AAIB Report: Rotorway Executive 162F (G-JDHN), Loud noise from the engine, autorotation, rollover on touchdown

News story

The helicopter may have experienced a build-up of unburnt fuel in the exhaust system, which ignited while in flight, near Ledbury, Herefordshire, 2 April 2021.

The helicopter, a Rotorway Executive 162F (G-JDHN), was in a stable cruise when the pilot heard a very loud noise which may have been caused by unburnt fuel igniting in the exhaust. This resulted in the helicopter reacting in a way that the pilot could not rationalise in the short time available, so he successfully autorotated to land in a field. At the end of the ground run, the left skid caught on uneven ground and the helicopter rolled over onto its left side. Both the pilot and passenger managed to escape with minor injuries.

It is suspected that defects in the cylinder 3 exhaust valve sealing may have been the cause of unburnt fuel in the exhaust system

Read the report.

Media enquiries call: 01932 440015 or 07814 812293

Published 7 July 2022

AAIB Report: Modified Piper PA-46-350P (G-HYZA), Loss of power from hydrogen fuel cells to the electrical propulsion system while undertaking an experimental flight.

News story

During an experimental flight of an aircraft with an electrical propulsion system, with electrical power from hydrogen fuel cells, it experienced a loss of power to the electrical motors. A forced landing was carried out close to Cranfield airfield in Bedfordshire on 29 April 2021.

During an experimental flight near Cranfield Airport of a modified Piper PA-46-350P (G-HYZA), an electrically powered aircraft with electrical power from hydrogen fuel cells, suffered a loss of power to the electrical motors. This meant a forced landing was carried out, which severely damaged the aircraft, the crew were unharmed.

The loss of power occurred during an interruption of the power supply when, as part of the test procedure, the battery was selected to OFF with the intention of leaving the electrical motors solely powered by the hydrogen fuel cell. During this interruption, the windmilling propeller on the aircraft generated voltage that was high enough to operate the inverter protection system. This then locked out the power to the motors and the pilot and observer were unable to reset the system and restore electrical power.

A number of factors contributed to the accident:

- Sufficient ground testing had not been carried out to determine the effect of the back voltage from a windmilling propellor on the inverter protection system.

- The emergency procedure to clear an inverter lock out after the protection system operated was ineffective.

- An investigation had not been carried out into a previous loss of power resulting from an inverter lock out, which occurred three flights prior to the accident flight.

- The risk assessment had not been reviewed following the loss of propulsion on two previous flights.

- Ad hoc changes were made to the flight test plan, including the position where the electrical power source was switched, without the knowledge of the competent person.

- The competent person's involvement was restricted in a number of areas due to issues within the organisational relationships, the fast tempo of the project, other work commitments and restrictions from the COVID-19 pandemic.

- The operator's chief executive and the flight test director took on the day-to-day management responsibility for much of the programme. However neither individual had the necessary safety and flight test experience for that role and their focus was primarily on meeting key project targets.

Five Safety Recommendations are made, and the operator has also taken Safety Action to address a number of findings from the accident.

Read the report.

Media enquiries call: 01932 440015 or 07814 812293

Published 7 July 2022

Inspection Report Published: An inspection of the Global Positioning System (GPS) electronic monitoring of

Foreign National Offenders, March – April 2022

News story

This inspection examined the Global Positioning System (GPS) electronic monitoring of Foreign National Offenders, with a particular focus on the processing and flow of information through the Electronic Monitoring Hub from September 2021 to March 2022.

Publishing the report, David Neal said:

> I welcome the publication of this report, which looks at the Home Office's introduction of GPS electronic monitoring ('tagging') of Foreign National Offenders (FNOs) following the introduction of the Home Secretary's duty in August 2021.
>
> The purpose of tagging is to reduce absconding and increase the number of FNOs removed. This inspection found that the service is still in the first 6 months of roll out and so cannot yet demonstrate it is achieving these aims.
>
> The Home Office's Electronic Monitoring Hub (the 'Hub') had a positive workplace culture and were a strong team, but their efforts were blunted by cumbersome and overlong recruitment processes, and an underestimation of the scale of legal challenge. Staffing shortfalls resulted in delays to the 3-monthly reviews of those who are on a tag and a lack of use of formal sanctions for breaches, which threatens to undermine the effectiveness of the whole programme.
>
> The Hub needs to have a clear plan for what can be achieved as the Home Office expands its use of electronic

monitoring, including the delayed introduction of non-fitted devices, which is a key part of its strategy. A comprehensive training package for both existing and new staff, alongside the implementation of quality assurance processes and more effective performance management of the supplier, are required to help drive continuous improvement.

Further work is also needed to develop robust and assured data. Currently, there are inconsistencies in data across the Hub's areas of activity, and no data quality framework is in place to ensure that information (including sensitive details of FNO movements) is being properly managed.

I made five recommendations in this report. I am pleased that the Home Office accepted all of these recommendations in full and that work is already underway to tackle the issues raised.

Published 7 July 2022

A reminder about mooring deck safety

News story

We are taking the opportunity during this Maritime Safety Week to raise awareness of essential components for safer mooring operations.

Parted mooring line

Over the years, MAIB has seen many incidents where seafarers have been struck

by mooring lines, unfortunately in some cases resulting in serious injury or death. Our Annual Report recently highlighted that such incidents continue to occur despite well published guidance on the subject. Even though there have been many advances in technology and automation in the shipping industry, mooring decks remain a place where people need to work in proximity to heavy lines under tension and interaction is unavoidable. Therefore, it is important that the safety guidance is followed. Below, we have emphasised three key components for safer mooring operations.

