cold weather, it mentions cotton and wool. Yes, wool is a great insulator. But cotton? Noooooooooooooooooo! Don't even think that! I've taught the "cotton kills" class for many years. And most Alaskans already know this. I'll include an article link if you don't believe me, but cotton fibers are perfect for trapping water, not trapping air. And it is air which insulates. <https://gizmodo.com/why-cotton-kills-a-technical-explanation-1688286083>

Take a minute to read this and I won't have to bore everyone with another class this winter!

Other ThinkHR Topics

We're still getting a great response from people completing their ThinkHR classes. These classes meet a lot of government/OSHA requirements and customer requirements too. We'll be adding a class on Scissor Lift Safety soon. The question was asked for a while, "how will inspections and maintenance be done on the Twin Otter Tail assembly as it sits about 19 feet in the air?" Well, our friends at the Deadhorse Aviation Center have a scissor lift for us to use. But we'll have to get this prescribed training in safety and this class of powered trucks. If you're at Deadhorse or Fairbanks, check soon for this online class.



Recent Audit Findings

With the volume of internal and external audits seemingly happening non-stop, we are bound to have findings and issues. Some are easily corrected: Fixed wing tires need to be stored vertically and covered against UV light as well as ozone gas which is produced by artificial lighting...who knew?

Other findings include the process of us putting in place, a Flight Data Monitoring System for the Twin Otter. These types of findings are not a "strike" against anyone and mostly involve the growing pains of installing a new system.

In general, the greatest number of our findings have to do with normal housekeeping items around the hangars. Our tool control procedures can always use a second set of eyes and better attention to detail. Some of our shelf life items don't get labelled properly (grease tubes) or aren't caught on monthly iAuditor inspections as being expired.

One finding was somewhat surprising. One auditor found that our spill kits need to have "tamper proof seals" so that items are always available in prescribed quantities in case of an actual spill. I disagree with this finding and here is why: Those spill kits are made to be **used**. Spill kits are not museum pieces. Please use those absorbent material in the spill kits as necessary for ordinary spills! If an aircraft has a fuel drain stay open and leak a few gallons in the hangar or on the ramp, those 3" by 4' absorbent socks are perfect for cleanup or "channeling" of a spill. Then, if you have used these materials, talk to Ashley or Julie, and get them replaced in the spill kit. I have added an item to the monthly iAuditor to check the inventory on the spill kit to make sure items are not going un-replenished! The spill kit inventories should be affixed to the spill kit drums.

The last finding we can talk about is that of logbook corrections. If you must make a correction to an entry in the aircraft logbook, please make a single line-through of the incorrect entry, correct the entry, and then sign your initials next to the corrected entry. This is a repeat finding which we must do better at.

Safety Data Sheet of the Quarter

Sometimes we use a product for years, like plain old penetrating oil, and we might not realize what a hazard we have in front of us (or on our hands!) AEROKROIL and other solvent-type penetrating oils can do exactly what they say...they can penetrate materials. As such, they need to be treated with respect. A quick check on our 3E Verisk account finds the following



Product Name: AEROKROIL Product Use: Penetrant/Lubricant for Industrial Use

Danger!



Flammable aerosol.

Contains gas under pressure; may explode if heated. Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

May be fatal if swallowed and enters airways.

May cause drowsiness or dizziness.

SECTION 4: FIRST AID MEASURES

Eye: Rinse thoroughly with water for several holding the eye lids open to be sure the material is washed out. Get medical attention if irritation develops or persists.

Skin: Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation or symptoms of exposure develop. Launder clothing before re-use.

Inhalation: Remove victim to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention if symptoms develop.

Ingestion: DO NOT induce vomiting. Keep the victim calm and warm. Never give anything by mouth to an unconscious or drowsy person. Get immediate medical attention.

Most important symptoms and effects, acute and delayed: May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects such as headache, dizziness, nausea and vomiting. Harmful or fatal if swallowed. Aspiration into the lungs during ingestion or vomiting may cause lung damage. May cause an allergic skin reaction.

Indication of immediate medical attention and special treatment, if needed: If swallowed, get immediate medical attention.

Appropriate Engineering Controls: Use with adequate general or local exhaust ventilation to maintain concentrations below the occupational exposure limits. Use explosion proof electrical equipment and wiring where required.

Personal Protective Equipment:

Respiratory Protection: If the exposure limits listed above are exceeded, a NIOSH approved respirator with

AEROKROIL
11/20/2019

organic vapor cartridges may be used. For higher exposures, a supplied air respirator may be required. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Hand protection: Impervious gloves are recommended when needed to avoid skin contact.

Eye Protection: Chemical safety goggles recommended.

Skin Protection: Impervious clothing as required to prevent skin contact and contamination of personal clothing.

Hygiene measures: Suitable eye wash and washing facilities should be available in the work area.



