

## ACCIDENT

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| <b>Aircraft Type and Registration:</b> | Jodel D120A, G-AVLY  |
| <b>No &amp; Type of Engines:</b>       | 1 Continental Motors Corp C90-14F piston engine  |
| <b>Year of Manufacture:</b>            | 1967 (Serial no: 331)  |
| <b>Date &amp; Time (UTC):</b>          | 27 August 2021 at 0950 hrs   |
| <b>Location:</b>                       | Halwell Airfield, Devon  |
| <b>Type of Flight:</b>                 | Private  |
| <b>Persons on Board:</b>               | Crew - 1                      Passengers - None  |
| <b>Injuries:</b>                       | Crew - 1 (Minor)        Passengers - N/A   |
| <b>Nature of Damage:</b>               | Substantial damage to the airframe and engine  |
| <b>Commander's Licence:</b>            | National Private Pilot's Licence   |
| <b>Commander's Age:</b>                | 67 years   |
| <b>Commander's Flying Experience:</b>  | 463 hours (of which 207 were on type)<br>Last 90 days - 7 hours<br>Last 28 days - 4 hours      |
| <b>Information Source:</b>             | Aircraft Accident Report Form submitted by the pilot and additional enquiries made by the AAIB |

## Synopsis

Shortly after takeoff, G-AVLY's engine lost power and a successful forced landing was carried out into a nearby field. Although the aircraft was substantially damaged, the pilot, who was wearing a full harness, sustained only minor injuries. The pilot reported a potential issue with a fuel hose but other possible reasons for the loss of engine power could not be ruled out.

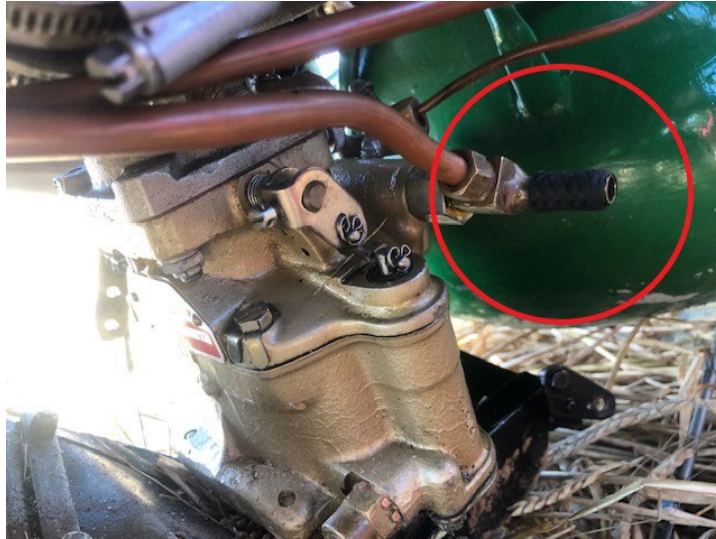
## History of the flight

A 25-hour engine service had recently been completed on G-AVLY and, two days prior to the accident, the propeller and magnetos were also replaced with reconditioned parts. A satisfactory engine run was carried out and, the day before the accident, the aircraft was flown to Dunkeswell and back with no reported problems.

On the day of the accident, the pilot planned to fly to Tatenhill Airfield, Staffordshire. After a thorough inspection of the aircraft, including a detailed check of the engine bay, he started the engine and taxied for departure. He performed an engine run-up which was normal, checking that the magnetos functioned correctly, and applied carburettor heat for 30 seconds before lining up on Runway 09 for takeoff. The takeoff progressed normally until G-AVLY began to climb away, at which point the pilot reported that the engine note suddenly changed and that the engine lost power. He successfully carried out a forced

landing into a nearby field and, although the aircraft was substantially damaged, he was wearing a full harness and sustained only minor injuries.

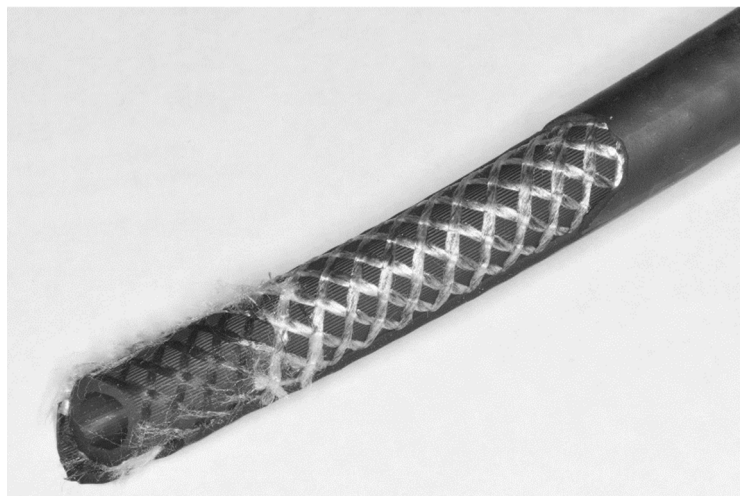
During the subsequent recovery of the aircraft, the pilot reported that when he removed the fuel delivery hose to the carburettor, the inner section of the fuel hose had remained attached to the carburettor's inlet union (Figure 1).



**Figure 1**

The inner section of the fuel hose that remained attached to the carburettor's inlet union (Image used with permission)

The fuel hose (Figure 2) is comprised of three concentric parts; an inner, fuel carrying section made of Nitrile rubber, a synthetic fibre mesh to give the whole assembly additional rigidity, and an outer Nitrile rubber sheath designed to protect the hose from external wear.



**Figure 2**

Sectioned fuel hose showing construction

The pilot reported that, as he detached the rest of the hose from the inlet union, he found that some of the fibre mesh material had bunched up against the face of the carburettor's fuel inlet, having potentially migrated through an internal split in the hose where it joined the inlet union. He considered that this may have caused a restriction in the engine's fuel flow and the subsequent loss of power. However, because the fuel hose was clamped to the inlet union, it would be difficult for a circumferential gap in the inner, fuel carrying section, to have opened wide enough to allow sufficient mesh material to migrate into the fuel flow.

The AAIB inspected the fuel hose and noted that the hose had a 6 mm internal diameter compared to the inlet union's outer diameter of 7.75 mm. This potentially explains why, after the accident, a section of the fuel hose remained attached to the inlet union when the hose was removed. The hose appeared to be quite brittle with age and examination of the aircraft's maintenance records indicated that it had probably been installed on the aircraft for several years<sup>1</sup>. It was also confirmed that the part, although designed for automotive use, was suitable for use with Avgas and Mogas, both of which G-AVLY routinely used.

Other than the fuel hose provided by the pilot, the AAIB did not examine any other parts of the aircraft and so could not exclude other possible causes for the loss of engine power.

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**Footnote**

<sup>1</sup> The last recorded maintenance in the aircraft's records, associated with the carburettor system, was on the 26 April 2010.