Air Accidents Investigation Branch

AAIB Bulletin 12/2025

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The sole objective of the investigation of an accident or incident under these Regulations is the prevention of future accidents and incidents. It is not the purpose of such an investigation to apportion blame or liability.

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This bulletin contains facts which have been determined up to the time of compilation.

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AAIB Field Investigation Reports

A Field Investigation is an independent investigation in which AAIB investigators collect, record and analyse evidence.

The process may include, attending the scene of the accident or serious incident; interviewing witnesses; reviewing documents, procedures and practices; examining aircraft wreckage or components; and analysing recorded data.

The investigation, which can take a number of months to complete, will conclude with a published report.

Accident

Aircraft Type and Registration:	Cessna T210M, N761JU
No & Type of Engines:	1 Continental TSIO-520-R piston engine
Year of Manufacture:	1977 (Serial no: 21062300)
Date & Time (UTC):	11 April 2024 at 1609 hrs
Location:	Leeds East Airport
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - 1 (Minor) Passengers - 1 (Fatal)
Nature of Damage:	Propeller and nose landing gear damaged. Structural damage from becoming inverted. Aircraft damaged beyond repair
Commander's Licence:	UK Private Pilot's Licence (Aeroplanes) and FAA Private's Pilot's Licence (Foreign Based)
Commander's Age:	79 years
Commander's Flying Experience:	1,378 hours (of which 62 were on type) Last 90 days - 10 hours Last 28 days - 5 hours
Information Source:	AAIB Field Investigation

Synopsis

An undetected pitch trim setting resulted in the pilot attempting to takeoff with close to full NOSE DOWN elevator trim. The pilot rejected the takeoff, whereupon the aircraft briefly became airborne, but the pilot was unable to effectively control the aircraft in pitch. The aircraft bounced several times causing the aircraft's nosewheel to fail and the aircraft to slew off the runway. The remains of the aircraft's nose landing gear dug into the soft ground and N761JU came to rest inverted. The pilot suffered only minor injuries while his more securely restrained passenger sustained major injuries which he succumbed to several days later.

The investigation detected an intermittent fault with the autopilot system which might have contributed to the elevator trim moving towards the NOSE DOWN position. This would have likely been undetectable by the pilot unless he was looking at the trim wheel as it moved. The investigation could not determine why the autopilot might have been engaged for the takeoff roll. The Pilot's Operating Handbook and Quick Reference Handbook did not contain supplementary instructions for the autopilot system, nor did they contain autopilot related checklists or abnormal procedures.

The CAA has taken safety action to promote best practice for pilots in the operation of the autopilot systems fitted to the aircraft they fly. This includes updates to differences training to include autopilot systems. A Safety Recommendation has been made to the CAA to publish guidance and best practice for pilots, covering the use of autopilots in General Aviation.

History of the flight

On the day of the accident the pilot and his passenger boarded N761JU at Sturgate Airfield and flew to Fadmoor Airfield, an unlicensed airfield in the North York Moors National Park (Figure 1). The pilot reported that, en route to Fadmoor, the autopilot trim warning light illuminated "three or four times" and when the TRIM warning light was illuminated the manual trim wheel was "locked by the autopilot." On each occasion, he was able to retrim the aircraft using the electric trim switch on the pilots control wheel, which also disengaged the autopilot. He also reported that during the flight "the autopilot height keeping was less accurate than normal."

After departing Fadmoor, the pilot and passenger flew to Leeds East Airport to refuel before returning to Sturgate. The pilot did not encounter any handling difficulties during the flight from Fadmoor to Leeds East. While the pilot could not recall the precise pitch trim setting when he landed at Leeds East, given the amount of fuel on board at the time, he surmised it would have been a little more nose-up than the takeoff setting.

Having taxied to the refuelling point the pilot shut the engine down and turned off the aircraft master switches. After refuelling he taxied to Runway 24 for departure. Recorded data showed that N761JU stopped on the taxiway twice before entering the runway; once for about 30 seconds, and the second time for about two minutes at the holding point. The data indicated a 45° turn on the taxiway before the first stop, corresponding to the pilot's report that he turned to position into wind to complete pre-takeoff checks. Having completed the pre-takeoff checks and reaching the holding point, he declared over the radio his intention to line up on the runway. At this point the airfield radio operator alerted him to the presence of an aircraft on short finals, so he delayed entering the runway until it had landed.

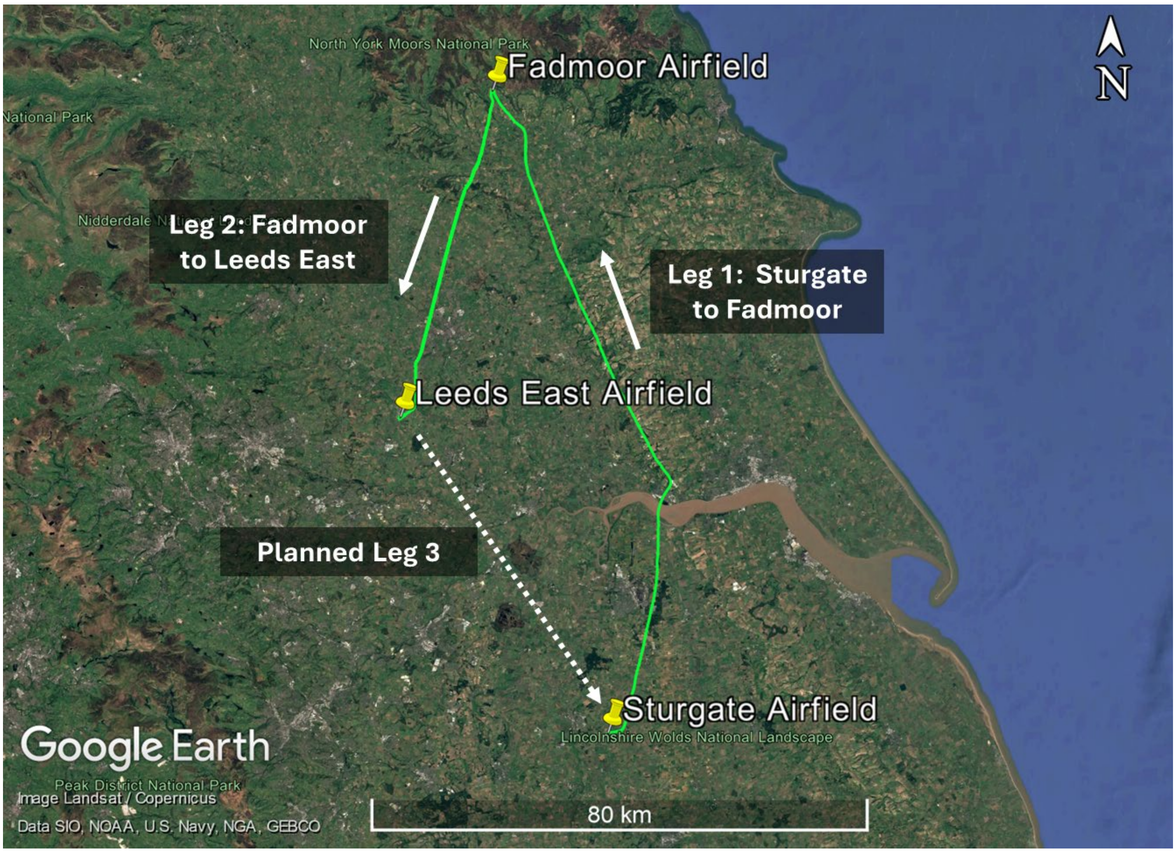

Figure 1

Completed flight legs recorded by the pilots' tablet, and the intended third leg from Leeds East to Sturgate
© 2025 Google, image © 2025 Landsat/Copernicus

After lining up, the pilot set the power and began the takeoff roll. He reported that the initial stages of the takeoff proceeded normally. At approximately 70 kt he tried to rotate the aircraft for lift off but found the "stick would not move" and the aircraft continued to accelerate. The pilot later described that it felt like "the autopilot was on" and was restricting his pitch authority. With sufficient runway ahead, he decided to reject, rather than continue, the takeoff. At this stage he estimated the airspeed would have been in the region of 100 kt. He reported that when he closed the throttle to initiate the stop, the aircraft "jumped off the ground" and climbed to approximately 20 ft. Once N761JU was off the ground the pilot was unable to hold its nose-up and the aircraft descended rapidly, landing heavily on the nosewheel. Eyewitnesses reported seeing the aircraft touchdown and bounce two or three times before, on the last bounce, the nosewheel detached and N761JU settled onto its nosewheel strut. The pilot only recalled one bounce before the aircraft adopted a nose-down attitude with its propeller striking the runway. Despite the pilot's application of brake and rudder to try and keep the aircraft on the centreline, he was unable to stop it drifting to the right as it decelerated. At approximately 40 kt groundspeed, N761JU left the paved surface, the remains of the nose landing gear dug into soft ground and the aircraft inverted (Figure 2).

Figure 2

N761JU inverted at the edge of Runway 24

The pilot described that, when the aircraft came to rest, both he and the passenger were “hanging in [their] seat straps.” When the pilot asked him if he was okay, the passenger did not respond and appeared to be unconscious. The pilot turned the aircraft master switch off before releasing his lap belt and vacating the cockpit. He immediately went round to the passenger’s side of the aircraft, by which time the airfield rescue services had arrived and taken control of the situation. The pilot was asked to move clear of the aircraft while the fire crew extricated the unresponsive passenger. Once the passenger was moved clear of the immediate vicinity of the aircraft, one of the fire crew began performing CPR. Fuel was leaking from the wings, so the other member of the fire crew returned to the aircraft and confirmed its battery switch was turned off to minimise the risk of subsequent fire. The fireman reported seeing the autopilot engage switch in the ON position when he checked the battery switches were OFF. The photograph he took around that time showed the switch to be in the OFF position (Figure 3).

The passenger was taken to hospital by air ambulance. He remained in a critical condition for eight days until he passed away due to complications associated with cervical spine fractures sustained in the accident. The pilot received minor head and back injuries and was discharged from hospital on the day of the accident.

Figure 3

Photograph taken by fire crew showing autopilot engage switch off
(Note: Aircraft is inverted)

Accident site

The aircraft came to rest inverted off the right side of Runway 24 between the touchdown markers and Precision Approach Path Indicator lights for Runway 06 (Figure 4). There was a furrow created by the remains of the nose landing gear leg leading up to the aircraft. The left wing was over the runway surface with fuel leaking from the filler cap. The aircraft was structurally intact with damage to the propeller and vertical fin, and the nose landing gear wheel was missing.

All the missing nose landing gear components were recovered from the runway and surrounding run off areas. A continuous scrape along the runway surface had been created by the nose leg from the point at which the nosewheel had failed, which led to the edge of the runway and the furrow in the soft ground.

There was also evidence of propeller ground strikes at two locations along N761JU's path. The first set of strikes appeared to have occurred before the nosewheel hub separated from the nose strut.

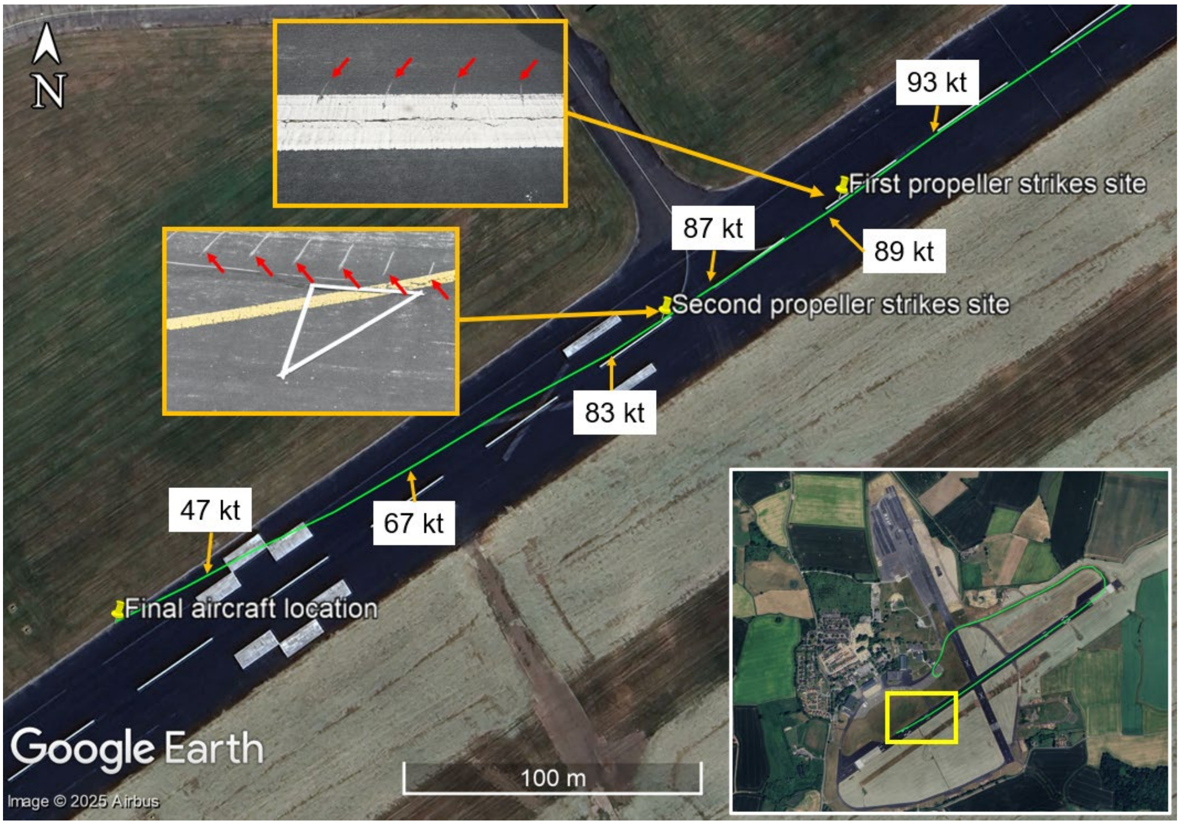

Figure 4

Accident site near Runway 06 threshold & location of propeller strike marks.
Recorded groundspeeds overlaid
© 2025 Google, image © 2025 Airbus

Propeller strike analysis

Using the groundspeed recorded by a navigation application (see *Recorded information*), and measurements of the ground strikes, the propeller was estimated to have been rotating at around 1,440 rpm when it first struck the ground. According to the T210M Pilot's Operating Handbook (POH), the takeoff engine speed is between 2,600 and 2,700 rpm. The calculation therefore indicates that the propeller was rotating significantly below takeoff speed when it first struck the runway.