I know that "back on the farm" we used LPQ (liquid penetrating oil) with reckless abandon to break loose old hardware...probably should have been wearing more than cotton 'Farmer John' gloves. Please go to

<https://www.3eonline.com/> and sign in for more information.

FIRs/GORs For Second Quarter (plus) 2020

FIR 202011 4/22/20201600 BO 105, 326MH

Enroute to the Valdez Marine Terminal (VMT) the INT/TR XMSN (CHIP) light illuminated. Pilot activated the Chip Pulse Switch and the light went out. Pilot continued flight to the VMT. While in an OGE hover at the VMT the INT/TR XMSN light flickered then came on steady. Pilot Informed the customer and returning to PAVD. The entire flight was 0.2hrs.

Flushed both the tail rotor and the Intermediate gear boxes with new oil 2 times. Some fine fuzz limited accumulation on both chip plugs, indicating normal wear. Completed ground run, leak checks, and maintenance flights with no defects noted.

202012 5/24/20/1130, 312MH, Bell 407

ELT activated twice while in flight. Visual indication light was intermittent. Removed ELT from aircraft. Ordering new one and MEL'ed according to MHI procedures.

202013 5/24/20/1130, 407PA, Bell 407

During the pre-start/run-up checks, the Fuel Low light came on and would not extinguish with 994 pounds of fuel on board. Reported to maintenance. Delay to customer about 1 hour.

Initiated MEL 2841-02 For Fuel Low light. Awaiting time to troubleshoot... Then during troubleshooting after flight, discovered fault with fuel signal conditioner. Removed and replaced with serviceable signal conditioner.

202014 6/09/20/0815, 306MH Bell 206L3

About 0800, pilot was preparing to take passengers to Sharaton Mountain. On first attempt, after rolling the collective to induce fuel, the engine failed to light off. Start was aborted and pilot waited 60 seconds. On the second start attempt, TOT rose rapidly after fuel introduction. After noting rapid TOT rise, the pilot aborted the start again. After waiting the 60 seconds to try the third start, engine appeared to start normally with steady TOT rise. Only apparent discrepancy was that the first "peak" was close to 829 TOT and then the second peak was in the 10 second window. Second peak was around 850. TOT was dropping and beginning to stabilize when the TOT light came on after exceeding 10 seconds above 768. Flight was aborted.

(For those who have had this happen, I wouldn't wait and count to ten. If the temp isn't falling rapidly at 5 seconds, then abort the start)

202015 6/13/2020/2215, 312MH Bell 407

XMSN chip light illuminated while advancing throttle to 100% RRPM. Pilot contacted the Chief Pilot and Lead Mechanic. All three xmsn chip detectors were removed, cleaned, and reinstalled. One small hair like particle was found on the lower xmsn chip detector. After reinstallation, the leak check was performed. No leaks were noted so 20 minute "penalty run" was performed and the chip did not illuminate again.

See 202018 and 202020 below

202016 7/6/2020/1000, 308MH Bell 407

At 0951 on 7/6/2020, An Alyeska baseline worker exited the aircraft on the ramp. When he shut the left main cabin door, the plexiglass cracked, and several pieces broke out of the window. The mechanic was on hand to assess and make a temporary fix. This allowed the aircraft to continue to support the Right of way/Deployment Spill exercise which was already in progress. The down time was negligible.

Applied Tape fix to affected window. A new part (LH Aft Slider Window) has been ordered.

202017 7/9/2020/0800, 316MH, Bell 206L4

On BLM, job; the six pin headsets were found to be missing. The Pilot, the helicopter manager and passengers decided that the flight could safely occur without the interphone system. Pilot informed the Chief Pilot. Adapters were delivered by company vehicle the next morning. Crews adjusted the plan so that the Day 2 mission was completed the first day (and vice versa) so mission was changed but not delayed.

202018 7/12/2020/0920, Bell 407 312MH

XMSN Chip light illuminated while in cruise flight at 75% torque. Pilot reversed course and then the light went out. Aircraft was returned to Fairbanks, Metro field without further chip lights

Drained transmission oil replaced oil filter w/serviceable new. Serviced with 555 oil, 20 minute found run, no recurring chips.

(see below)

202020 07/19/2020

Transmission chip light illuminated during cruse flight. Pilot notified security and returned to Alyeska Pump Station. Removed 3 each transmission chip detectors, lower chip detector had sliver that was longer than 1/8in. reinstalled chip detectors and performed 20 min penalty run. Flew aircraft back to Fairbanks. Aircraft was grounded and transmission replaced with serviceable unit. Aircraft returned to service.

(This is why we must have 100 % accountability on all chip detector incidents. At some point we must change the transmission)



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MARITIME HELICOPTERS
PUBLICATIONS
ROUTING MEMORANDUM

DATE: 08/06/20

TO: All Employees

FROM: Quality and Safety Dept

SUBJECT: Summer 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