Australian Government
Australian Transport Safety Bureau

Fuel starvation event involving an Osborne Aviation OH-58A, VH-OSQ

Coffs Harbour Airport, New South Wales, 17 April 2014

ATSB Transport Safety Report
Aviation Occurrence Investigation
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Addendum

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Fuel starvation event involving an Osborne Aviation OH-58A helicopter, VH-OSQ

What happened

Damage to VH-OSQ

Source: Owner

On 17 April 2014, the pilot of an Osborne Aviation OH-58A helicopter, registered VH-OSQ, conducted a pre-flight inspection for a planned private ferry flight from Coffs Harbour to Port Macquarie, New South Wales, with one passenger.

The previous day, the pilot, who was also a licenced aircraft maintenance engineer, completed a 50-hourly inspection on the helicopter and replaced the battery. During the inspection, the pilot noted that the engine oil level indicated slightly below full. However, to obtain an accurate oil quantity, the level needed to be checked within 45 minutes of shutting down the engine, so he planned to run the engine the next morning and recheck the oil level prior to departure.

At about 0700, the pilot and passenger boarded the helicopter and the pilot conducted the pre-start checks and started the engine. He carried out the after-start checks and confirmed all engine indications were normal, and ran the engine for about 10 minutes to recharge the new battery following start-up. He then shut the helicopter down, conducted the shut-down checks and the pilot and passenger exited. The pilot then rechecked the oil quantity, which still indicated about 0.5 L low, and he added that quantity of oil. After a brief return to the terminal building, the pilot and passenger reboarded the helicopter.

The pilot selected the master switch on, confirmed all indications were normal and started the engine. However, he had omitted to complete the pre-start checklist, in particular to select the fuel valve to ‘ON’. The pilot lifted the helicopter off into the hover and obtained a clearance from air traffic control. The pilot commenced the transition to forward flight and, at about 35 ft above ground level, heard the turbine engine wind down, the red ENGINE OUT warning light illuminated and the helicopter descended in an autorotation.

The pilot attempted to run the helicopter onto the ground, however, the helicopter touched down on soft grass and the landing skids detached. The helicopter then pitched forwards and the pilot pulled the cyclic[1] control back, resulting in the main rotor blades severing the tail boom and the helicopter landed heavily. The pilot immediately exited the helicopter to confirm that the fuel bladder was intact and that there was no fire, then re-entered the cockpit and shut off the switches. He then observed that the fuel valve was selected to ‘OFF’.

The helicopter was substantially damaged (Figure 1), the pilot sustained serious injury and the passenger was uninjured.

[1] The cyclic pitch control, or cyclic, is a primary flight control that allows the pilot to fly the helicopter in any direction of travel: forward, rearward, left and right.

Figure 1: Damage to VH-OSQ

Source: Owner

Safety message

The pilot reported that this incident provided a reminder of the effect a change in routine can have, particularly on completing checklists. Research conducted by the ATSB found that distractions, or a change in routine, were an everyday part of flying and that pilots generally responded quickly and efficiently. The report, *Dangerous Distraction: An examination of accidents and incidents involving pilot distraction in Australia between 1997 and 2004* is available at: www.atsb.gov.au/publications/2005/distraction_report.aspx.

General details

Occurrence details

Date and time:	17 April 2014 – 0655 EST	
Occurrence category:	Accident	
Primary occurrence type:	Fuel starvation	
Location:	Coffs Harbour Airport, New South Wales	
	Latitude: 30° 19.23' S	Longitude: 153° 06.98' E

Helicopter details

Manufacturer and model:	Osborne Aviation Services OH-58A	
Registration:	VH-OSQ	
Serial number:	44070	
Type of operation:	Private	
Persons on board:	Crew – 1	Passengers – 1
Injuries:	Crew – 1 (Serious)	Passengers – 1 (Nil)
Damage:	Substantial	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.