Recorded information

Accident flight tablet app recording

The pilot used a navigation application on a tablet computer that recorded raw GPS-derived position, altitude, heading, and groundspeed, which was sampled at 1 Hz from the tablet's onboard GPS processor.

Figure 5 shows the ground track recorded by the tablet navigation application. Point A shows the location at the start of the recording, which was next to the refuelling bowser. The recordings indicate that N761JU made a 45° turn on the taxiway before stopping at point B. N761JU remained stationary for approximately 30 seconds, before taxiing to point C, corresponding to the runway holding point. N761JU then waited at the holding point for two minutes. N761JU then entered the runway and commenced the takeoff roll, aligning with the centreline at point D. The recorded groundspeed peaked at 93 kt at point E, before coming to rest at point F.

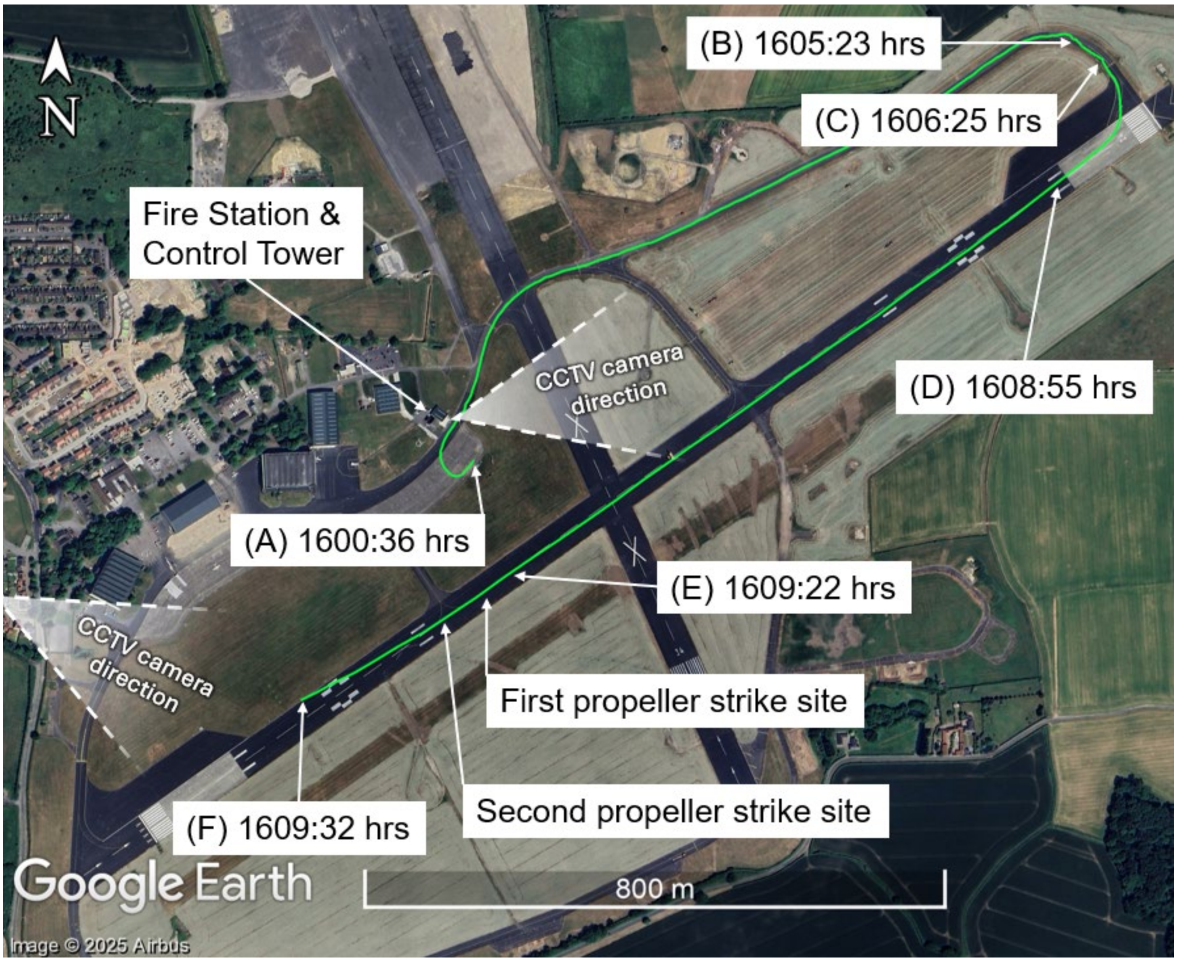

Figure 5

N761JU ground track and notable locations
© 2025 Google, image © 2025 Airbus

Figure 6 shows the recorded GPS groundspeed and altitude during the takeoff roll, with points D, E and F from Figure 5 overlayed. Derived groundspeed from recorded position data is also shown.

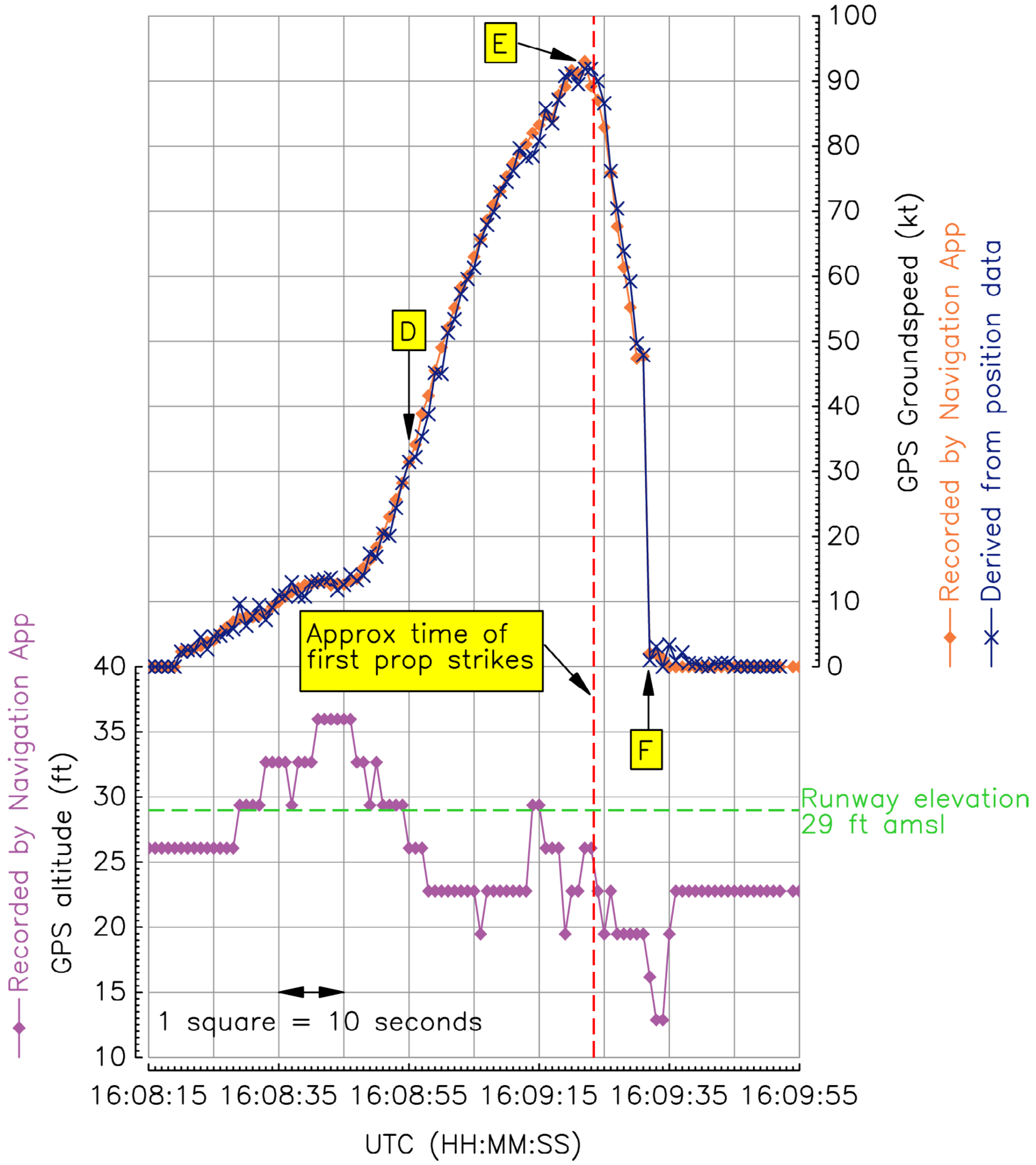

Figure 6

GPS altitude and groundspeed recorded during the takeoff roll

From terrain model data, the variation in height profile along the runway bared no relation to the recorded variation in GPS altitude. Previous AAIB experience with data from the navigation app used on the accident flight indicates that the best accuracy achieved in GPS altitude measurements is typically ± 20 ft. Therefore, no conclusions could be drawn from the GPS altitude data.

Earlier flights on the day of the accident

Both previous legs on the day of the accident, shown in Figure 1, were also recorded by the tablet application. Data for the first leg indicated a variation in GPS altitude throughout the flight, where on several occasions the aircraft appeared to have descended following brief periods of level flight (typically no longer than about one minute), then subsequently climbed again. Recordings for the second leg indicated that a relatively constant GPS altitude of about 3,100 ft was flown during the cruise.

The pilot told the AAIB that he used the autopilot on the first leg (Sturgate to Fadmoor), but that “autopilot height keeping was less accurate than normal.” The autopilot did not have a recording capability, precluding a determination of actual times during which it was used.

The two previous takeoffs were also compared with the accident flight. Groundspeed data from both takeoffs exhibited a smooth increasing speed similar to that shown in Figure 6.

CCTV recordings

Two CCTV sources were obtained which captured parts of the aircraft’s motion along the runway. The camera positions are shown in Figure 5.

The AAIB performed a photogrammetry analysis of a CCTV recording which captured the first part of the takeoff roll. The groundspeeds obtained from this analysis were consistent with those recorded by the tablet and indicated that N761JU was accelerating through about 80 kt as it went out of view of the camera. The edge of the camera’s field of view corresponded with the aircraft having used nearly half of the available runway length.

The second CCTV source, from a residential property near the airfield perimeter, captured N761JU near the edge of the camera’s view as it inverted. The video exhibited significant compression artefacts, lens distortion and a variable framerate, which precluded a detailed analysis. Based on these limitations and by assuming that the change in relative angle between the camera and aircraft was negligible, the groundspeed was estimated to have been between 15 kt and 35 kt in the final second before N761JU began to invert.

Digital engine monitor

N761JU was equipped with an engine monitoring instrument which was capable of recording engine parameters, propeller speed and GPS information to non-volatile memory. However, when the AAIB downloaded the memory, it was found that the last flight recorded was in January 2020. It was therefore not possible for the investigation to determine the throttle settings during the takeoff.

The investigation found that the firmware version installed to the engine monitor was from its date of manufacture and had a known bug affecting recording functionality. The manufacturer stated that one symptom of the bug would be a ‘warning’ on the display during device power-on, although this did not appear when the AAIB powered on the accident unit in its recorder laboratory.

An updated firmware which fixed the issue was available from the manufacturer’s website. Most manufacturers of General Aviation (GA) digital avionics periodically release firmware updates containing updated functionality, databases and/or bug fixes. Avionics with integrated recording functionality can provide useful data to support activities such as 'on condition' engine monitoring for maintenance purposes, flight efficiency monitoring, and pilot training debriefs. Regularly applying the manufacturer's latest firmware to avionics with recording capability, in accordance with manufacturer-approved maintenance processes, can reduce the possibility of data not being recorded.

Aircraft information

N761JU was a Cessna T210M which is a high wing, six seat GA aircraft with a turbo-charged Continental TSIO-520-R piston engine and a variable pitch three bladed propeller. It is fitted with conventional flying surfaces which are operated via steel cables and pulleys. The aircraft is trimmed in pitch by a trim tab fitted to the right elevator and is moved by a pitch trim wheel operating a series of cables. The trim wheel is a black hard moulded plastic wheel, with 24 evenly spaced tactile bumps spaced equally around the circumference. A trim position indicator is positioned adjacent to the trim wheel (Figure 7) in the cockpit on the centre pedestal. It is labelled NOSE UP, NOSE DOWN and TAKE OFF.

The full NOSE UP, full NOSE DOWN and TAKE OFF trim tab deflections were measured relative to the neutral position on the elevator. The TAKE OFF position corresponded to a 4° upwards trim tab deflection, with NOSE DOWN corresponding to a 24° upwards deflection. Full NOSE UP deflection corresponded to the trim tab deflecting 10° down relative to the elevator surface. From the neutral position the trim wheel turns two full revolutions to NOSE UP and one and half revolutions to NOSE DOWN.

