Accident

Aircraft Type and Registration:	Bristell NG5 Speed Wing, G-STEL	
No & Type of Engines:	1 Jabiru 3300A piston engine	
Year of Manufacture:	2013 (Serial no: LAA 385-15235)	
Date & Time (UTC):	20 May 2025 at 0842 hrs	
Location:	Near Gordon, Berwickshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - 1 (Fatal)	Passengers - N/A
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	Private Pilot's Licence (Aeroplanes) (Microlights Only)	
Commander's Age:	59 Years	
Commander's Flying Experience:	795 hours (of which 32 were on type) Last 90 days - 17 hours Last 28 days - 6 hours	
Information Source:	AAIB Field Investigation	

Synopsis

Shortly after takeoff from Nether Huntlywood Airfield for a planned flight to Kingsmuir Airfield, the pilot turned right and seemed to fly a pattern to attempt a landing back at the departure airfield. As he positioned the aircraft for landing, he appeared to enter cloud and lose control of the aircraft, rapidly entering a spiral descent from which he did not recover. The aircraft struck the ground, and the pilot was fatally injured.

History of the flight

On the morning of the accident the pilot arrived at Nether Huntlywood Airfield, near Gordon, Berwickshire, where the aircraft was hangered, for a flight to Kingsmuir Airfield, St. Andrews. CCTV in the hangar showed the pilot preparing the aircraft for flight, removing the covers, checking the oil and refuelling via a hand pump.

The pilot pulled the aircraft out of the hangar and finished the external checks. He started the engine and taxied for a departure from grass Runway 10.

