Australian Government
Australian Transport Safety Bureau

Inflight fire involving a Beech 58, VH-SBS

111 km W Gove aerodrome, Northern Territory, 26 February 2014

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Aviation Occurrence Investigation
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Addendum

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Inflight fire involving a Beech 58, VH-SBS

What happened

On 26 February 2014 at about 1645 Central Standard Time (CST), a Beech 58 aircraft, registered VH-SBS, departed Darwin for Gove, Northern Territory, on a private ferry flight with a supervising pilot and pilot-in-command-under-supervision (ICUS) on board. The crew were assessing the suitability of the aircraft to be hired by their company and put on line for charter purposes. A 100-hourly inspection of the aircraft had recently been completed and there were no defects recorded on the maintenance release.

At about 1815, the pilot detected fumes and smoke emanating from within the cockpit. The pilot flying ICUS saw smoke and flames by his left leg adjacent to the circuit breaker panel. He immediately switched off the electrical master switch. The supervising pilot seated in the right seat took control of the aircraft and commenced an immediate descent. The pilot ICUS retrieved the BCF extinguisher from underneath his seat and extinguished the fire (Figure 1).

The crew opened the cockpit vents and the fumes dissipated. To determine what electrics were available and undamaged, the pilot selected the master switch on. The fire then reignited and he immediately selected the master switch off. The crew then established that the most likely cause of the fire was an electrical malfunction, and opted to continue the remaining 40 NM to Gove aerodrome, where emergency services were available on the ground if required.

The crew then observed that the vacuum gauges had ceased to function and both suction indicators showed zero. They then increased their lookout for other aircraft, cognisant that they were no longer able to maintain radio contact.

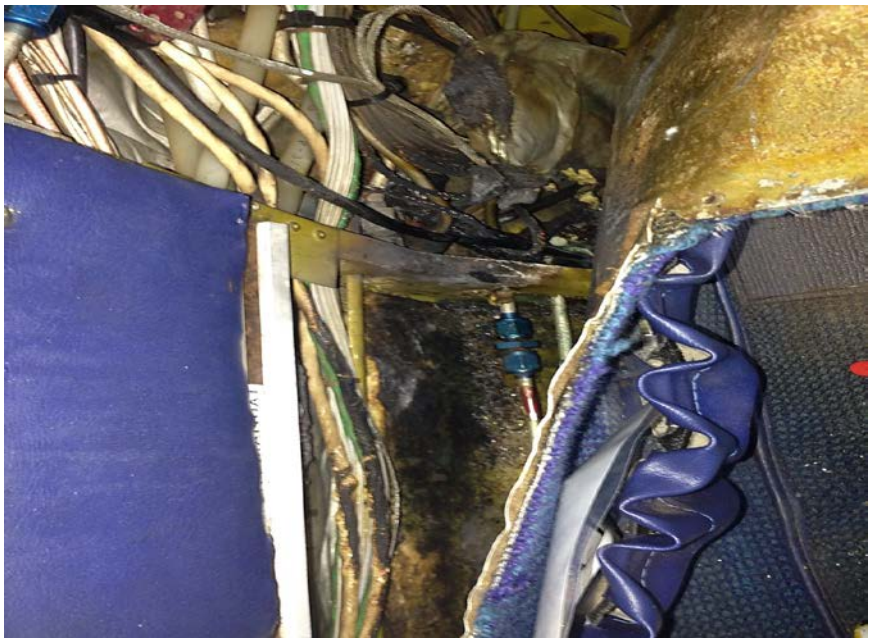
During the approach to Gove, after joining downwind for runway 31, the crew briefly selected the master switch on and used the electric gear lever to lower the landing gear, which took about 3 seconds. At that point they could smell fuel so the pilot conducted a closer circuit than normal and landed the aircraft. After parking the aircraft, the crew observed fuel dripping from beneath the aircraft fuselage, which continued after both fuel selectors had been moved to the off position.

Engineering report

An engineering inspection found that exhaust gas temperature (EGT) wiring had penetrated through the heater supply fuel line causing it to arc out and burn a hole in the fuel line. With an ignition source and fuel, the fire in the cabin was started. Engineers disconnected and capped the heater fuel line and reconnected the vacuum line.

The engineer also reported that the wires had been bundled together and were rubbing on the fuel line. Inspection of the wires prior to the flight would have required the internal panel to be removed, and was not a routine inspection item.

Figure 1: Fire damage behind the left internal panel of VH-SBS



Source: Pilot

Safety message

This incident provides a valuable reminder for all pilots to know the location and operation of the aircraft fire extinguisher. In this incident, having two pilots on board assisted in maintaining control of the aircraft and having a team approach to emergency decision making.

The pilot commented that having turned off the master switch due to suspicion of an electrical fire, it should not be switched back on again due to the risk of providing a subsequent ignition source.

General details

Occurrence details

Date and time:	26 February 2014 – 1815 CST	
Occurrence category:	Serious incident	
Primary occurrence type:	Inflight fire	
Location:	111 km W Gove aerodrome, Northern Territory	
	Latitude: 12° 11.53' S	Longitude: 135° 48.00' E

Aircraft details

Manufacturer and model:	Beech Aircraft Corporation 58	
Registration:	VH-SBS	
Serial number:	TH-366	
Type of operation:	Private	
Persons on board:	Crew – 2	Passengers – Nil
Injuries:	Crew – Nil	Passengers – Nil
Damage:	Minor	

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.