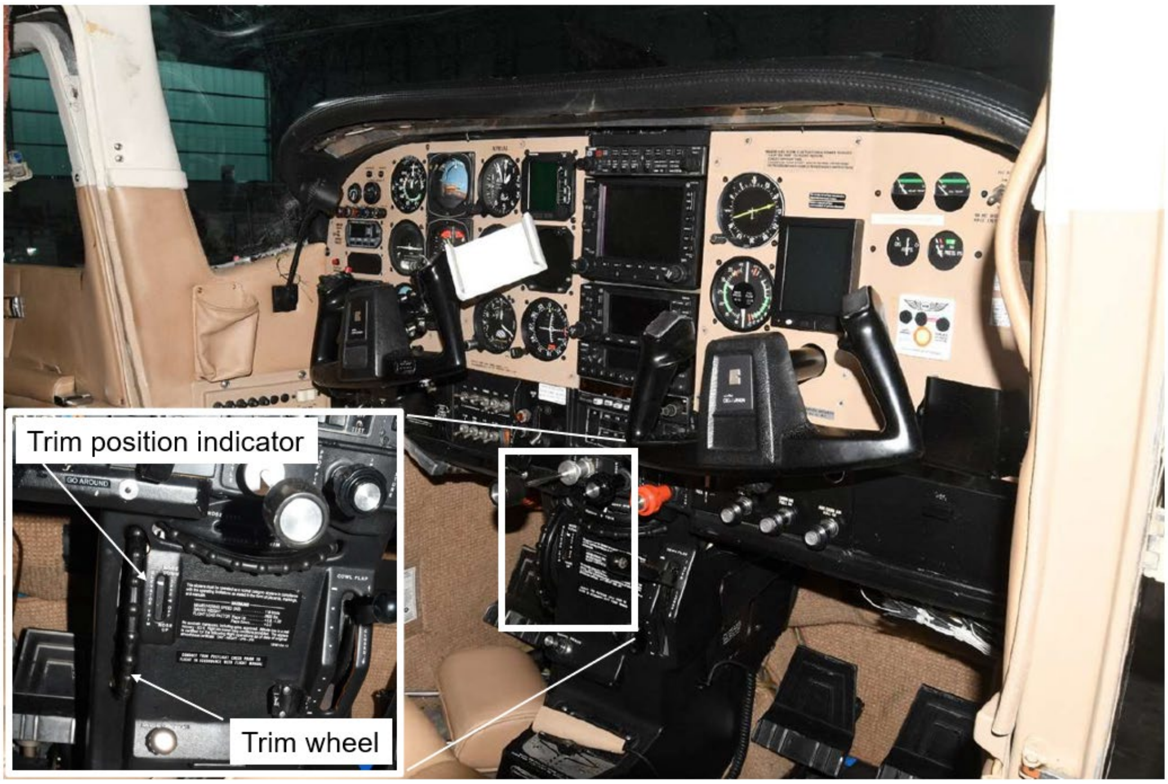

Figure 7

Location of the aircraft's elevator trim wheel and position indicator

Autopilot

N761JU had been fitted with a King KFC 200 autopilot in June 1978, several months after it had been delivered new in November 1977. The FAA Form 337[1] states that the autopilot was fitted in accordance with King installation prints and Supplementary Type Certificate (STC) SA1202CE and there was a Flight Manual Supplement.

Despite mention of the supplement in the STC, the supplements section of the POH did not include reference to, or guidance for, the installed KFC 200 autopilot system. Nonetheless, filed in the POH binder was a standalone '*Pilot's Manual*' for the '*King KFC 200 Flight Control System*' published by the King Radio Corporation (Figure 8). This manual did not contain a publication date or version number.

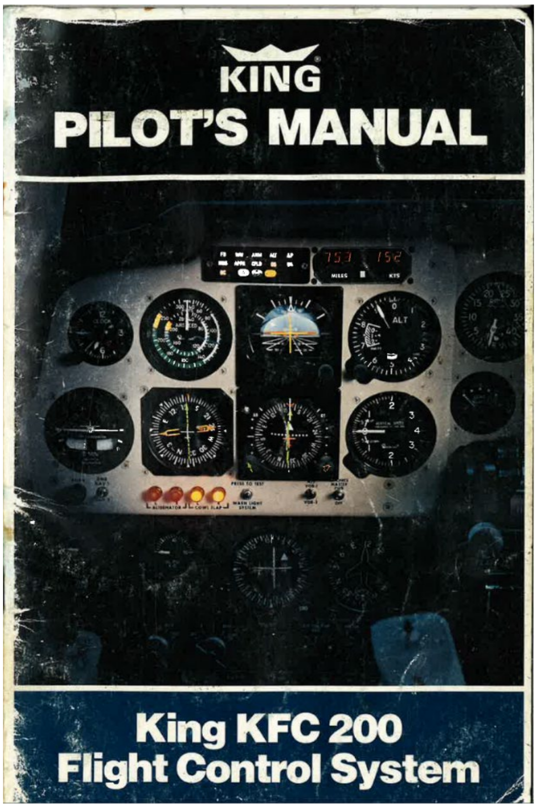

Figure 8

King Pilot's Manual for the KFC 200 Flight Control System

The King Pilot's Manual provided an overview of the KFC 200 installation and gave guidance for the normal operation of the autopilot system. While it did mention the presence of a '*Trim warning light*' on the annunciator panel, it did not contain further information as to the implications associated with that light illuminating nor did it specify any associated remedial actions to be taken. The manual also defined a '*preflight test* [to determine] *before takeoff,*

Footnote

[1] An FAA form to authorise Major Repairs and Alterations (Airframe, Powerplant, Propeller or Appliance), https://www.faa.gov/forms/index.cfm/go/document.information/documentID/185675 [accessed September 2025].

that the system is operating normally.' It did not specify any requirement for when this test should be conducted, eg before all flights, only before flights when planning to use the autopilot, or some other periodicity.

The investigation found a more comprehensive version of a manual on the manufacturer's website[2] (Figure 9). This document was also undated but contained additional information not included in the version found in the aircraft POH binder.

Figure 9

Expanded version of the King Pilot's Guide for the KAP/KFC 200 flight control systems

Footnote

2 Available at https://www.bendixking.com/content/dam/bendixking/en/documents/document-lists/downloads-and-manuals/006-08262-0000-KAP-KFC-200-Pilots-Guide.pdf [accessed 26 April 2024].

One of the additional sections included in the updated version was a section titled '*General Emergency Procedures*.' This section did not list the specific actions to be taken should the TRIM warning light illuminate, but it did contain direction for pilots to refer to the FAA Approved Aircraft Flight Manual Supplement:

> *'IMPORTANT: This Pilot Guide provides a general description of the various operational characteristics of the KFC 200 Flight Control System. However, operation of the system should not be attempted without first reviewing your FAA Approved Aircraft Flight Manual Supplement for complete system familiarization.*
>
> *Pertinent limitations, procedures and warning statements from your aircraft Flight Manual Supplement are contained in this Pilot's Guide.'*

Autopilot functionality

The primary autopilot interface is the mode controller situated in the lower centre of the instrument panel (Figure 10). Through this panel the different modes can be selected via push button switches, and the autopilot is engaged with a solenoid-held ON/OFF switch. This switch will return to OFF when power is removed by switching off either the aircraft or the avionics master switch. In the lower right corner of the controller is a pre-flight test switch.

Figure 10

Autopilot mode controller and annunciator panel

Fitted to the left side of the aircraft instrument panel is the autopilot annunciator panel (Figure 10) which displays to the pilot which modes have been selected and incorporates a TRIM failure warning light in the lower right corner. This warning light will illuminate when an auto-trim failure occurs or when the trim circuit breaker is pulled. During the pre-flight checks detailed in the King manuals, when the TEST button is pressed on the mode controller the TRIM warning light will flash at least four times to indicate proper operation of the auto-trim monitoring system.

To engage the autopilot, first the desired mode is selected, then the AP switch is operated and the solenoid will latch it to ON. If a mode is not pre-selected, it is not possible to engage the autopilot. In normal conditions to disconnect the autopilot, the pilot either operates the control wheel mounted electric trim switches, presses the AP disconnect button on the control wheel, or moves the AP switch to OFF. This results in all the selected modes deselecting, and their associated lights being extinguished from the annunciator panel. The electric trim switches are only present on the left hand control wheel and are not installed on the right hand control wheel.

The physical installation of the autopilot consists of multiple electrical and electromechanical components, most of which are in the aft fuselage behind the passenger cabin (Figure 11).

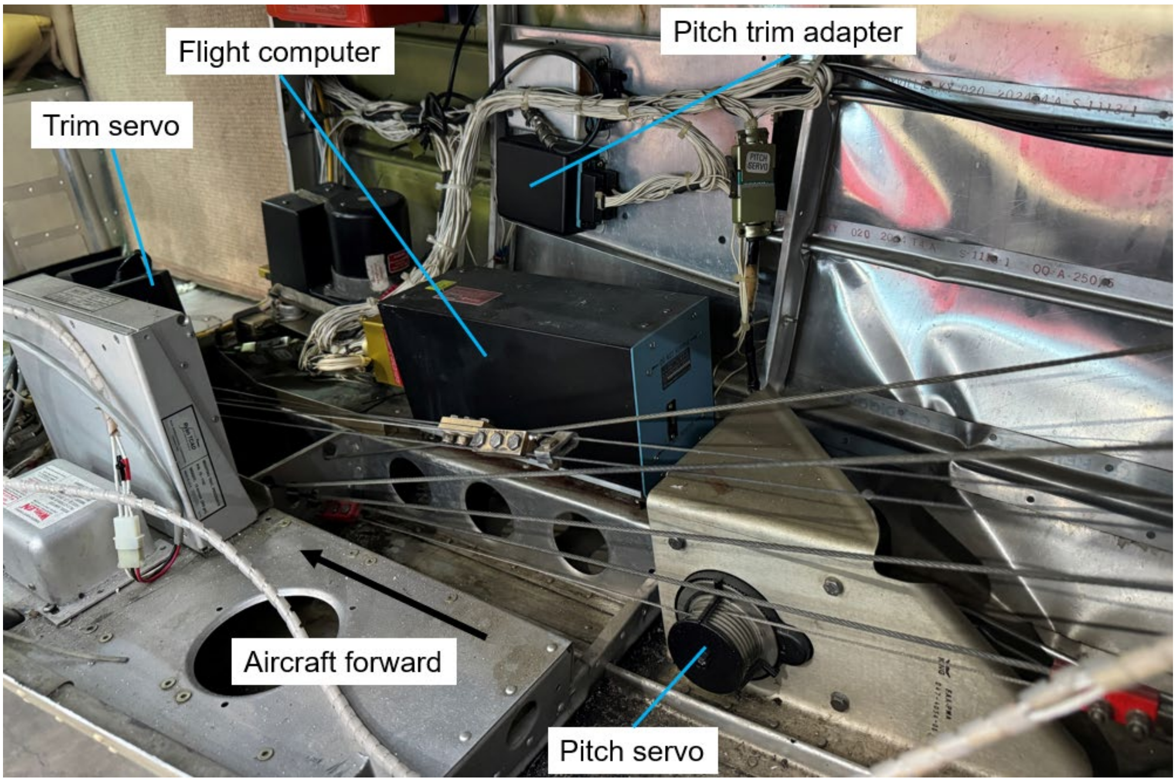

Figure 11

Location of some of the autopilot components

The auto-trim system is controlled by the flight computer and operates the aircraft's pully and cable system for the trim tab by a dedicated trim servo. When the servo is running the mechanical trim wheel in the cockpit also moves. The auto-trim system can be operated by either; the vertical trim switch on the left of the mode controller (which can adjust the altitude without disengaging the autopilot), the flight computer in the appropriate mode, or by the control wheel switches (which will result in the autopilot disengaging).

Another component of the auto-trim system is the pitch trim adapter KA 117 (Figure 12) which interfaces with the flight computer and provides additional control functions due to the inclusion of the specific model of trim servo (KA 273) in the autopilot system. The pitch trim adapter comprises two printed circuit boards with discrete soldered components. The upper board is the control side of the adapter, and the lower board is the drive controller for the trim servo.

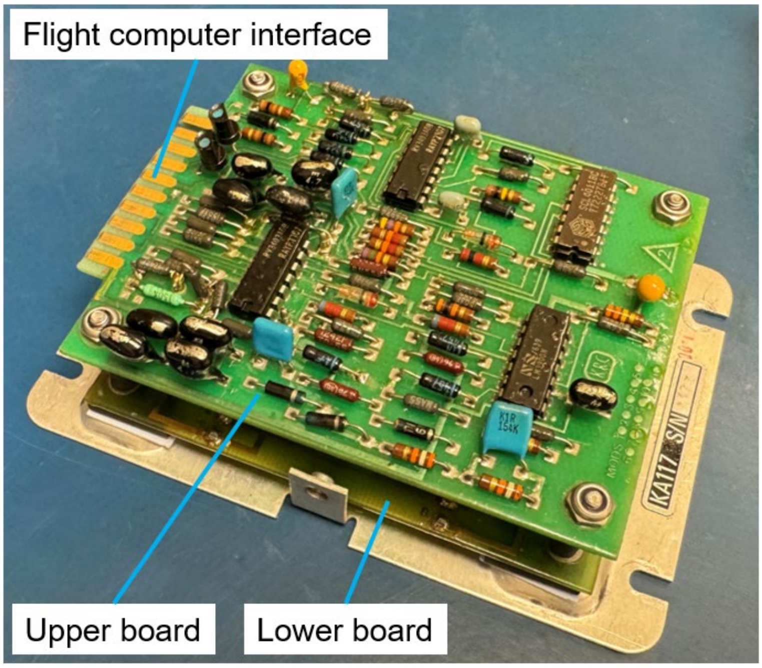

Figure 12
PCBs inside the KA 117 pitch trim adapter

Aircraft examination

The aircraft was recovered to the AAIB facilities and subjected to a detailed examination. No pre-existing defects could be found with the engine or the airframe. The pitch trim tab was found in the full NOSE DOWN position with the cockpit indicator showing the same position. Damage was identified to the top of the vertical fin with corresponding damage to the aft fuselage structure consistent with an impact to the top of the fin. The propeller blades were scraped and curled backwards demonstrating continued striking with a hard abrasive surface such as the runway. The nosewheel hub had shattered into multiple pieces and there was evidence on the side wall of the tyre of it being highly compressed. The remains of the wheel fork had been highly abraded and little of it remained. The lower end of the oleo was also highly abraded, with runway material and soil embedded in the end.

Autopilot survey

A survey of the aircraft revealed that the autopilot components installed were not in accordance with the STC for the Cessna T210M. Appendix 1 shows the components of the autopilot as referenced in the STC and what was found installed on the aircraft. No records were found to certify these variations and therefore it was assumed that this was the system installed in 1978 and had been operated in this configuration ever since.

Survivability

N761JU was equipped with three-point seat harnesses for both pilot and front seat passenger. Each of these harnesses consisted of a lap strap attached to the cockpit floor either side of the seat and a detachable shoulder strap anchored on the outboard cockpit rear doorposts (Figure 13). Both are static belts which can be adjusted in length to suit the occupant.

