

ACCIDENT

Aircraft Type and Registration:	AW109SP, G-VIVE	
No & Type of Engines:	2 Pratt & Whitney Canada PW207C turboshaft engines	
Year of Manufacture:	2019 (Serial no: 22393)	
Date & Time (UTC):	4 November 2019 at 1800 hrs	
Location:	Robins Farm, Chiddingfold, Surrey	
Type of Flight:	Private	
Persons on Board:	Crew -1	Passengers -3
Injuries	Crew - None	Passengers - None
Nature of Damage:	Nose landing gear door damaged	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	45 years	
Commander's Flying Experience:	3,657 hours (of which 186 were on type) Last 90 days - 26 hours Last 28 days - 12 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The aircraft was on final approach to a rural landing site at night. During the later stages of the approach the aircraft sank below the planned approach path and struck power lines. There were no injuries and the aircraft sustained only minor damage.

History of the flight

The aircraft was conducting a passenger flight between two private landing sites. It was night-time but weather conditions were described as CAVOK¹ by the commander and so the flight was conducted in Visual Meteorological Conditions (VMC). The destination site had been surveyed in daylight and the commander was familiar with it. Photographs in the survey indicated the location of the power cables, and the approach was made on an approximately westerly heading as recommended in the site survey. Due to the rural location and the lack of cultural lighting, the commander elected to use the autopilot (AP) Visual Flight Rules (VFR) Approach Mode. The VFR Approach Mode does not ensure obstacle clearance and the pilot is therefore responsible for maintaining a safe flight path. The approach consisted of a 5° approach slope from 1,400 ft amsl down to a 'Gate' of 600 ft amsl (landing site altitude plus 300 ft) and 50 kt IAS. The intention was to fly a

Footnote

¹ CAVOK: visibility 10 km or more; no cumulonimbus or towering cumulus cloud, and no cloud below 5,000 ft or Minimum Sector Altitude (whichever is the greater); and no significant weather at or in the vicinity.

manual approach from the gate to the landing site. A vehicle had been deployed at the site to illuminate the landing area with its headlights, and another pilot was present at the site to give weather updates over the radio.

The commander stated that he would normally set a minimum altitude warning at Gate Altitude but he did not do so on this occasion. He had been informed of mist patches in the vicinity by the pilot at the landing site, and he believed that his concern over the visibility caused him to allow the aircraft to descend about 100 ft below the Gate Altitude before he took manual control. As a result, the manual approach was commenced below the planned approach path. The commander did not recognise the shallower than expected approach and did not recall hearing the radio altimeter automated height call out at 200 ft agl. He did recall being in a stable though shallow, speed-reducing descent toward his Landing Decision Point (LDP), which is defined as a height of 80 ft, groundspeed 20 kt, and rate of descent (ROD) of 200 ft/min +/-50 ft/min. In the final stages of the approach he recalled flaring the aircraft to further reduce speed to the LDP. At this point he saw and then immediately contacted domestic power cables short of the landing site.

The aircraft sank onto the cables from above at very low speed. The commander brought the aircraft to a hover, moved backwards to clear the cables and then landed. All those on board were uninjured. The commander exited through the co-pilot's door as his own door was obstructed by a length of cable which had become entangled on the aircraft. The aircraft with the cable entanglement is shown at Figure 1.

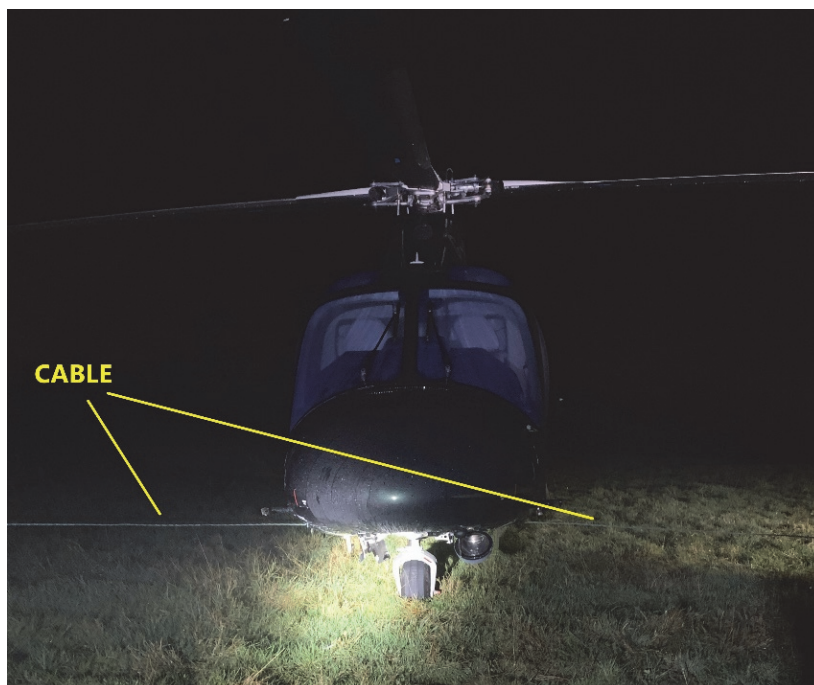


Figure1
Aircraft with cable entanglement

Incident site

The planned landing site and the aircraft actual landing site are shown at Figure 2.



Figure 2
Landing site photograph

The aircraft is parked on an approximately westerly heading which was also the heading used for the approach.

Analysis

The weather for the approach to the landing site was generally good, though a local report of mist in the vicinity caused the commander some concern. He considered that this distraction caused him to not set an altitude warning bug at his planned Gate Altitude. The transition from automatic flight to manual flight was made at a lower altitude than planned and the approach slope was thus shallower than anticipated. The site was illuminated by vehicle headlights but there was very little other cultural lighting.

It is likely the commander's attention was closely focussed on reducing speed towards the LDP while manually flying with limited external references. It is likely that this significantly increased his workload above his expectation and caused him to miss altitude cues, such as the automated height callout. Because of the lower than planned altitude, the aircraft struck the power cables at low speed, short of the planned landing area.

Conclusion

Restricted visual cues led the commander to not recognise a low approach path. The aircraft struck power cables in the undershoot of the planned approach.

CAA comment

CAP 1864, *Onshore Helicopter Review Report*², offers extensive information about onshore helicopter operations. Chapter 16 considers off-aerodrome landing sites, and there is a recommendation for:

'operators to ensure that their procedures and training material appropriately address the risks associated with off-airfield landing sites and are monitored for effectiveness.'

Flights operated under Part-NCO³ regulations, such as the flight operated by G-VIVE, were not within the scope of CAP 1864. However, the CAA commented that the recommendation would be prioritised in the production of a best practice document which would be published for use by all helicopter pilots.

Footnote

² CAP 1864, *Onshore Helicopter Review Report*. Available: <http://publicapps.caa.co.uk/docs/33/CAP1864OnshoreHelicopterReviewReport.pdf> [accessed March 2020]

³ EASA Air Operations Regulations (EU) 956/2012 Annex VII, Part NCO, applies to non-commercial flights in other than complex aircraft.