Equipment

Making sure the right equipment is used and then maintained in good condition is essential to keeping safe on mooring decks. Mooring lines need to be regularly inspected to make sure that wear and tear has not degraded the line, there are no hard spots on synthetic lines and no signs of contamination by oils and greases. The lead of each mooring line needs to be considered carefully to avoid placing additional stress on the lines or introducing chafe points. Inappropriate or poorly maintained equipment has previously contributed to incidents where lines have parted or released under tension and struck crew members, therefore meticulously checking equipment for anything untoward is critical for the safety of the crew.

Planning and Briefing

Planning is important when conducting any mooring deck operations. The risk assessment and control measures should be reviewed for each new operation and planning should take account of the expected mooring configuration, paying particular attention to the potential risk of snapback. Areas where mooring deck operations take place need to be kept tidy and mooring lines should be closely monitored on all berths – this is vitally important when there is a large range of tide. Planning effectively also involves making sure that all seafarers are adequately briefed on the mooring configurations, that they know what to do, and that they are positioned on parts of the deck that are less dangerous. Enough crew should be on deck to conduct the job safely, but too many crew should be avoided as it can unnecessarily place others at risk.

Communication

Finally, crew communication is of the utmost importance when working on mooring decks, because it has the potential to be extremely hazardous if people are not able to interact clearly. Everybody involved in an operation needs to communicate effectively, but must also consider the number of circuits in use: too many voices on the same circuit can cause confusion and risk over-talking; however, using separate circuits can leave some crew in the dark. Ultimately, effective communication can be the difference between being safe and putting people at risk, therefore it is important that the mooring plan ensures that good communications can be maintained between all parties involved in the mooring operation.

For more information, head to the Code of Safe Working Practices for Merchant Seafarers (COSWP) guidance and consult your safety management system (SMS).

Published 7 July 2022

Leicestershire farmer pays over £15,000 for illegally discharging silage effluent

- Some 80 dead fish discovered while others were gasping for air
- Welby Brook was black and had a septic odour
- Silage slurry escaped through cracked wall of silo

At Leicester Magistrates' Court on Monday 4 July 2022, Roger Hobill of Grange Farm, Welby, near Melton Mowbray, pleaded guilty to causing a discharge of silage effluent which was not authorised by an environmental permit. He also admitted failing to construct an adequate silo for the storge of silage.

Hobill was fined a total of £5,608 and ordered to pay £9,787.50 costs plus a victim surcharge of £190.

The court was told that officers from the Environment Agency were first alerted to the incident when Asfordby Fishing Lakes reported the discovery of dead fish.

A water quality assessment took place and officers found elevated ammonia levels. Some 80 dead fish were also discovered made up of roach, common bream and gudgeon.

Distressed fish were also present and were intermittently gasping for air.

Officers then attended nearby Howell Lake where a drop in oxygen levels had been detected. They also visited Welby Brook which was about 1.5 kilometres upstream.

This led to the officers visiting Welby Farm where Hobill identified himself as the owner of the farm.

He said that an internal wall of his silage clamp had recently collapsed and that it may have resulted in a leakage of silage liquor onto the farmyard and into the surface drainage system.

The officers were shown the silage clamp and they saw a cracked internal wall. The silage had escaped through the cracks, onto the yard.

Slurry runoff from the open cattle pen was also present and a combination of slurry, cattle feed and silage liquor was running downhill and into the surface water drain.

A small dam had been created, but this was ineffective in stopping the flow. Water samples showed that the brook was clear and uncontaminated upstream while downstream the brook was black and had a septic odour.

The brook was black and had a septic odour

The following day, officers revisited the farm to find that heavy rain had caused further runoff contaminated with silage liquor and manure to run into the surface water drains.

The defendant told the officers that he was aware that wet silage was creating waste runoff water but there was a drain which carried it away. Hobill said that a month or so before the pollution incident he had bunded the drain and was collecting and pumping out the effluent.

After approximately 6 weeks Hobill believed that the runoff had stopped and thought the bund was still in place but never checked. It transpired that the bund had been removed – possibly by an employee or by the cattle walking over it.

A spokesperson for the Environment Agency said:

> This pollution case was entirely preventable and shows that our officers will seek out farmers who ignore the regulations.
>
> This case has resulted in unacceptable pollution of a local brook, causing significant harm to fish and other aquatic wildlife.
>
> If anyone is concerned about pollution or an environmental incident, they should call our 24/7 incident hotline on 0800 80 70 60.

Between 9 June 2019 and 11 July 2019, Roger Hobill, at Welby Grange Farm, Welby Road, Welby, Melton Mowbray, Leicestershire caused a water discharge activity, namely a discharge of silage effluent into the Welby Brook, which was not authorised by an Environment Permit, contrary to regulations 12(1)(b) 38(1) of the Environmental Permitting Regulations 2016

On or before the 9 June 2019, Roger Hobill failed to comply with Regulation 3 of the Water Resources (control of pollution) (Silage, Slurry, and Agricultural Fuel Oil) (England) Regulations 2010 in that he failed to satisfy the requirements of schedule 1 due to inadequate construction of the silo used to store silage at Welby Grange Farm, Welby Road, Welby, Melton Mowbray, Leicestershire, contrary to Regulation 10(1) of the Water Resources (control of pollution) (Silage, Slurry, and Agricultural Fuel Oil) (England) Regulations 2010.