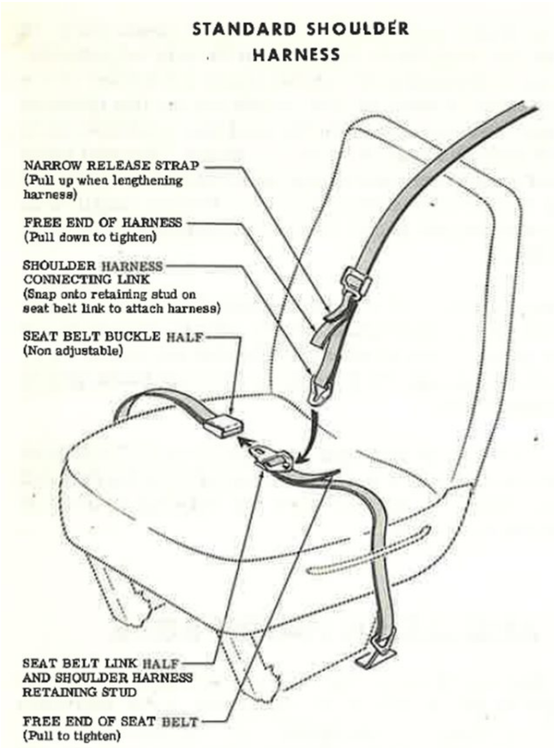

Figure 13

Extract from POH showing C210 front seat harness arrangement

The pilot secured his lap belt for takeoff but left the shoulder strap unfastened. He survived the accident with only minor injuries while the passenger fastened both of his straps and suffered cervical spinal injuries which ultimately proved fatal. The investigation did not find evidence the passenger had experienced any significant disabling forces before the aircraft left the runway. Despite the occupants having their lap straps secured, both of their heads struck the cabin roof as the aircraft came to rest inverted. Figure 14 shows the clearance from the seat headrests to the cockpit roof when the aircraft was upside down after the accident.

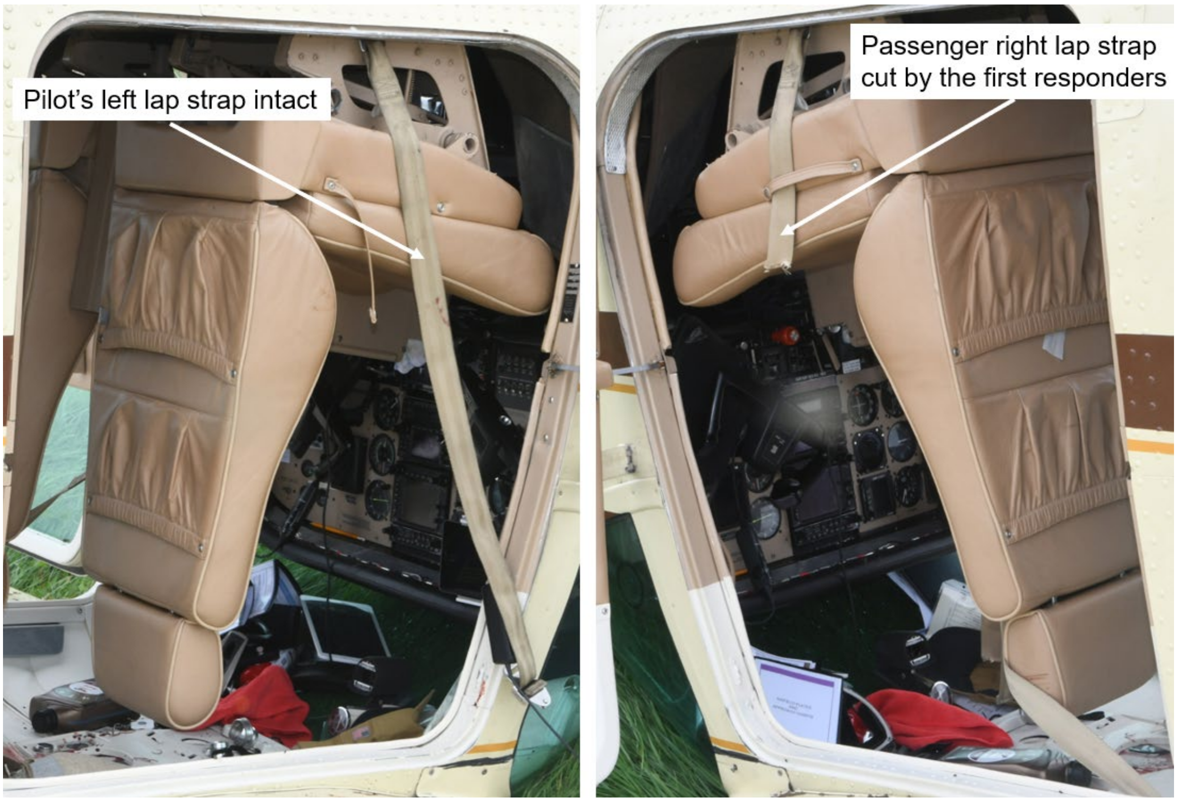

Figure 14
The proximity of the seat headrests to the cockpit roof

Meteorology

The weather at the time of the accident was benign. The wind was approximately aligned with the runway at 240°/10 kt and there was no precipitation or low cloud.

Personnel

The pilot gained his PPL in 1983 and bought N761JU in 2023. He held a valid PPL, UK IMC rating and Class 2 medical. He stated that when he flew, he would invariably be accompanied by the passenger who had been a close friend for many years. The passenger was himself an experienced private pilot, although his medical was lapsed and hence had recently only ever flown as a passenger.

The pilot described the passenger as meticulous and engaged on all flights. While he would not take part in the operation of the aircraft, he would follow through the checklists and procedures carried out by the pilot and would highlight if he thought anything had been missed. The pilot reported that the passenger would often take it upon himself to manage the aircraft's Garmin 530 navigation system, and that he had been setting it up for the return flight to Sturgate before they lined up on the runway for the accident flight.

The pilot had a basic knowledge of the KFC 200 autopilot system and stated that his passenger had been encouraging him to improve his proficiency with using it. His knowledge had in part been gained through an explanation of its operation from another pilot who had previously owned N761JU. This other pilot's understanding of the TRIM warning light on the annunciator panel was that it illuminated if the aircraft was out of trim, and that pilot input was needed to correct the trim setting. The pilot would respond by using the control wheel mounted electric trim switches, whose use would electrically drive the trim in the commanded direction and disengage the autopilot, leading to the TRIM light extinguishing.

The accident pilot reported that he would check the autopilot was OFF before engine start, as per the '*Before Start Engine*' checklist (see *Other Information* section) and would only ever switch it ON once airborne. He told the investigation that when he sets the trim for takeoff, he normally uses the manual trim wheel and does not operate the electric trim switches on the ground.

Tests

Initial on aircraft testing

With the assistance of a CAA Part 66, B2 licensed avionics engineer, who was familiar with the Cessna 210 and the KFC 200 autopilot system, the autopilot system fitted to N761JU was inspected and various ground tests were performed. The aircraft and the autopilot system had not been dissembled following the accident, except for the removal of the wings for transportation from the accident site to the AAIB facilities.

Following the initial inspection, the engineer determined that the pitch trim was observed to be in the full NOSE DOWN position with the mechanical stops correctly adjusted. The manual trim system indicated and operated correctly. The pitch trim wheel travelled smoothly in both directions with no sudden jumps or restrictions, and the trim indicator position was consistent with trim wheel movement and the trim tab position. The electric trim system appeared to function normally using the control wheel trim switches, with the trim servo driving the tab between both mechanical stops.

The mode controller AP engage switch operated correctly and the autopilot could be disconnected in all the expected ways: engage switch, control wheel disconnect button, circuit breaker, operating the control wheel electric trim switches (in both directions) and by switching off the avionics or aircraft master switch.

With the autopilot system engaged in a level flight mode (heading hold) the auto-trim system indicated a fault with an associated failure light on the annunciator panel and an audible alarm. The TRIM warning light on the annunciator panel was found to extinguish when the electric trim switch was driven. The TRIM warning was seen to re-illuminate 21 seconds after releasing the electric trim switches. The function of the autotrim system was tested and it was found that there was no pitch trim drive from the autopilot.

When selecting the autopilot pre-flight test function, only two flashes of the TRIM warning light were seen, instead of the four required to indicate correct function as per the KFC 200 manual. This indicated a fault on either the UP or DOWN control channel. After the self-test, the TRIM warning light extinguished, then returned 21 seconds later. Exploration of the trim system fault indicated that it was possibly related to the KA 117 pitch trim adaptor.

KA 117 testing

The pitch trim adaptor was removed from the aircraft, by disconnecting the two multi-pin plugs, and taken to a company specialising in King autopilot systems. The KA 117 was plugged into a King test set in accordance with the KA 117 maintenance manual and a series of test points performed. The unit failed the first test point because the TRIM UP CMD [command] LED was permanently lit, indicating that the KA 117 was sending a continuous trim UP command to the flight computer.

Functional testing

Following the rig testing of the KA 117, it was re-installed, and additional functional testing was performed. This included verifying the functionality of the electric trim system when operated using the pilot control wheel mounted trim switches, and in different autopilot modes.

When engaging the autopilot in any mode except ALT HOLD mode, the TRIM warning light would immediately extinguish, then return approximately 34 seconds later. No effect on the electric trim was otherwise observed.

With ALT HOLD mode selected and the autopilot engaged, the TRIM warning immediately extinguished, and the electric trim drive system would begin to operate a few seconds later. Analysis of the operation indicated that trim system drove in a pulsed motion, with two pulses per second. The test was repeated several times, and the time for the trim tab to move from TAKE OFF to NOSE DOWN ranged between four minutes and 30 seconds, and about three minutes. The TRIM warning light remained extinguished when the autopilot was ON with ALT HOLD mode engaged.

These tests were repeated several times during the investigation with the autopilot demonstrating the same behaviour each time. However, late into the investigation the ALT HOLD test was being demonstrated, and the behaviour of the autopilot had changed. The pre-flight test returned four flashes of the trim annunciator light, and the trim system did not operate. Throughout the remainer of the investigation the autopilot did not fail a pre-flight test, nor did it drive the trim tab with ALT HOLD mode engaged.

Other information

Pre-flight procedures

When the cockpit was inspected at the accident site, the Cessna POH and a commercial quick reference card for the Cessna 210 were found, along with a homemade Pilot's Quick Reference Handbook (QRH) which had been compiled by the passenger. It was labelled version 1.2 and dated August 2023. This QRH contained the checklists, normal and abnormal operations for the aircraft in a simplified form and included useful information specific to flying N761JU in the Northeast of England.

Figure 15 shows the '*preflight checks*' (left) from the QRH with a step to check that the autopilot is OFF, and the '*before take off*' checks (right) with a step to check that the trim is set correctly for takeoff.

PREFLIGHT CHECKS CESSNA T210M

IN CABIN — Note Tacho

SEAT, HARNESSES	Locked, Secure
BATTERY MASTER SWITCH	All Off
ALTERNATOR SWITCH	
MAGNETO SWITCH	
AVIONICS MASTER SWITCH	
LANDING GEAR LEVER	Down
CIRCUIT BREAKERS	Check, All In
BATTERY / ALTERNATOR MASTER	On
GEAR LIGHT	On, Green
FUEL QUANTITY	Check
FUEL SELECTOR VALVE	On Lowest Tank

BEFORE STARTING ENGINE

ROTATING BEACON	On
DOORS	Closed, Locked
AUTOPILOT	Off
COWL FLAPS	Full Open
AVIONICS SWITCH	Off
ENGINE PRE-OILER	Check

Check - Operate until Pressue Rises into Green Sector, Caution with Low OAT.

The Avionics Power Switch Must be OFF during Engine Start to prevent possible damage to Avionics.

ON THE GROUND

BEFORE TAKE OFF CESSNA T210M

POWER CHECKS

PARKING BRAKE	Set
RADIOS	Set
TEMPERATURES AND PRESSURES	Check
FLIGHT CONTROLS	Free and Correct
FLIGHT INSTRUMENTS	Check
FUEL SELECTOR VALVE	Fullest Tank
MIXTURE	Rich
ELEVATOR and RUDDER TRIM	Take Off
THROTTLE	1700 RPM

a. MAGNETOS Check (RPM drop should not exceed 150 RPM on either Magneto or 50 RPM diferencial between Magnetos).
b. PROPELLER Cycle from High to Low RPM; Return to High RPM (Full Forward).
c. ENGINE Instruments and Ammeter - Check
d. SUCTION GAUGE - Check in Green Arc.

THROTTLE	Idle, 800-1000, Reset 1200 RPM
CIRCUIT BREAKERS	Check, All In
AMMETER / VOLTMETER	Check
SPEED BRAKES	Check Retracted
NAV. LIGHTS, STROBE LIGHT	On as required
TAXI, LANDING LIGHT	On as required
THROTTLE FRICTION NUT	Adjust
TRANSPONDER	7000, Standby

ON THE GROUND

Figure 15

QRH – ‘*Preflight Checks*’ and ‘*Before Take Off*’ checks

The homemade QRH checklists were reviewed against the Cessna 210 POH procedures and were found to comprehensively reflect the manufacturer documentation. Neither the POH recovered from the aircraft, nor the homemade QRH, referred to any pre-flight autopilot functional checks or emergency procedures for the autopilot system.

Differences training

The CAA requires that, in order to change to a different type or variant of aeroplane, differences training or familiarisation must be carried out by an appropriately qualified Type or Class Rating Instructor or Flight Instructor. Differences training requires both theoretical knowledge instruction and practical training whereas familiarisation training requires the acquisition of relevant additional knowledge. The CAA has determined certain aircraft systems to be ‘*complex*.’ Differences training is specifically required before a pilot first flies a single engine piston aircraft with any of the ‘*complex’* systems listed below:

- Variable Pitch Propellers
- Retractable Undercarriage
- Turbo/Super-charged Engines
- Cabin Pressurisation
- Tailwheel

- Electronic Flight Information Systems
- Single Lever Power Control

The investigation noted that autopilot systems were not included in this list despite their complex nature of operation and their ability to affect the operation of an aircraft[3].

