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August 30, 2023

N19BH Tail Rotor Strike, 27 August 2023

Investigation Summary:

IAW BHSI SMSM, page 17, Chapter 6.2.1, 1., E, all incidents shall be investigated. The incident that occurred on 27 August 2023 will be formally discussed with the entire BHSI and Chemair organizations on 31 August 2023 at the Operations and Safety Meeting in order to present the facts leading to the incident, discuss actions to correct in future occurrences and to provide options to avoid this type of incident in the future. Additional steps taken during this investigation are documented herein.

Details on the incident are located on the BHSI Office 365 Hazard and Occurrence page or on the enclosed NTSB 6120_1 BHSI Signed report.

A detailed timeline of events is located in the enclosed N19BH Incident Timeline Revision 1.

Additional investigation actions:

BHSI leadership has discussed the lack of crew coordination with the MN DNR crew involved in the incident. The senior leadership experience is this event should not have happened if the crew had performed their CRM duties and provided radio or hand/arm signals to the pilot regarding landing location in relation to crew's gear. The manager on this crew has been the subject of multiple issues beginning in at least 2021, in which the BHSI leadership has provided input to the MN DNR HOS regarding his lack of capabilities to perform his duties professionally. The most recent issue with this manager occurred on 8 August 2023 with the pilot involved in this incident. 3 issues report by the pilot were presented to the MN DNR HOS as unacceptable. We believe these actions and the ability/inability of the manager contributed to the lack of CRM in this incident. Proper CRM could have prevented this incident from happening. BHSI leadership should thoroughly and proactively address this with the MN DNR leadership with the outcome being no pilot is subjected to work with this manager again.

The pilot, once notified of the tail rotor strike, shut down the aircraft. He performed an inspection and he and the MN DNR crew chose to fly the aircraft 2.2 miles to the Hibbing Tanker Base. The pilot, having not felt any contact, having not detected any control issues or RPM change, utilized experience to make a judgement call on the aircraft. His experience base is he was flying an B206L with a blade that had 2 dents in it. The leadership in his past company had instructed the tail rotor blade dents were within limits and the tail rotor was airworthy. The pilot, with a picture of that past company blade on his phone, compared the single dent on N19BH's blade to the picture and determined the aircraft to be flyable. What the pilot didn't account for is the previous aircraft he was flying had Van Horn tail rotor blades which have a different inspection criteria and damage tolerance than the Bell High Altitude tail rotor blades. Although there was reasoning applied, the reasoning was flawed. The lesson learned here that must be documented as company guidance is: pilots do not have the ability to determine airworthiness following limit exceedance or an aircraft incident and are not authorized to accept the liability of moving that aircraft. The aircraft, in a limit exceedance or any type of incident, is grounded until cleared by maintenance, company leadership or, if necessary, the NTSB. The investigation team recommends this language be incorporated into the ERP as written, controlling guidance.



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The purpose of any investigation is not to assign blame, but to look for ways to prevent further occurrences of the same incident. Anyone that has tried to land a bucket on a long line during a proficiency with the crew's gear is at the landing site, is aware that as you descend it is nearly impossible to keep the longline between your skids and to judge where the crew's gear is located. The best control measure to prevent contacting the crew's gear is positive CRM, communications with the crew helping you to obtain situational awareness of your location with respect to the gear. However, as this incident demonstrated, should this positive CRM not be available, here are three options pilots have to avoid this hazard:

1. Set the bucket on the ground, lower the aircraft to a lower height, and completely release the longline from the aircraft. At this point the pilot can perform a go around and approach to the landing site with full site of the gear location.
2. If the LZ location is large enough and free of obstacles, the pilot can place the bucket on the ground closer to the landing site and at a safe altitude, proceed backwards until sight of the gear is obtained. At that point the pilot should radio the crew to assist with management of the long line to ensure it remains tight and between the skids as the approach and landing are completed.
3. If the area supports multiple suitable landing sites, the pilot can choose to place the bucket on the ground by the gear and land to the rear of that location.

It is important to also note the pilot is responsible for the landing site. If the landing site, due to vegetation, slope or confinement is not suitable, abort the landing and recon for a suitable landing site.

Recommendations:

1. The pilot has not yet conducted his semi-annual IIMC and auto training. During this training we recommend the Chief Pilot review landing site selection and conduct a demonstration of the three options listed above.
2. BHSI leadership have a conversation with MN DNR leadership regarding CRM and the inability of the manager involved.
3. Incorporate aircraft grounding language into the ERP.
4. Share this report with all employees of BHSI and Chemair.

Todd A. Kubista
Director of Operations, Safety Officer

Enclosures