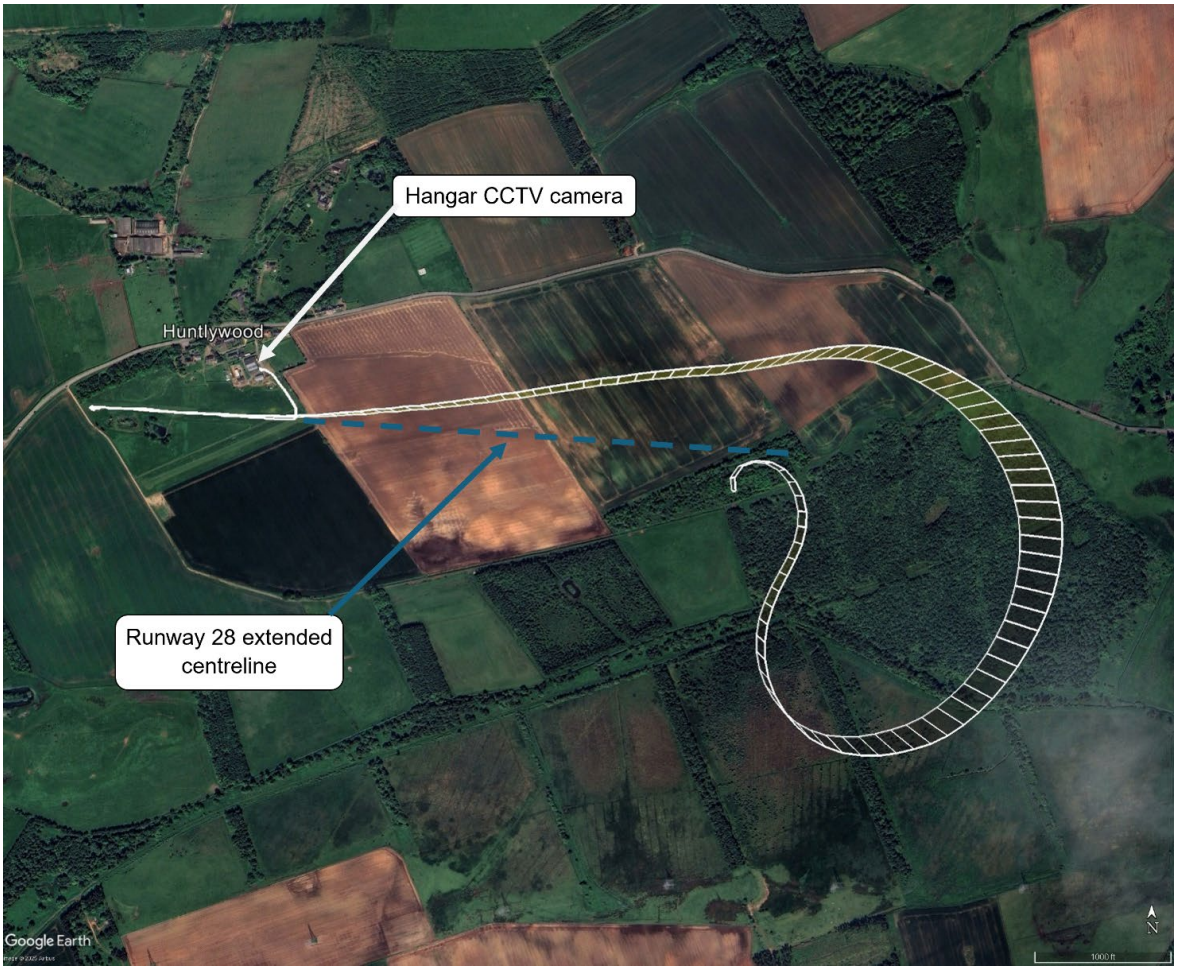

Figure 1
G-STEL flight path from GNSS data

The aircraft took off at 0840 hrs and reached a height of 610 ft aal before entering a right turn and reducing power. The right turn continued along with a descent for, what appeared to be, a landing on to the reciprocal Runway 28.

CCTV footage showed the aircraft appearing to enter cloud as it started a left turn, apparently to align with the centreline of Runway 28. The aircraft re-appeared from the cloud with a steep angle of bank to the left and a nose-down attitude. The bank angle continued to increase and the aircraft struck the ground in a steep nose-down attitude.

At 2011 hrs, the missing aircraft was reported to emergency services. The aircraft and deceased pilot were eventually located at 2111 hrs.

Aircraft information

General

The Bristell NG5 'Speed Wing', is a single-engine, all metal, low-wing aircraft with two side-by-side seats. The aircraft has a fixed tricycle undercarriage with a steerable nose-wheel.

The aircraft was fitted with a number of avionics components including a Primary Flight Display (PFD) and Engine Monitoring System (EMS), (Figure 2). In addition, a tablet was attached to the instrument panel and was known to be used with a flight planning and navigation app, which included a moving map.

Figure 2

G-STEL cockpit image (photograph used with permission)

G-STEL

The aircraft (Figure 3) was built in 2013 and had accrued about 630 flying hours at the time of the accident. It had a Jabiru 3300A, six-cylinder engine driving a two-bladed composite propeller.

Figure 3

G-STEL (photograph used with permission)

The last annual inspection was completed on 9 May 2025. Compression testing when the engine was cold[1] found that cylinder five was low (56 / 80), but the aircraft was already scheduled for routine engine maintenance[2] and the Permit to Fly was renewed until 11 May 2026. The aircraft subsequently flew three times, achieving just under six flying hours before the accident.

Recorded information

The aircraft was fitted with a number of devices which recorded data throughout the flight. This included the PFD, EMS and the tablet computer, all of which were recovered to the AAIB laboratories for download. In addition, CCTV recordings were supplied by the airfield, which recorded the pilot and aircraft in a number of locations including the hangar, taxiing areas, runway and when airborne just prior to the accident.

The PFD and EMS both had the capability to record flight data at a programmable rate of between every 1 and 60 seconds. Both devices suffered damage in the accident and were downloaded in the AAIB laboratories after repair. Both were set to record respective PFD and engine data every 10 seconds. The tablet also sustained significant damage but recordings from the flight planning and navigation app were recovered. These provided position, GNSS altitude and time recorded once per second. The recordings were combined to help determine the sequence of events leading up to the accident.

The CCTV and GNSS data confirmed the aircraft taxiing from the hangar at 0834 hrs, entering and backtracking Runway 10. One camera captured the airfield windsock which was flaccid and showed that there was no wind. Takeoff commenced at 0840:10 hrs with recorded engine rpm increasing to 2,920 rpm and the aircraft climbed straight ahead to a GNSS altitude of 1,160 ft[3] amsl (610 ft aal). The aircraft levelled, engine rpm reduced to approximately 2,190 rpm (Figure 4, Point A) and a right turn commenced (Point B).

Footnote

1 Compression testing is normally carried out when the engine is hot so that the piston rings are most effective in creating a seal. The procedure defined in the Jabiru maintenance manual states that the test should be carried out with the engine in '*warm to hot condition*'.

2 The aircraft was purchased approximately six months before the accident, and the new owners had arranged for the engine condition to be reviewed by a mechanic in the UK.

3 The tablet recorded position GNSS altitude once per second. The PFD recorded pressure altitude but only every 10 seconds. The two data sources correlated well with a maximum difference during the flight of 20 ft.