Related events

In June 2025 the AAIB published an investigation into G-BKJW[4], a Piper PA-23-250, in which a pitch trim runaway during an approach to landing was considered a possible cause. Tests and research conducted for this investigation identified that a significant out of trim condition can require the pilot to apply large forces to the control wheel which many pilots may struggle to maintain for more than a few seconds. It discusses autopilot systems and the training to use them in GA aircraft. The CAA took eight safety actions following the investigation which included producing safety material regarding the use of autopilots, how to deal with pitch trim runaways, and publishing a safety notice recommending that inoperative autopilots or electrical trim systems are deactivated.

In 2013, a Cessna 210M, registration N450EM[5], suffered a similar accident to N761JU and was investigated by the NTSB. As N450EM lifted from the runway, the pilot reported the controls feeling "heavy" and aborted the takeoff at about 25 ft above the runway. The aircraft bounced several times before the nose gear collapsed, the propeller struck the runway, and the aircraft inverted as it veered off the side of the runway. The NTSB investigation did not identify any pre-existing fault and concluded that the accident was probably caused by the pilot's "failure to properly configure the elevator trim prior to flight."

Analysis

The accident

During the flight to Fadmoor the pilot had experienced several instances of the TRIM warning light illuminating on the annunciator panel, associated with inaccurate autopilot height keeping. Operating the electric pitch trim switch disconnected the autopilot and removed the problem. Based on his understanding of the system, the pilot assessed this as a nuisance and none of the documentation found in the aircraft contained guidance as to remedial or abnormal procedures to be followed in the event of the TRIM warning light illuminating or a pitch trim runaway.

It is likely that the pilot had set the trim to sightly nose-up when the aircraft landed at Leeds East after which the aircraft master switches were turned off before refuelling. This would have removed power from the autopilot engage switch solenoid meaning the autopilot would have been off with all modes disarmed when the pilot started the aircraft for the

Footnote

3 Differences Training in Single Pilot Piston Engine Aeroplanes | UK Civil Aviation Authority [accessed September 2025].

4 https://assets.publishing.service.gov.uk/media/6859549cf05cab1603ade629/Piper_PA-23-250_G-BKJW_08-25.pdf [accessed September 2025].

5 https://data.ntsb.gov/carol-repgen/api/Aviation/ReportMain/GenerateNewestReport/87597/pdf [accessed September 2025].

accident flight. The pilot recalled carrying out a pre-takeoff check of the trim setting and was confident that if it had been set incorrectly his passenger would have pointed it out to him. The investigation determined that the trim had most likely been set appropriately during the pre-takeoff checks.

The pilot reported he thought the control column was jammed in pitch when he tried to rotate the aircraft, however the investigation did not find any evidence of a physical restriction in the pitch control circuit. The pilot thought he was experiencing a control restriction which felt like "the autopilot was on" but, unknown to him at the time, the pitch trim was in the full NOSE DOWN position. He described deciding to abort the takeoff and believed that, when he cut the throttle, the aircraft suddenly became airborne before pitching down. He then thought the aircraft bounced once. Witness reports and impressions left on the runway show there were probably at least one or two additional bounces on the nose landing gear before the nosewheel hub failed and the propeller contacted the runway surface. It is probable that as the pilot tried to get airborne, he could not apply and maintain sufficient force to counter the nose-down trim and, if the autopilot was engaged, this would have added to the control forces experienced.

Recorded data indicates a maximum groundspeed of 93 kt was reached during the takeoff roll which, when the reported winds were accounted for, would have corresponded to an airspeed of about 100 kt. This was sufficient for the aircraft to become airborne and is consistent with the pilot's estimate of the airspeed when he realised he was unable to control the aircraft in pitch.

An analysis of the first series of propeller strike marks on the runway indicated that the engine speed was approximately 1,440 rpm at that point. This was significantly less than the full power takeoff setting, consistent with the pilot's account that he had reduced the throttle to abort the takeoff. The aircraft was initially on the runway centreline but, despite the pilot's application of brake and rudder to try and keep it straight, he was unable to stop it drifting to the right as it decelerated. The separation of the nose gear would have made it difficult to maintain directional control, contributing to the aircraft leaving the runway surface. The aircraft left the paved surface with sufficient speed that when the remains of the nose landing gear leg dug into the soft ground it caused the aircraft to invert.

Elevator trim setting

When the aircraft was inspected at the accident site, it was observed that the pitch trim was set to the full NOSE DOWN position. For the trim to have moved to this position from the TAKE OFF position, it could only have been through direct action by the pilot or the passenger or commanded by the autopilot. The pilot recalled checking that the autopilot was OFF and that TAKE OFF trim was set as per the pre-flight checklist. His passenger was reported to have been attentive to following checklists and would prompt the pilot where required. As there was no electric trim switch on the passenger's control wheel, an electrically operated trim movement could only have been commanded by the pilot. The pilot reported that, on the ground, he would not operate the electric trim switches and would set TAKE OFF trim using the manual trim wheel. Had the pilot or his passenger forgotten to set TAKE OFF trim during the before takeoff checks, the trim would most likely have been in the configuration from the previous landing (slightly nose-up) which would not explain the full NOSE DOWN elevator trim as found after the accident. Therefore, the investigation considered it unlikely that the trim was set to this NOSE DOWN position by the pilot or the passenger before takeoff.

Electric trim runaway

The electric trim system was extensively tested by commanding pitch changes using the control wheel mounted switches, without the autopilot engaged, and it functioned normally. It was possible to deactivate the electric trim system by pulling its circuit breaker and it was therefore considered unlikely that an electric trim runaway could have occurred with the autopilot disengaged.

Autopilot induced pitch change

For the autopilot to have commanded a change to the pitch trim after it was set to TAKE OFF by the pilot, it would require an autopilot mode being armed and then the autopilot being engaged. During the pre-take off checks the pilot checked that the autopilot was OFF and that the controls were '*full and free*.' No further control wheel inputs were required until the pilot rotated the aircraft to take off. At about 70 kt the pilot noted that the "stick would not move" and he thought the autopilot was engaged. When the first responders arrived at the aircraft, they thought the autopilot was still ON despite the pilot switching off the aircraft master switch and thereby removing power to the AP engage switch solenoid, before he exited the aircraft. This action would have disengaged the autopilot but with the aircraft inverted it is possible that the switch position was mistaken. The photograph (Figure 3) supplied by the first responders showed the autopilot OFF. The investigation could not determine if the autopilot was engaged on the ground after the pre-take off checks.

The KFC 200 mode controller enables modes to be pre-selected without the autopilot being engaged. These modes remain pre-selected unless the mode switch is pressed again, or electrical power is removed. It was considered possible that a mode was consciously pre-selected by one of the occupants as part of preparation for the flight ahead, and that the autopilot switch was then inadvertently moved to the ON position without it being noticed. An engaged autopilot would have contributed to the resistance the pilot felt on the controls as he tried to rotate, consistent with his recollection that he felt like the autopilot was on.

In the KFC 200 Pilot's Manual and Pilot's Guide (Figures 8 & 9) both included a pre-flight test of the autopilot system whereby the TRIM annunciator light would flash at least four times to indicate the system was operating correctly. During the initial post-accident testing of the system fitted to N761JU, the TRIM light would only flash twice, indicating a fault in the auto-trim system. Following the reinstallation of the KA 117 pitch trim adaptor and more testing, the pre-flight test function started to return four flashes. This indicated that the fault in the auto-trim system was intermittent, and this aligns with the pilot's statement that on some flights (notably Sturgate to Fadmoor) the TRIM warning light would come on and sometimes it did not (Fadmoor to Leeds East).

The subsequent testing of the auto-trim system identified a fault with the KA 117 pitch trim adapter, which manifested in an intermittent TRIM warning light on the autopilot annunciator panel. Specialist testing of the KA 117 showed that it was outputting a continuous TRIM

UP command to the flight control computer. The test results did reveal a scenario where, with both the ALT HOLD mode armed and the autopilot ON, the autopilot would drive the elevator trim electrically NOSE DOWN and would continue to drive unless the autopilot was disconnected, or the up/down rocker switch on the autopilot panel, which moved the flight director bar up/down, was adjusted upwards.

The time taken for the elevator trim to drive from TAKE OFF to fully NOSE DOWN varied, ranging from between four minutes and 30 seconds and about three minutes during testing. More than four minutes elapsed between the completion of power checks on the taxiway and N761JU coming to rest inverted off the runway. This indicated that there was sufficient time for the autopilot to have commanded full NOSE DOWN trim by the time it came to rest inverted and the master switch was turned off.

It was not possible to determine the exact trim position at the time the pilot rejected the takeoff, but the investigation determined the accident could only have occurred if the autopilot had been engaged at some point after power checks had been completed and before N761JU commenced the takeoff roll. The investigation considered this scenario more likely than either the electrical trim system having experienced an uncommanded runaway, or the pilot setting the trim to the NOSE DOWN position before takeoff.

Detection of autopilot trim movement

If the autopilot had been inadvertently engaged before the pre-takeoff checks, it would have been detected by the pilot, since resistance would have been felt when moving the control wheel to complete the pre-flight control checks due to having to overcome the autopilot servos. Furthermore, it would also not have been possible to move the manual trim wheel to the TAKE OFF setting for the same reason.

Once the pre-takeoff checks had been completed there were no further checklist items related to the autopilot. Visual detection that the autopilot was engaged would have been by noticing the position of the AP switch or looking at the autopilot annunciator panel, which could have been obscured by the position of the control wheel. Autopilot trim changes in ALT HOLD mode, which moved the manual trim wheel, were pulsed and continuous over several minutes. Therefore, if the pilot were to look at the manual trim wheel with a quick, short glance, the trim wheel may have appeared stationary. The trim wheel is black in colour, located low on the centre instrument panel and set against black trim panels, which limited the opportunity to visually detect the movement. The sound of the servos operating the trim system would not have been audible to the pilot or the passenger with the engine running and whilst wearing a headset.

The rudder pedals were used to steer the aircraft along the taxiway and onto the runway, and with no crosswind present during the takeoff, no aileron deflection would have been required to compensate. With the autopilot ON, the control wheel would have felt ‘locked’ in position had it been moved. Accordingly, the first point at which the pilot would have discovered the out of trim position was when he attempted to pull back on the control wheel to lift off from the runway, at which stage he would have experienced significant resistance to his pitch input.

Autopilot installation

The pilot stated that he had been having an issue with the autopilot, notably that its “height keeping was less accurate than usual” on flights prior to the accident flight. The pilot’s knowledge of the autopilot system came from his own experience of using it and from conversations with a previous owner. The investigation found that the pilot was not aware that the TRIM warning light on the annunciator panel indicated a fault in the system. He believed it was an indication that the aircraft was out of trim and required pilot input to adjust the trim. This was based upon what he had been told by the previous owner. This belief was likely reinforced by the intermittent nature of the fault, which was also identified during the post-accident testing.

During the examination of the aircraft, it was found that the autopilot components installed were not in accordance with the STC. Different or additional components had been fitted, and some were mounted in different locations in the aircraft. The investigation considered that as the autopilot had been installed for nearly all of the aircraft’s life, there were no records of system modification, and it had functioned correctly, these deviations had little or no effect on the operation of the system. However, it was the KA 117 pitch trim adaptor (a component that was not included in the STC) which was identified as a potential source for the trim system to intermittently fail the pre-flight test, effect the ‘height keeping’ and illuminate the TRIM failure warning light. No visible defects could be found when the KA 117 was examined and so it was considered likely that the properties of an individual component, such as a capacitor, were degrading due to age and thus affecting the operation of the component.

The STC for the installation of the autopilot into N761JU stated that a Flight Manual Supplement should be included in the POH, but no document for the KFC 200 autopilot was found within the POH. Appended to the POH was the King Pilot’s Manual which referred to a ‘trim failure warning’ light on the annunciator panel and described a pre-flight test. The test defined the pass criteria but did not include any actions to be taken should the test fail. The updated Pilot’s Guide includes a similar pre-flight check and included General Emergency Actions for some failures including an electrical trim runaway. Neither publication explained what to do if the TRIM failure warning illuminated or any actions to be taken if the pre-flight test failed. The autopilot pre-flight test was not included in the homemade QRH, and the investigation did not establish if the pre-flight test was ever performed by the pilot.

There was no information readily available to the pilot or the previous owners, to inform them of a potential flight safety risk, or steps to perform in the event of the fault or any other failure relating to the autopilot or electric trim system.

Guidance and training

Autopilot systems have a significant impact on the operation of an aircraft due to their effect on the primary flying controls. By extension, an autopilot fault can have a major impact on the safe conduct of the flight, even when it is not planned to use the autopilot. The investigation found there was a general lack of guidance and advice regarding the use of autopilot systems fitted to GA aircraft to help pilots understand the implications of flying with an autopilot system fitted to their aircraft. This is particularly true on flying with an inoperative or faulty autopilot system as in the AAIB investigation into G-BJKW, and the steps required to quickly respond to system faults or emergencies such as trim runaways.

To help GA pilots understand best practice when using autopilot systems, the CAA is planning to produce a new webinar on best practice for the use of autopilots and how to respond to trim runaways. The publication of the webinar is planned for early 2026. In the interim period, the CAA plans to review their existing website content related to autopilots and trim runaways and promulgate a reminder to industry through their Skywise communication channels and Safety Notices.

The investigation also found that there is currently no requirement for a pilot with a single engine piston rating to undertake differences training on autopilots when transitioning to a new aircraft equipped with an autopilot system. The information on the CAA's website at the time of the accident about the differences training requirement was not as clear as it could be. As a result, the CAA has taken the following safety action:

> The CAA has consulted on proposals to amend the guidance material in the UK Aircrew Regulation on differences training that will incorporate specific elements for autopilots and electric trim. The CAA will be implementing changes from the General Aviation Licensing Review CAP 3094 during the last quarter of 2025.