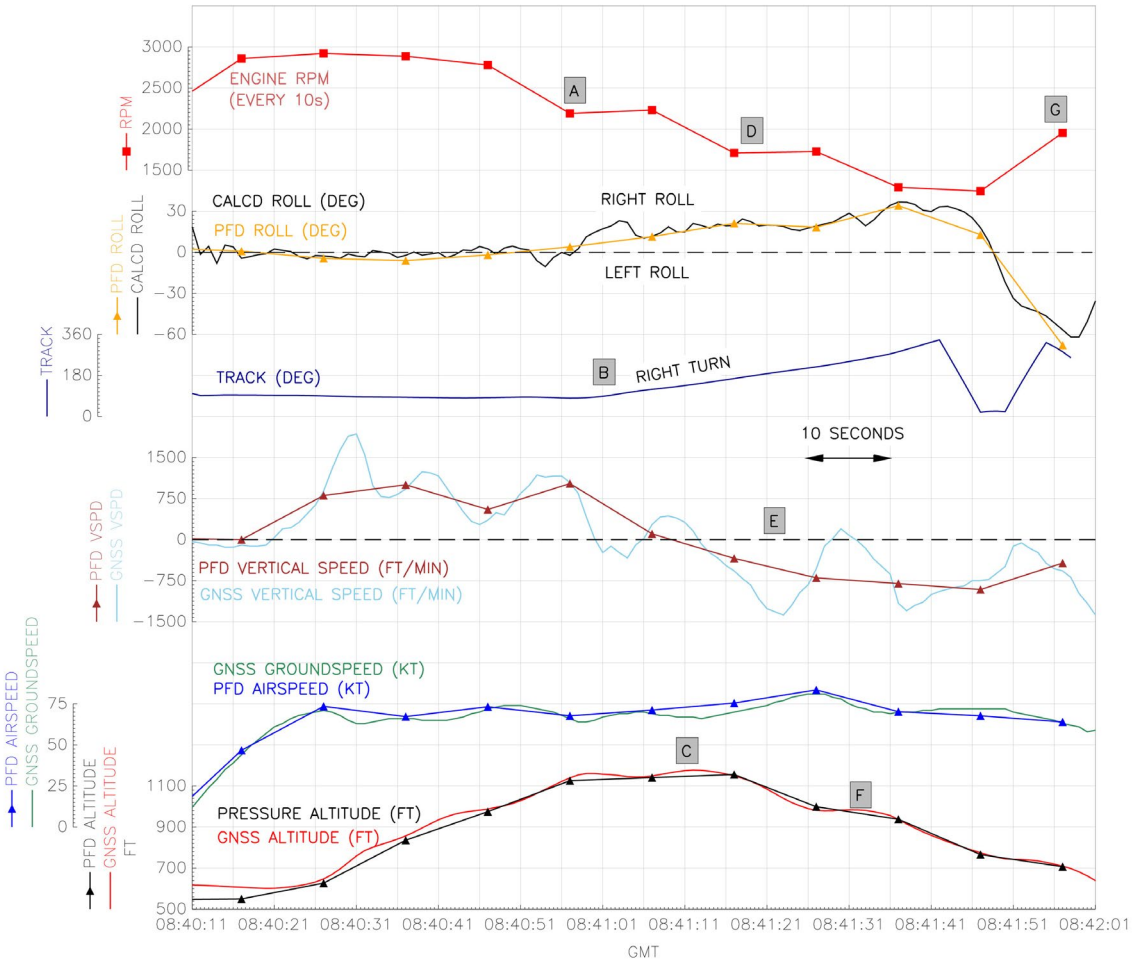

Figure 4

G-STEL flight data from GNSS, PFD and EMS recordings

Maximum GNSS altitude achieved was 1,177 ft amsl (627 ft aal) at 0841:12 hrs (Point C), after which the aircraft started to descend. Recorded rpm reduced again (Point D) and the initial part of the descent reached up to 1,377 ft/min (Point E)[4]. An estimate of bank angle was calculated which showed the bank angle increasing slowly during the turn up to approximately 30° to the right.

The aircraft continued to descend and turn to the right, briefly levelling for a few seconds at 980 ft amsl (430 ft aal) having turned through 180° (Point F). The descent and right turn continued until 0841:49 hrs when the right turn was reversed into a left turn. At this point the aircraft was 0.6 nm from the Runway 28 threshold at 753 ft amsl (203 ft aal). At this distance and altitude, it was close to being on a 3° slope to the runway threshold (Figure 5).

Footnote

[4] Vertical speed was derived from the rate of change of GNSS altitude, which was recorded once per second, because this gave a higher resolution than the PFD vertical speed, which was recorded every 10 seconds.

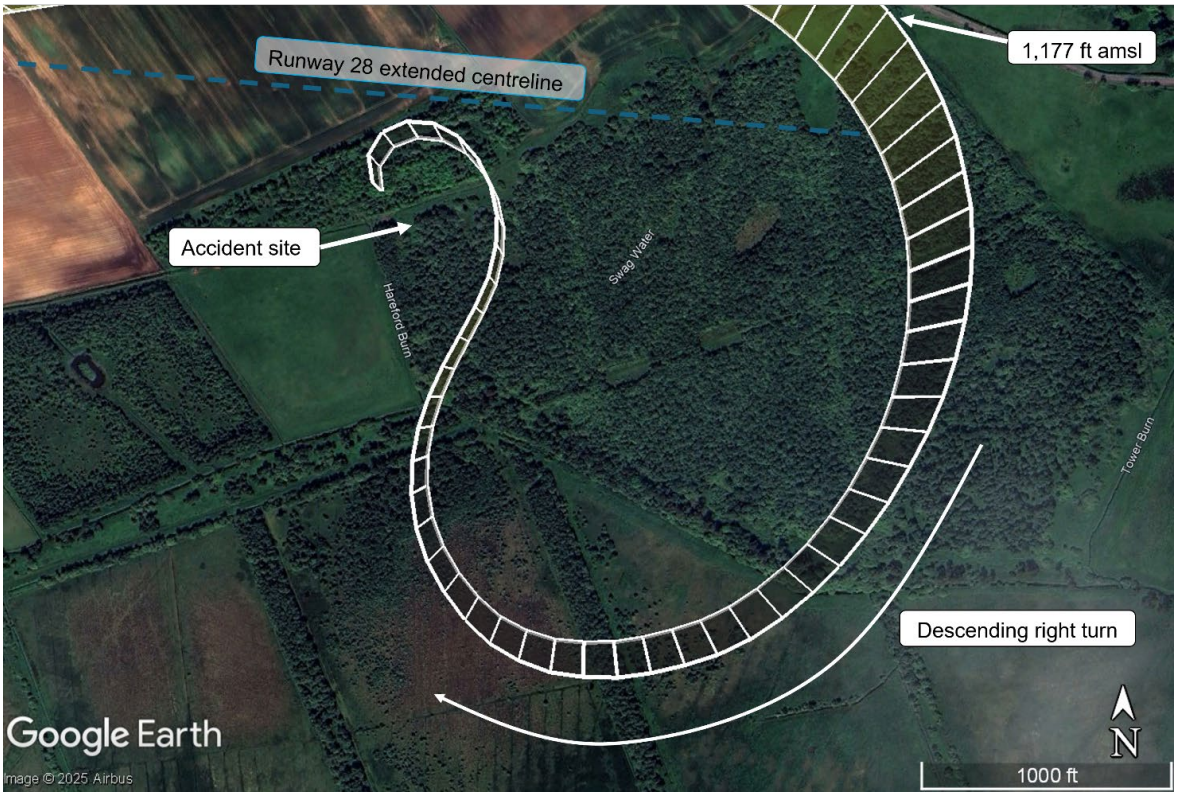

Figure 5

G-STEL aircraft track from recorded GNSS data

As the left turn commenced, CCTV recording from the airfield captured the aircraft on a camera mounted to the airfield hangar. This camera was approximately 0.6 nm from the accident site and the aircraft appeared in the top right corner. The footage showed the aircraft moving from right-to-left for around three seconds before disappearing from view. It re-appeared around three seconds later in a steeper descending left turn which continued until out of sight. Figure 6 shows a portion of the CCTV footage as a compound view of frames approximately every 0.5 seconds.

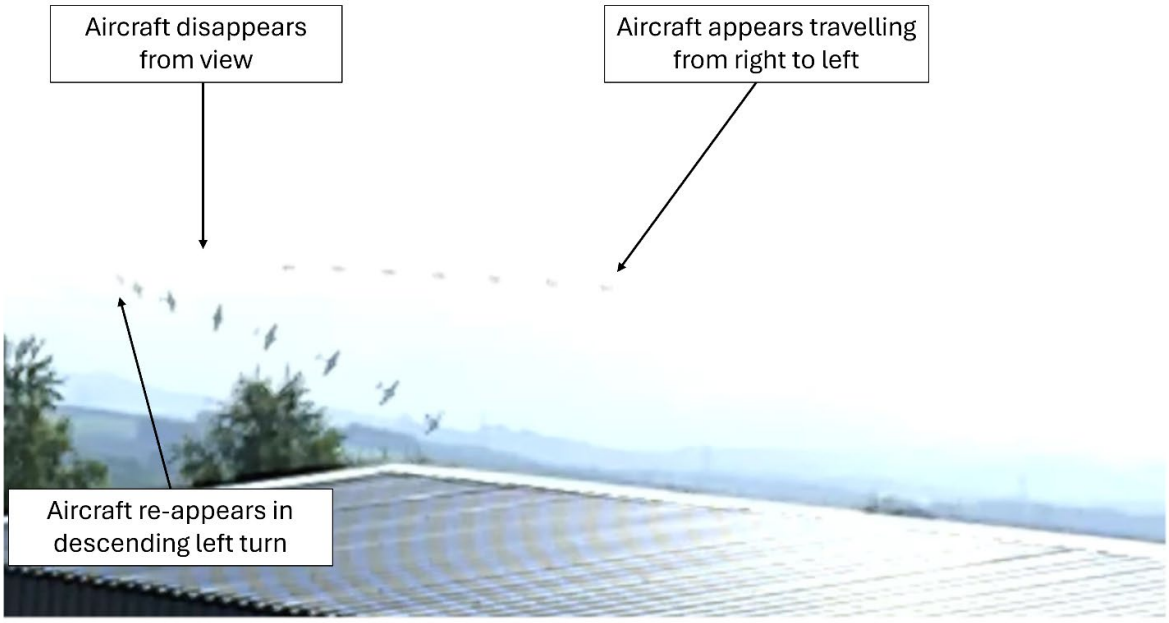

Figure 6
G-STEL CCTV image

The period when the aircraft disappeared from the CCTV view suggested that there were pockets of poor visibility and/or cloud.