The CAA has published guidance on its website in the form of Safety Sense Leaflets[6] and Safety Notices[7] covering a variety of GA subjects. These include awareness of risks associated with flying during winter, using electronic navigation aids such as 'moving map devices', carbon monoxide safety and fuel handling and storage considerations. Some of these have been published in response to themes identified from AAIB investigations, as well as feedback from pilots as part of CAA engagement activities. The investigation reviewed all the current safety guidance published by the CAA and it was considered that GA pilots would benefit from the readily accessible guidance on the best practice on the use of autopilots. The objective would be to improve knowledge and awareness of autopilot functionality, integration into appropriate checklists and procedures including pre-flight functional tests, and actions to take in the event of failures such as autopilot induced trim runaways or in-flight mode failures. Therefore, the following Safety Recommendation is made:

> **Safety Recommendation 2025-009:**
>
> It is recommended that the Civil Aviation Authority publish guidance and best practice on the use of autopilots in General Aviation aircraft to improve knowledge and awareness of autopilot functionality, normal procedures, and actions to take in the event of a failure.

Footnote

6 Safety Sense Leaflets | UK Civil Aviation Authority [accessed September 2025].
7 Safety notices | UK Civil Aviation Authority [accessed September 2025].

Survivability

The pilot, who was the least-restrained occupant, survived with only minor injuries, while the passenger sustained unsurvivable injuries despite having all his seat harness straps secured. Given the passenger was unresponsive after the aircraft came to rest, he was likely rendered unconscious by his head striking the cabin roof as the aircraft came to rest inverted. The cervical spine fractures sustained were indicative of a sudden compressive force transferred into the spinal column from impact forces imparted to his head.

In trying to understand why the pilot suffered less-serious injuries than the passenger, the investigation considered it likely that:

- Because the pilot's upper torso was unrestrained, it would have pivoted forward as the aircraft rapidly decelerated and inverted after leaving the runway (Figure 16a).
- The passenger's upper torso would likely have remained more erect, restrained by the shoulder strap (Figure 16b).
- As the aircraft landed on its roof, the pilot's head and torso would have moved rearwards and down in an arc, leading to a more tangential head impact (Figure 16c).
- Any movement of the passenger in his straps would have been primarily vertical in nature leading to an impact with the roof along the axis of his spine (Figure 16d).

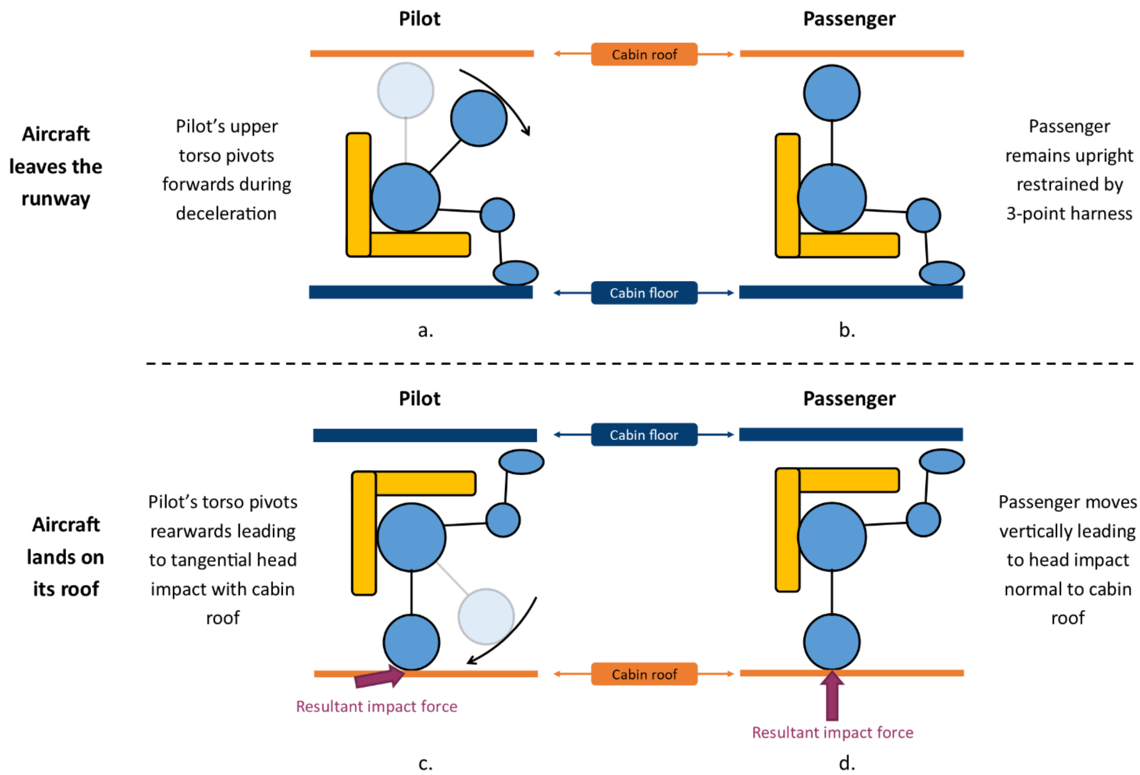

Figure 16

Analysis of potential body movement during later stage of accident sequence

It was not possible to determine how tight the passenger's lap strap had been during the accident nor what clearance existed above his head when he was sat upright and was strapped in for the accident flight. Any slack in either occupant's lap straps would have increased the potential for vertical movement away from the seat cushion once they were inverted, thereby further reducing clearance from the cabin roof. Notwithstanding the circumstances of this accident, it is prudent that pilots ensure that during critical stages of flight all restraint harnesses are sufficiently fastened and tight, but do not restrict the pilot's ability to reach all controls and switches in the cockpit. This is because, overall, the correct use of harnesses can reduce the extent of injuries sustained during an accident.

Conclusion

The investigation found the accident was the result of attempting to takeoff with the aircraft pitch trim set to full NOSE DOWN. The forces required to rotate the aircraft would have been high due to the aerodynamic loads and potentially further exacerbated by having to overcome the autopilot servos. The pitch trim setting was most likely caused by an intermittent latent fault within the autopilot system, but this required the autopilot to be ON with the ALT HOLD mode selected. The investigation was not able to determine how or why these modes were selected and engaged before the aircraft took off.

The pilot appropriately rejected the takeoff, but after the nosewheel broke away he was unable to control the aircraft's ground track, which resulted in the runway excursion. The investigation considered the runway excursion would have been less likely had the nose landing gear remained intact and that the passenger would likely have survived but for the subsequent inversion of the aircraft. The investigation found the loss of the nosewheel was a contributory factor to the aircraft coming to rest inverted after it left the paved surface.

The passenger suffered fatal spinal injuries, despite having his full harness fastened, while the less-restrained pilot survived with only minor injuries. The injuries sustained by the passenger were thought to have occurred because of an impact to the top of head when the aircraft inverted. While it was not a proven factor in the fatality, the investigation considered it prudent to remind all pilots and passengers of the vital importance of ensuring their seat harnesses are fully secure for critical phases of flight.

The POH and QRH did not contain any checks to enable the pilot to identify the fault in the autopilot. Neither did they include any actions to take in the event of an autopilot fault. There was a pre-flight autopilot check detailed in the POH-appended Pilot's Manual which would have identified the fault, but it did not include any appropriate remedial actions. The pilot's knowledge of the autopilot was based upon his own experience of using it and through conversations with the previous owner. This proved to misinform the pilot on the function of the TRIM warning light.

The investigation considered that there was a lack of guidance and advice to pilots regarding the use of autopilots in GA aircraft. Furthermore, there was no explicit requirement in differences training to include the use of autopilots. As a result, the CAA has taken two safety actions, and a Safety Recommendation has been made.

Safety actions taken

The following safety actions have been taken by the CAA:

> The CAA has consulted on proposals to amend the guidance material in the UK Aircrew Regulation on differences training that will incorporate specific elements for autopilots and electric trim. The CAA will be implementing changes from the General Aviation Licensing Review CAP 3094 during the last quarter of 2025.

Safety Recommendations

The following Safety Recommendation has been made to the CAA:

> **Safety Recommendation 2025-009:**
>
> It is recommended that the Civil Aviation Authority publish guidance and best practice on the use of autopilots in General Aviation aircraft to improve knowledge and awareness of autopilot functionality, normal procedures, and actions to take in the event of a failure.

Appendix 1

Locn (Fig 17)	Model Number (STC)	Description (STC)	Part Number (STC)	Model Number (Actual)	Description (Actual)	Part Number	Serial Number	Notes
1	KG 258	Attitude horizon indicator	060-0020-07	KG 258	Attitude horizon indicator	Unknown	Unknown	
2	KS 271A	Roll servo	065-0060-01	KS 271A	Roll servo	Unknown	Unknown	Behind instrument panel
3	KI 525A	Pictorial navigation indicator	066-3046-00 or -01 or -07	KI 525A	Pictorial navigation indicator	Unknown	Unknown	
4	KC 290	Mode controller	065-0033-01	KC 290	Mode controller	Unknown	Unknown	
5	KA 285	Annunciator panel	065-0032-01	KA 285	Annunciator panel	Unknown	Unknown	
6	KG 102A	Directional gyro	060-0015-00	KG 102A	Directional gyro	060-0015-00	31533	
7	KS 272A	Pitch trim servo	065-0061-31	KS 273	Trim servo	065-0040-00-R04	1207	
8	KC 295	Flight computer	050-0034-09 & 065-5014-53 Adapter Board	KC 295	Flight computer	065-0034	8248	Adapter Board 28
9	KS 270A	Pitch servo	065-0059-04	KS 270A	Pitch servo	065-0059-04	24720	
10	K 51B	Slaving accessory	071-1242-01	K 51A	Slaving meter			
11	KM 112	Magnetic azimuth transmitter	071-1052-00	KMT 112	Magnetic azimuth transmitter	071-1052-00	5358	
12	KA 142	Pitch trim adaptor	065-5020-01	KA 117	Pitch trim adapter	065-5006-01-R08	1173	
12				KA 118	Demodulator	071-1095-00-R	1410	

Table 1

Autopilot STC components versus aircraft survey

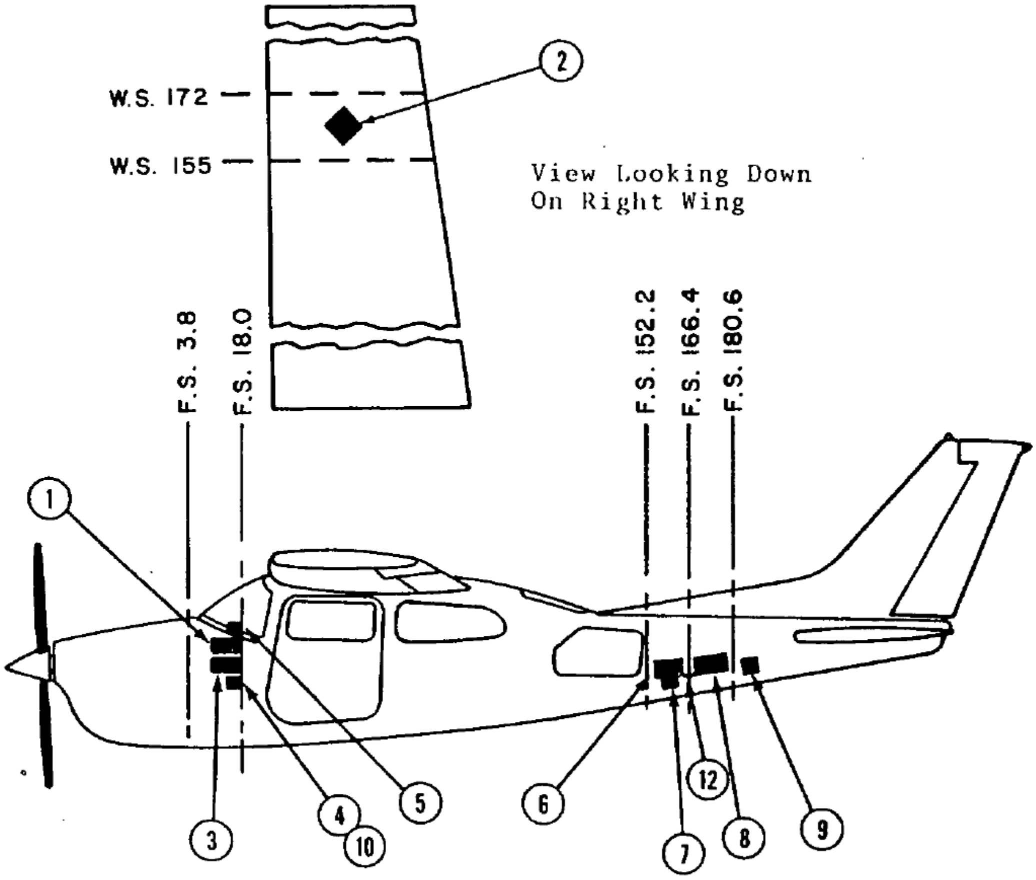

Figure 17
Location of autopilot components (refer to Table 1)

Published: 6 November 2025.

Accident

Aircraft Type and Registration:	1) Discus B, G-DJMD 2) Standard Cirrus, G-DCTB
No & Type of Engines:	1) None 2) None
Year of Manufacture:	1) 1988 (Serial no: 241) 2) 1972 (Serial no: 264G)
Date & Time (UTC):	25 May 2024 at 1400 hrs
Location:	Hinton-in-the-Hedges Airfield, Northamptonshire
Type of Flight:	1) Private 2) Private
Persons on Board:	1) Crew - 1 Passengers - None 2) Crew - 1 Passengers - None
Injuries:	1) Crew - 1 (Fatal) Passengers - N/A 2) Crew - 1 (Serious) Passengers - N/A
Nature of Damage:	1) Impact damage to lower forward fuselage, tailplane and wings, and broken canopy 2) Impact damage to fuselage and tail. Broken canopy, damage to tailplane, wing leading edges, wing surfaces and wingtips
Commander's Licence:	1) BGA Gliding Certificates, Bronze and Cross-Country endorsements and Silver Badge 2) BGA Gliding Certificates, Bronze and Cross-Country endorsements and Silver Badge
Commander's Age:	1) 45 years 2) 29 years
Commander's Flying Experience:	1) 129 hours (43 hours on type) Last 90 days - 5 hours Last 28 days - 5 hours 2) 104 hours (4 hours on type) Last 90 days - 3 hours Last 28 days - 2 hours
Information Source:	AAIB Field Investigation

Synopsis

Having completed their flying tasks in a local club competition, gliders G-DJMD and G-DCTB returned to Hinton-in-the-Hedges airfield, and both aircraft manoeuvred to the north-east of the airfield in preparation for an approach to land. The competition required pilots to report their position on the radio when downwind and when on final, but neither pilot was heard to do so, meaning a critical opportunity to alter the outcome was missed, and they remained unaware of each other's presence until they collided on short final. The pilot of G-DCTB suffered serious injuries. The pilot of G-DJMD was struck by G-DCTB's wingtip during the collision and the glider then struck the ground in an inverted attitude. The pilot of G-DJMD suffered fatal injuries.