The recorded GNSS data confirmed the CCTV footage with a steepening and descending left turn until the end of the recording. Recorded rpm showed an increase from 1,244 rpm to 1,954 rpm in the final 10 seconds of recording, indicating that engine power increased (Figure 4, Point G). The final recorded GNSS position was four seconds later, at 0842:01 hrs, at 639 ft amsl (89 ft aal) with the aircraft descending at approximately 1,400 ft/min.

Accident site

The accident site was barely larger than the aircraft itself. Ground indentations and damage sustained by the left-wing and fuselage indicated that the aircraft crashed in a nose-down attitude whilst rolling to the left. The aircraft bounced and turned approximately 90° before coming to rest upright with the cockpit and wings on a heading of approximately 260°(M). There was nothing to indicate that the aircraft had struck anything whilst airborne, and no evidence that anything had detached from the aircraft before the accident.

The canopy broke on impact and detached from the aircraft. Items from inside the cockpit were ejected with the majority coming to rest to the right of the aircraft centreline.

Both fuel tanks, in the wing leading edges, were disrupted in the accident. Minimal fuel was recovered and discoloured vegetation indicated that fuel had leaked from the aircraft and soaked into the ground after the accident.

One propeller blade was still attached to the hub, but the second was found embedded in the ground.

The ignition key was found in the ignition switch. It was bent and selected to the left ignition system. The direction of the force required to bend the key would have tended to turn the key towards the left position.

Aircraft examination

Flying controls

Examination found that the aileron and rudder control runs were intact. An elevator control rod behind the cockpit was broken where the rear fuselage had buckled and concertinaed in the accident.

Flaps

The flap actuator shaft indicated that the flaps were retracted when the accident occurred.

Fuel

Both fuel tanks ruptured in the accident and minimal fuel remained in them. The gascolator was disrupted in the accident but residual fuel was found in the carburettor bowl and mechanical fuel pump. The combined volume was insufficient for analysis.

The fuel selector control lever had detached, but the valve was found selected to the left-wing, which is the wing that the pilot refuelled before the accident flight. A specialist laboratory analysed a sample of fuel from the hangar supply, which the pilot used to refuel the aircraft prior to the flight, and its properties complied with the requirements for E5 mogas.

Engine

The engine could be rotated by hand, and its external condition showed no obvious anomalies apart from damage sustained in the accident; the right distributor cap and one of the ignition coils had been damaged.

The engine and carburettor were dismantled and examination found nothing that would have prevented either from working.

Review of the engine data downloaded from the EMS revealed no concerns about the operation of the engine during the flight. A number of parameters were recorded including oil temperature and pressure, fuel pressure and engine rpm, which were within their expected operating ranges. Further, data showed that the engine operated until the end of the recording, when the aircraft struck the ground.

Meteorology

The Met Office produced an aftercast of the weather in the area of the airfield at the time of the accident. The general conditions for the morning of 20 May 2025 could be described as

settled with a bank of cloud affecting the east coast from the Firth of Forth southwards. This cloud penetrated inland and affected the Huntlywood area during the morning but cleared by 0900 hrs. Some low cloud would also have affected the Kingsmuir area during the early part of the morning, but this appears to have cleared by 0830 hrs. From the observations, surface visibility remained above 10 km throughout the period of interest.

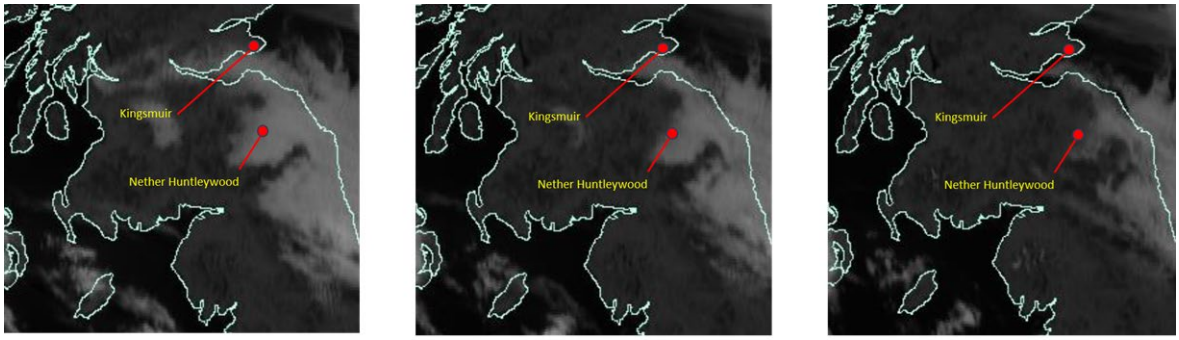

Figure 7

Met Office Aftercast cloud cover

Haar

In meteorology, haar or sea fret is a cold sea fog. It occurs mostly between April and September, when warmer moist air moves over the relatively cooler North Sea causing the moisture in the air to condense. Sea breezes and easterly winds then bring the haar into the east coast of Scotland and north-east England where it can continue for several miles inland.

CCTV footage of the local area, before and immediately after the accident, showed shadows rolling across the fields corresponding with more dense cloud formations blocking the sun. Cameras looking towards the east of the airfield showed significantly more cloud than those looking to the west.

Airfield information

Nether Huntlywood is a privately operated farm airstrip located in Berwickshire, Scottish Borders. It caters to general aviation aircraft and operates with Prior Permission Required (PPR). The airfield features two grass runways:

- Runway 07/25: 400 m long.
- Runway 10/28: 500 m long.

The airfield sits at an elevation of 550 ft amsl, with sheep commonly grazing on the runways. In the *'Warnings'* section of the Pooley's guide to the airfield it states: '*No landing on Rwy 10'.*

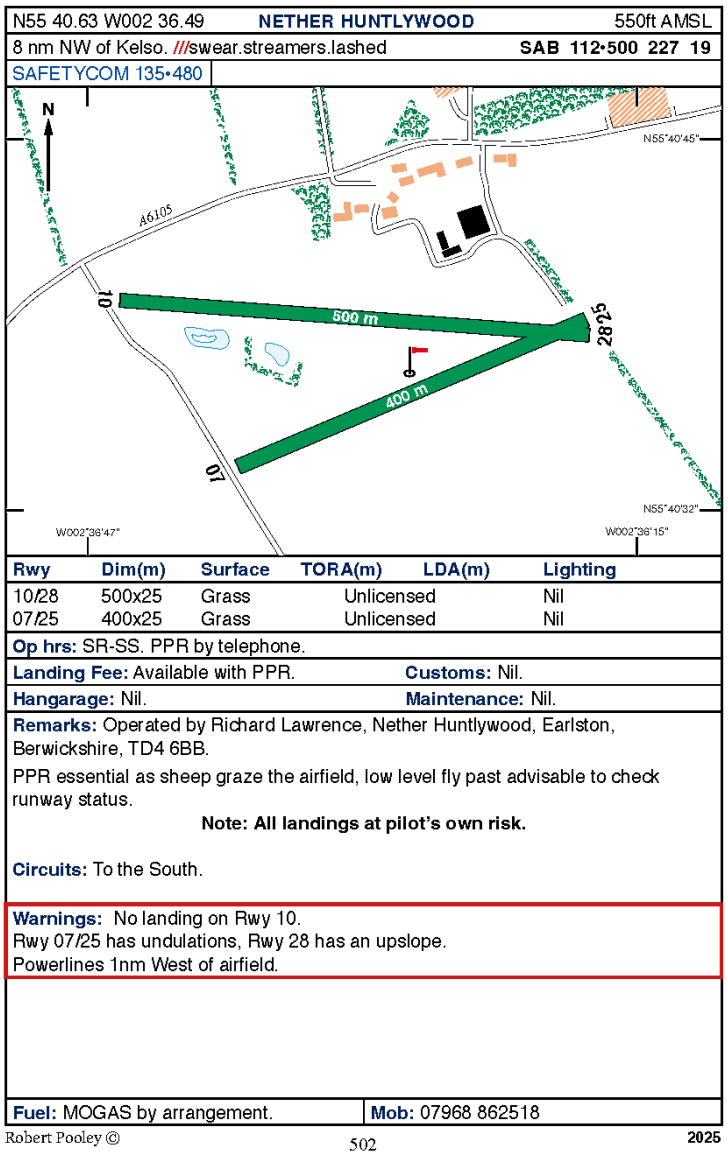

Figure 8

Pooley's Nether Huntlywood airfield plate

Kingsmuir Airfield is a private, unlicensed airfield located near St Andrews, Fife, approximately 40 miles north of Nether Huntlywood. Aeroplanes and microlights are accepted, while helicopters and gliders may be accommodated with prior permission. Runway lighting is not available, and operations are strictly during daylight hours. Communication is via Safetycom (135.480), and arrivals require PPR. The airfield features one grass runway:

- Runway 06/24: 560 m long.

The airfield sits at an elevation of 387 ft amsl.