The investigation identified the following causal factor related to the collision:

- The pilots did not effectively communicate their location or intentions on the radio, and the unalerted 'see-and-avoid' principle was insufficient for either of them to be aware of the presence of the other in time to take avoiding action when joining the circuit and on final approach.

The investigation made the following findings:

- When an aeronautical radio station is licensed and approved to provide an Air Ground Communication Service, the service must be provided inside published hours of operation, unless promulgated otherwise by NOTAM or other suitable means.
- Glider pilots must hold a Flight Radiotelephony Operator Licence if they communicate with an air traffic control or flight information unit, or an Air Ground Communication Service.

Safety action was taken by:

- The Civil Aviation Authority (CAA) to remind radio licensees of their obligation to provide the service approved on their licence, and to ensure that approvals under the Air Navigation Order accurately reflected the responsibilities of licence holders.
- The British Gliding Association (BGA) to promulgate information on the avoidance of midair collisions.
- The respective gliding clubs to clarify their requirements for the use of radios by pilots.

History of the flight

The gliders were competing in an inter-club event at Hinton-in-the-Hedges Airfield. The competition involved navigating a fixed course task with designated turn points. Pilots were grouped into three categories: Novice, Intermediate, and Pundit. The pilot of G-DJMD competed in the Intermediate Class, tasked with a 156 km course, while the pilot of G-DCTB was in the Novice Class, assigned a shorter route of 118 km. The primary distinction between classes was the course length.

Forecasts had indicated that the weather on the competition day might be unsuitable for the planned activity. However, while conditions proved better than expected on the day, the organiser shortened the courses as a precaution[1]. At 0900 hrs, the competition director

Footnote

[1] Intermediate class shortened from 156 km to 117 km; Novice class shortened from 118 km to 81 km.

briefed all pilots on the weather forecast, task details, local airfield procedures, and safety measures. The pilots were instructed to make radio calls on the Hinton Radio[2] frequency, reporting their positions on downwind, base leg and when turning final. Hinton operations included freefall parachuting, powered aircraft, and gliding activities. Gliders were to launch from Runway 09 (grass), with landings permitted on Runway 06 (grass or hard) (Figure 1), or on Runway 09 (grass) if clear of launching gliders. To avoid conflict with a parachute drop aircraft, which was planned to operate throughout the day, glider pilots were directed to fly left-hand circuits to the runways. The drop aircraft flew right-hand circuits.

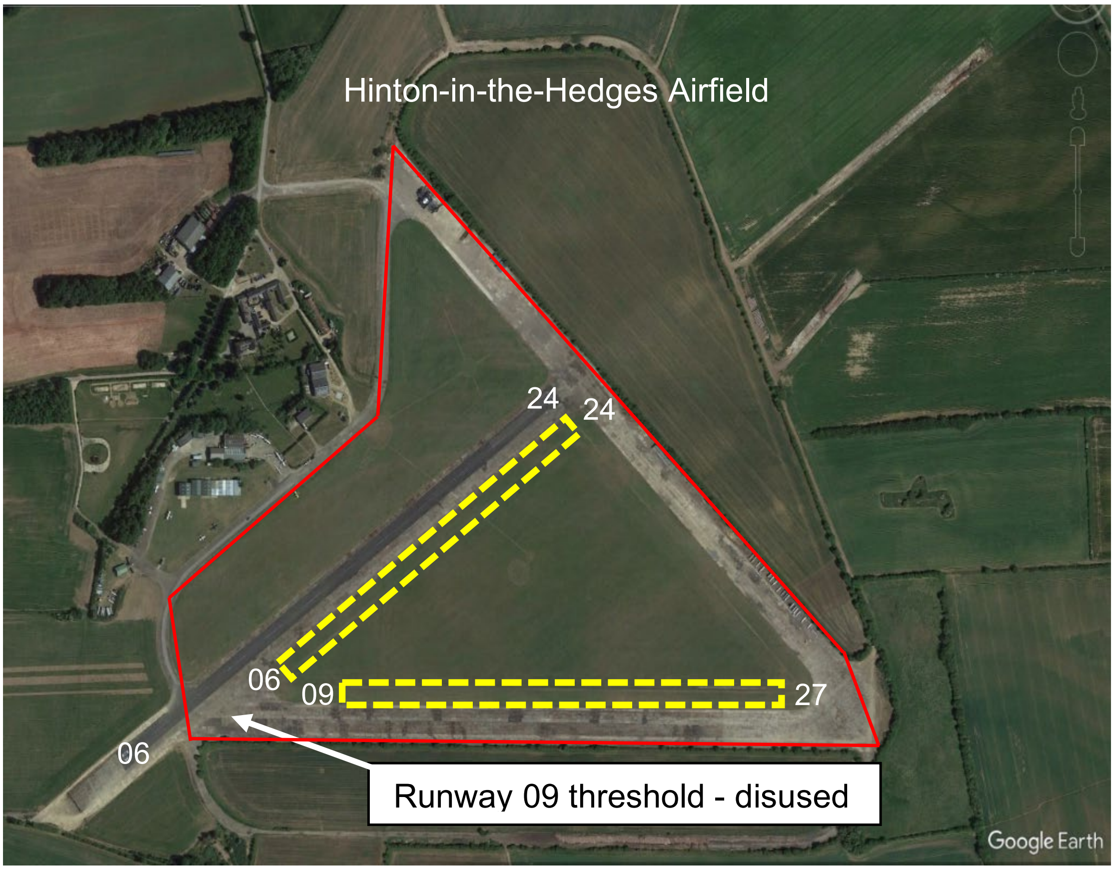

Figure 1

Hinton-in-the-Hedges runway layout and parachute landing area (bounded in red)

G-DJMD launched first at 1236 hrs, followed by G-DCTB at 1319 hrs. The task sent the gliders southwards on separate routes before eventually converging at Banbury, nine km to the north-west of Hinton. To complete the race the pilots had to cross a 3 km radius ‘finish ring’ centred on Hinton, at or above 1,500 ft aal. The radius encompassed likely landing circuits, while the minimum altitude ensured sufficient height for manoeuvring to position to land after finishing the task.

Footnote

2 The suffix ‘Radio’ denotes an Air Ground Communication Service (see later section on airfield communications).

At 14:39:51 hrs G-DJMD crossed the finish ring west-north-west of Hinton at an altitude of 2,300 ft (1,900 ft aal). G-DCTB crossed the ring to the west of Hinton at 14:45:05 hrs, at an altitude of 1,400 ft (1,000 ft aal) (Figure 2). G-DJMD then descended in a series of orbits near Farthinghoe, while G-DCTB continued briefly on a straight track, descending towards Hinton, before turning north-east. Both gliders then positioned on a downwind leg for a left-hand circuit (Figure 3).

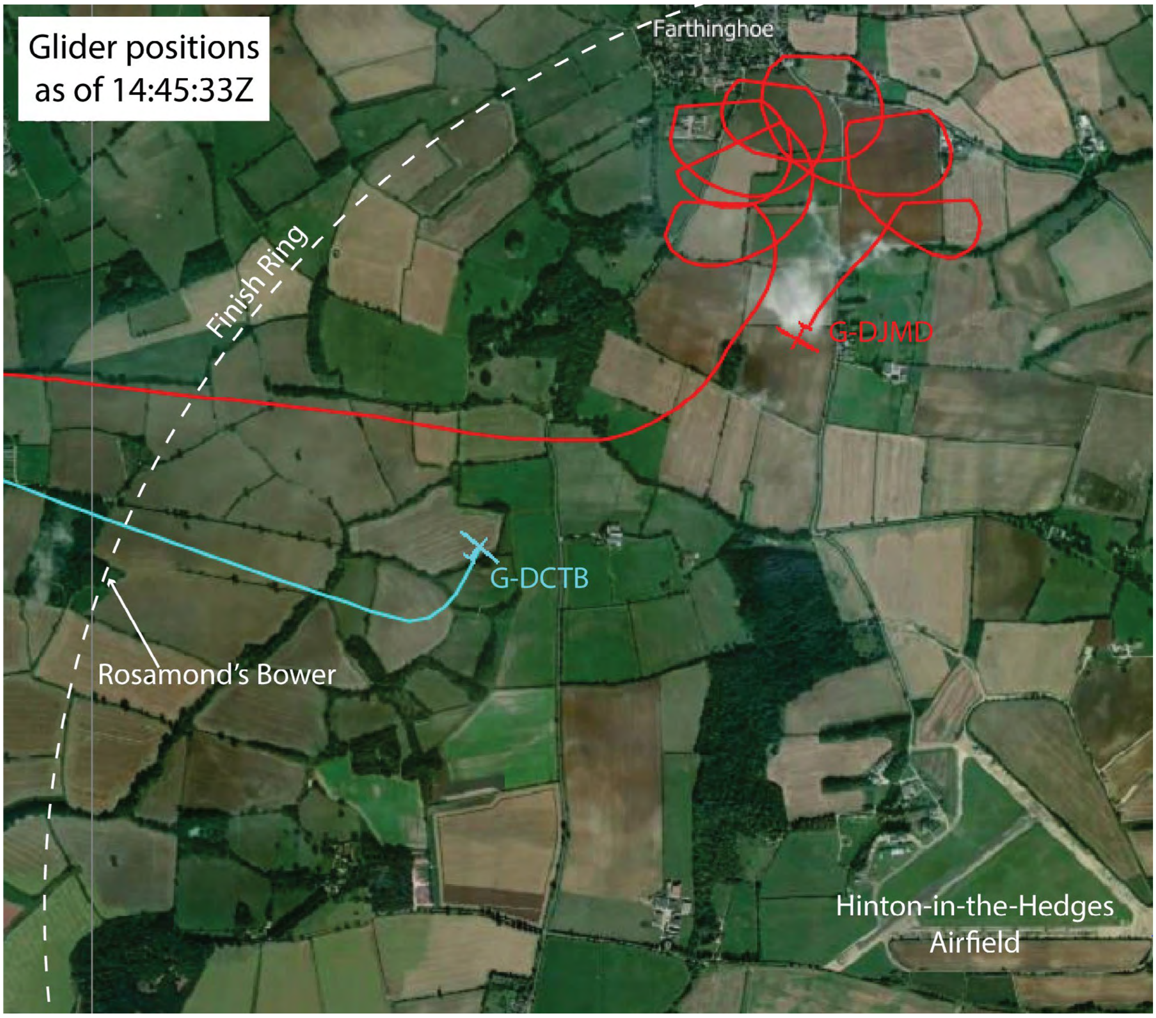

Figure 2

Relative positions of G-DJMD and G-DCTB as they positioned to join downwind

At approximately the same time, the pilot of the parachute drop aircraft, having despatched his jumpers[3], positioned to join the circuit on right base for Runway 06 (hard). When descending through 800 ft on final, he observed a glider on a "tight left base" for Runway 06 just below his level. He transmitted on the Hinton Radio frequency, "glider, are you going in ahead of me?", receiving the response, "I'm number one". The pilot acknowledged the radio call and initiated a turn to the left to position behind the glider. As he turned, he saw another glider, that appeared to be aligned with Runway 09, slightly behind but level with the first.

Footnote

[3] All parachutists had landed and cleared the parachute landing area approximately two minutes before the gliders collided.

He reported hearing an “unintelligible transmission” on the radio then continued in a wide left turn to position behind both gliders. Upon re-establishing on final, he reported seeing one glider’s wing “flip”, with the glider rolling inverted over the threshold of the disused Runway 09 before striking the ground.

A witness near the threshold of Runway 09 (grass) observed two gliders approaching the airfield and was able to identify them by type. G-DJMD was lined up with Runway 06 (grass) and G-DCTB was slightly lower and ahead on a shallower approach profile, apparently lined up with Runway 06 (hard). As they approached the airfield boundary, G-DCTB made a “shallow right turn” towards Runway 09 (grass), which was occupied with three gliders waiting to launch. G-DCTB’s airbrakes were observed to be closed or partially closed. The manoeuvre placed G-DCTB on a conflicting path with G-DJMD.

The gliders collided at approximately 20 to 30 ft above the intersection of Runway 06 (hard) and the disused Runway 09 threshold. On collision, G-DJMD pitched up rapidly then rolled right until inverted before striking the ground in an inverted attitude. G-DCTB came to rest upright but entangled with G-DJMD.

Another witness at the north-west of the airfield, some 250 m distant, observed an approaching glider lined up with Runway 06 (grass) with its airbrakes open, and another glider lined up with Runway 09 at an offset of approximately 30°. They converged and collided approximately 30 ft above the ground. One glider pitched up, rolled inverted, then pitched down, its canopy detaching before impact with the ground[4].

Competitors and officials provided immediate assistance, followed promptly by emergency services. The pilot of G-DJMD suffered fatal injuries, while the pilot of G-DCTB sustained serious injuries.

Accident site

Both gliders struck the ground at the western end of disused Runway 09. G-DCTB came to rest upright, facing across the runway to the right. G-DJMD came to rest inverted, with its nose close to the tail of G-DCTB, and its left wing leading edge lodged underneath the airbrake cover of G-DCTB’s right wing.

A debris field of approximately 70 m preceded the gliders, beginning near the intersection of Runway 06 and disused concrete Runway 09. The debris comprised pieces of canopy transparency, instrument panel coaming, wingtip, aircraft skin, and personal effects.