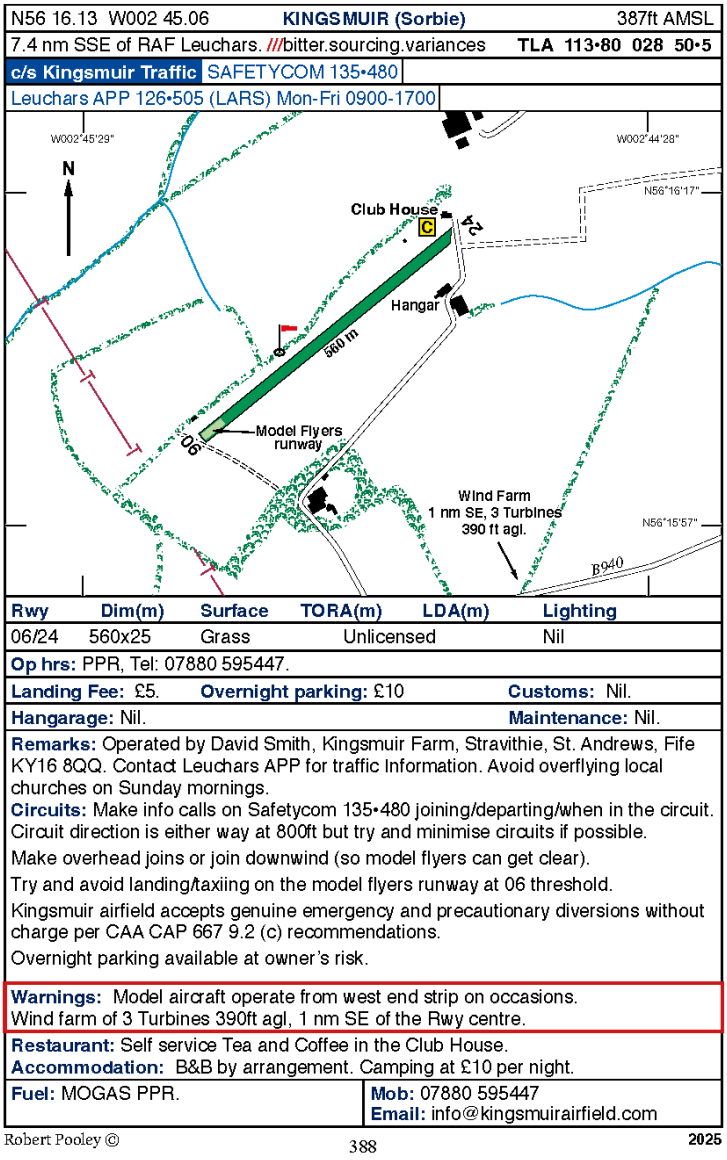

Figure 9

Pooley's Kingsmuir airfield plate

Prior Permission Required (PPR) airfields

At an uncontrolled aerodrome there is a requirement to obtain permission to use the manoeuvring area from the person in charge[5]. This is often achieved by the PPR process, which is also an opportunity for the pilot to be briefed by the owner on relevant hazards at the airfield, as recommended in *'CAP 793, Safe Operating Practices at Unlicensed Aerodromes'*[6].

Footnote

[5] The Rules of the Air Regulations 2015, *Movement of aircraft on uncontrolled aerodromes.*

[6] *CAP 793*, paragraph 5.4: *'If the aerodrome does not feature in any aeronautical publications, a procedure should be developed whereby visiting pilots are warned of hazards prior to arrival. A requirement to obtain prior permission before landing will facilitate such hazard warning by allowing visiting pilots to be briefed.'*

The pilot had contacted Kingsmuir Airfield for a PPR before his flight and been approved. However, Kingsmuir Airfield is normally unattended and there is no requirement for the owner to check that visiting aircraft have arrived.

Overdue action

Overdue action is a formal process that airfields may use when an aircraft expected under PPR does not arrive on time. It can also be activated by ATC units when an aircraft fails to report in accordance with a filed flight plan. This action may include contacting ATC, searching local radio frequencies, coordinating with emergency services, or checking alternative landing sites. The aim is to confirm the flight's safety and whereabouts, especially if there are concerns about the aircraft's well-being or if communication is lost.

VFR flight plan

A VFR flight plan is a formal notification submitted by pilots flying under visual flight conditions, primarily to enhance flight safety and facilitate search and rescue. It must be filed at least 60 minutes before departure and includes essential details such as aircraft identification, type, route, estimated times, and equipment. VFR flight plans are mandatory for flights crossing UK FIR boundaries or operating within controlled airspace (except Class E, where it is recommended). Pilots must activate their flight plan after departure and close it upon landing to ensure accurate tracking. Filing a VFR plan aids air traffic services in traffic management and emergency response.

This flight did not legally require a VFR flight plan, and none was submitted.

Distress and Diversion

In UK aviation, the Distress and Diversion (D&D) service is a dedicated emergency support unit for aircraft in difficulty. It is operated by the Royal Air Force out of the NATS Swanwick centre in Hampshire and is staffed 24/7. Pilots can contact D&D on 121.5 MHz (civilian) or 243.0 MHz (military) for immediate assistance in case of distress, such as being lost, suffering an emergency, or facing equipment failures. The D&D Cell assists by providing accurate safety and operational information and helps locate the nearest suitable landing site for each emergency scenario.

The standard squawk transponder code for an emergency is 7700. Pilots use MAYDAY for distress and PAN-PAN for urgency. The service is available to all pilots flying within UK airspace - including general aviation and commercial flights - to provide rapid, coordinated help during crises, such as engine failures, fuel leaks, medical emergencies, or navigation confusion.

Post-mortem report

A post-mortem examination, including full toxicology screening, was carried out at Edinburgh City Mortuary eight days after the accident. There was no evidence of significant natural disease or toxicology that may have led to the pilot having a medical event that would have resulted in him losing control of the aircraft.

The report found that the pilot died as a result of head and chest injuries relating to an aviation accident.

Other information

Spatial disorientation[7] can occur within seconds when a pilot enters cloud as a turn begins, especially when the pilot is expecting to operate the flight clear of cloud. Studies and reported incidents indicate that a pilot may lose reliable spatial orientation in as little as 20 seconds[8] after losing outside visual references - sometimes much faster if a turn is involved - due to conflicting inputs from the sensory and vestibular systems[9]. Without training and recent practice in flying aircraft solely with reference to aircraft instruments, this can result in rapid loss of aircraft control, commonly leading to spiral or uncontrolled descent.

Analysis

Examination of the wreckage revealed no pre-existing faults that would have affected normal aircraft operation, and there was no evidence to indicate that the aircraft hit anything whilst it was airborne before the accident. The recorded data indicated that the engine was running throughout the accident flight and, in the latter few seconds, engine power was increasing.

The post-mortem examination of the pilot revealed no ailments that would have accounted for an intention to make an immediate landing. There were no reports before the flight of him feeling unwell, and CCTV did not show evidence of him being impaired while preparing the aircraft for flight.

The Met Office aftercast showed that the haar was clearing from the area of the airfield when the aircraft took off, but it had not completely dissipated. The decision to abandon the flight and return to Nether Huntlywood might, therefore, be attributed to significant cloud remaining on the intended route to Kingsmuir, which was discovered after departure. Although this appeared likely, it was not positively determined and it is possible that there was another reason for the decision to return.

Having decided to return to the airfield, the weather probably favoured a landing on Runway 10, with better visibility to the west and no significant cloud. However, the Pooley's airfield chart contains a warning that does not allow landing on Runway 10, which would explain why the pilot positioned himself for a landing on Runway 28. The fact that the accident occurred as the aircraft was intercepting a 3° slope to the runway threshold, ie a normal approach path, also supported a conclusion that the pilot was attempting to land on Runway 28.

Footnote

[7] Spatial disorientation in aviation is the inability of a pilot to correctly interpret aircraft attitude, altitude or airspeed in relation to the Earth or other points of reference.

[8] Bryan, L.A, Stonecipher, J.W and Aron, K, 1954, 180-degree turn experiment, Aeronautics Bulletin No.11, University of Illinois Institute of Aviation, USA. Page 16.

[9] The vestibular system is essential for balance and spatial orientation.

A return to land on a runway reciprocal to the runway used for takeoff requires continuous manoeuvring, as shown in Figure 1. Whilst starting the left turn to align with Runway 28, the pilot appeared to enter cloud, and at the point that the aircraft re-appeared on CCTV it had a high bank angle and steep nose-down attitude consistent with a spiral descent following a loss of control. It is likely, therefore, that the pilot became spatially disorientated very rapidly after entering cloud and when emerging from the cloud had insufficient height to understand and correct the flightpath.

PPR had been obtained from the destination airfield, but PPR should not be taken to imply that an airfield will be manned at the intended landing time and there should be no expectation that a delayed arrival will be reported promptly. To ensure that overdue action is started as early as possible, a VFR flight plan should be filed and activated, even if the flight does not legally require one. Overdue action would then be initiated if the pilot did not close the flight plan on arrival at their destination.

In circumstances where non-fatal injuries are sustained, early discovery is likely to have an impact on survivability. In this case, however, the post-mortem report showed the accident was not survivable, so the delayed discovery of the aircraft played no role in the outcome.

Conclusion

It appeared that at the time of departure the weather was not suitable for VMC flight from Nether Huntlywood to Kingsmuir, and shortly after takeoff the pilot decided to return to Nether Huntlywood to land. It is likely he inadvertently entered IMC during the initiation of a turn and became spatially disorientated. The aircraft entered a spiral descent and struck the ground with a high angle of bank and steep nose-down attitude.

Published: 19 March 2026.