Recorded information

FLARM data

Both G-DCTB and G-DJMD were equipped with FLARM installations, a traffic and collision warning system, from which track data leading up to the accident were recovered for both gliders. Figure 3 shows these tracks, at a number of points in time, as the gliders approached Hinton airfield, until the point that they collided. Between t-15s and the last

Footnote

4 Additional witness evidence is covered in a later section.

data point, G-DCTB had a recorded ground speed 15 kph faster than G-DJMD. Historical data for each FLARM installation was checked using historical data, and this indicated both units had a satisfactory detection range with no significant blind spots.

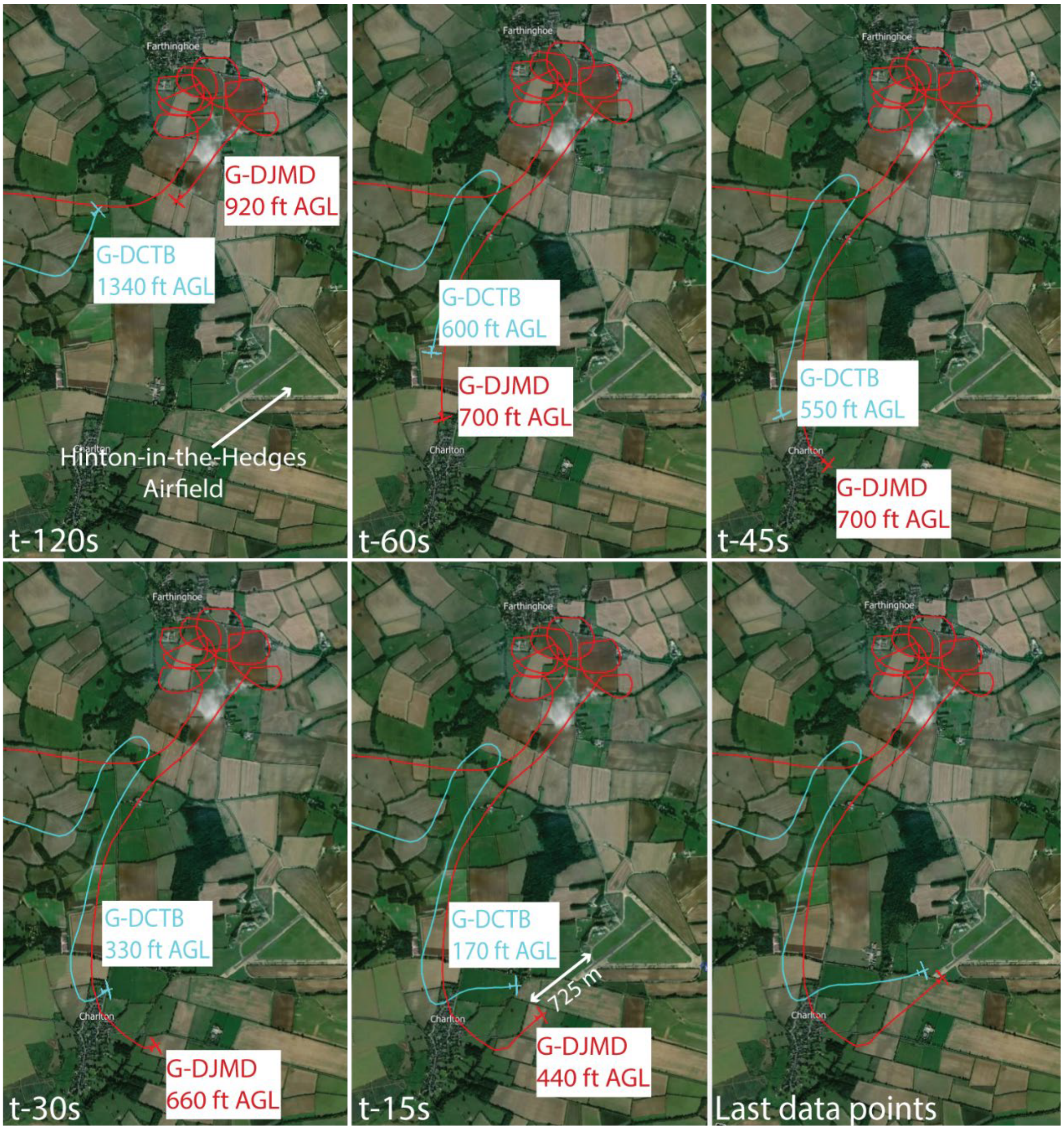

Figure 3

Relative positions of G-DJMD and G-DCTB over the last 120 seconds prior to the accident

Radio tests

Both G-DCTB and G-DJMD were equipped with VHF radios. These were recovered from the wreckage and initially powered on at the AAIB to establish the last tuned radio frequency before being sent to the manufacturer for detailed functional testing. Both radios were successfully powered-up and the last frequency tuned on both devices was found to be 119.455 MHz, the frequency for Hinton-in-the-Hedges. The radio from G-DJMD was extensively damaged during the accident, was internally contaminated with dirt, and some of the circuitry had suffered corrosion, most likely following the accident; when tested at the manufacturer's facilities, it was unable to either receive or transmit a signal. The radio from G-DCTB was able to transmit and receive a signal and successfully passed all the manufacturer's functional tests.

The wiring from each radio head unit to its antenna was checked for electrical continuity, in addition to checking the press-to-talk switches and loudspeakers. No faults were found on either glider. The microphone from G-DCTB was also tested and found to function correctly, but it was not possible to establish whether the microphone from G-DJMD worked because it had been damaged. The testing was limited to the radios themselves and did not include their power supplies, which were not tested on site and which would have been somewhat depleted subsequently.

Other avionics

G-DJMD was also fitted with a Kanardia EMSIS, an instrument used to provide the pilot with an artificial horizon, speed and heading information. This unit was disassembled, as it records flight data including aircraft track and orientation, and several flights worth of data were successfully retrieved from its onboard non-volatile memory. However, the accident flight was not recovered. The manufacturer commented that a firmware update, to fix a known issue with correctly recording the GPS date, had not been applied and that some of the memory space reserved for recordings appeared corrupted; this may have affected the recording of the accident flight.

Aircraft information

G-DJMD: Schempp-Hirth Discus B

The Discus B is a single-seat glider constructed from carbon fibre and fibreglass. It has a 15.0 m wingspan, upturned wingtips, and a T-tail with fixed horizontal stabiliser and elevator. Flying controls are operated by a central control stick and rudder pedals. The glider is equipped with a retractable, single-wheel main landing gear, fixed tailwheel, and airbrakes. In G-DJMD the pilot was secured by a five-point harness and wore a parachute. There was an additional foam cushion located underneath the seat.

G-DJMD was manufactured in 1988, had 2,254 hours at its last inspection, and held a valid Airworthiness Review Certificate (ARC). Its paintwork was white and it displayed the competition number P23 (Figure 4).

Figure 4

G-DJMD (image used with permission)

G-DCTB: Schempp-Hirth Standard Cirrus

The Standard Cirrus is a single-seat glider constructed from fibreglass. It has a 15.0 m wingspan with straight wingtips, and a T-tail with an all-moving tailplane. Flying controls are operated by a central control stick and rudder pedals. The glider is equipped with a retractable, single-wheel main landing gear, fixed tail bumper, and airbrakes. In G-DCTB the pilot was secured by a four-point harness, wore a parachute, and was seated on a foam cushion.

G-DCTB was manufactured in 1972, had 3,128 hours at its last inspection, and held a valid ARC. It had red paintwork on the nose cone, wing tips, and the bottom and top of the rudder. G-DCTB displayed the competition number 579 (Figure 5).

Figure 5

G-DCTB (image used with permission)

Aircraft examination

G-DJMD

Fuselage and Canopy

G-DJMD had come to rest inverted. The fuselage was intact and had abrasion damage from contact with the runway surface. The nose section had broken from top to bottom and had red paint transfer on its left side. There was further red paint transfer on the left side of the canopy in two places. The main gear wheel was found in the retracted position.

An upper section of composite instrument panel coaming was found approximately 45 m prior to the fuselage, and the instrument panel was found adjacent to the glider.

The canopy transparency had fractured into many pieces, which were found scattered the length of the debris field. The canopy's frame had broken in three places; at both front bend points and at the top of the rear 'hoop'. The frame pieces were found next to the fuselage.

Tail

The tail section was intact but had been abraded from contact with the runway surface when inverted. The rudder pedal controls were connected to the rudder via cables and control tubes, and there was control system continuity between the control stick and elevators. All control surfaces moved freely.

Wings

The left wing's leading edge at its mid-span position was wedged underneath the air brake cover on G-DCTB's right wing upper surface. Both wings were intact and had abrasion damage from contact with the runway surface. The right wing leading edge had a contact damage point; from which the leading edge had split along its length.

Control system continuity was established between the control stick and the ailerons. The air brake lever could be rotated and moved fore and aft, but this did not move the air brakes which were in the deployed position.

G-DCTB

Fuselage and Canopy

G-DCTB came to rest upright. The tip of the nose had impact damage and the fuselage frame behind the cockpit was distorted and cracked in a manner suggesting it was subject to a hard upward force upon landing. The main gear wheel was found in the retracted position, likely from the landing force. The sides of the cockpit area had also split from the landing force. The seat had come away from some of its mounting points but was intact.

The canopy frame was broken, and the canopy transparency had fractured. The majority of the canopy pieces were found in the immediate vicinity of the fuselage.

Tail

The glider's tail boom structure was broken. The rudder control rod was intact and connected at both ends, although bent and damaged where the tail boom was broken. Control continuity was established between the rudder pedals and the rudder.

The controls for the all-moving tailplane were intact and free to move from the control stick to the break in the tail and were connected to the tailplane past the break. The tip of the left tailplane was missing and was in the preceding debris field approximately 8.5 m from the fuselage.

Wings

The right wingtip had impact damage; a section of the underside wingtip skin had become detached and was found approximately 40 m further back in the debris field (Figure 6).

Figure 6

G-DCTB right wingtip damage, and underside wingtip skin section

The right wing's leading edge was covered with heavy black marking, that extended to both upper and lower surfaces (Figure 7).

Figure 7

G-DCTB leading edge marks

Control continuity was established between the pilot's control stick and the ailerons, and the air brake lever and the air brakes. Both connecting systems of control tubes and linkages were subject to damage likely sustained on landing. The air brakes were in the retracted position.

Survivability

Both pilots wore parachutes; there is no regulation covering the use of emergency parachutes although there is a BGA Operational Regulation that requires glider occupants to carry emergency parachutes when flying in cloud and their use is considered a reasonable precaution. The proximity of the gliders to the ground when they collided would have precluded safe and effective use of a parachute in this situation.

G-DJMD was equipped with a five-point harness, and G-DCTB was equipped with a four-point harness. Both pilots were wearing these correctly and the pilots were effectively restrained in their seats. G-DJMD struck the ground inverted; despite the harness, this circumstance was not survivable.

Both gliders had a separate, locally manufactured, high-density foam seat cushion. In G-DJMD it was located underneath the seat, and in G-DCTB it was on top of the seat. It is probable that the cushion provided an additional level of impact protection to the pilot of G-DCTB, although it was not possible to quantify by how much. The BGA provides information on the benefits of using energy-absorbing cushions in gliders to help protect the spine[5].

Meteorology

An aftercast provided by the Met Office described the prevailing conditions on the day of the accident:

> *'The afternoon of the 25th of May, would see generally settled conditions across much of the UK, including the area of interest. A frontal system, with associated precipitation would be affecting the East Midlands and East Anglia, with another system moving into the Southwest*
>
> *The area of interest was sandwiched between those two frontal systems and looking at a variety of sites surrounding the area, the conditions could be described as settled with light southeasterly winds, visibility in excess of 10 km, with cloud bases around 4000 to 4500 ft".*

Photographs provided to the AAIB by witnesses showed conditions at Hinton airfield on the afternoon of 25 May 2024 that confirmed the Met Office analysis.

Footnote

5 Why you should fly with an energy-absorbing safety cushion, Edition 2, March 2017, BGA https://members.gliding.co.uk/wp-content/uploads/sites/3/2015/04/Safety-Foam-ed2.pdf [accessed 5 August 2025].

Aeronautical radio stations

The CAA publishes CAP 452, '*Aeronautical Radio Station Operator's Guide'*[6], which is intended to provide the main reference document for aeronautical radio station operators. It presents two levels of communication service that might be appropriate for an unlicensed airfield with a dedicated frequency: an Air Ground Communication Service (AGCS) and an Operational Control Communication (OPC) Service.

AGCS

Where an AGCS is provided,

> *'radio station operators provide traffic and weather information to pilots operating on and in the vicinity of the aerodrome. Such traffic information is based primarily on reports made by other pilots. Information provided by an AGCS radio station operator may be used to assist a pilot in making a decision; however, the safe conduct of the flight remains the pilot's responsibility'.*

When provided, an *'AGCS is to be made available to aircraft during notified hours'.*

OPC

An OPC is an,

> *'…aeronautical radio station which is licensed and established for company operational control communications. It may be used only for communication with company aircraft, or aircraft for which the company is the operating agency'.*

On their website[7], the CAA states that the category of OPC also includes all areas of recreational aviation, including:

> *'…associations, clubs, societies and individuals operating gliders, hang gliders, para gliders, paramotors, microlights, parachutes, balloons, gyroplanes and simple single engine aeroplanes'.*

where,

> *'Aeronautical radio stations, comprising fixed, mobile, portable and hand-held radio equipment, are typically established and operated by these clubs, societies and individuals to provide radio communications with aircraft for the exchange of messages related to the particular recreational aviation activity'.*

However, the CAA clarified that this service cannot be used for visiting general aviation, recreational aviation and other aircraft which are not operated by the company licensed to provide the OPC service.

Footnote

6 https://www.caa.co.uk/publication/download/15805 [accessed 5 August 2025].
7 Available at https://www.caa.co.uk/Commercial-industry/Airspace/Communication-navigation-and-surveillance/Aeronautical-radio-stations/ [accessed 28/05/2025].

Airfield information

Hinton-in-the-Hedges is an unlicensed airfield located approximately 4 km west of Brackley, Northamptonshire, at an elevation of 505 ft amsl (Figure 8). It is owned and operated by a private company.

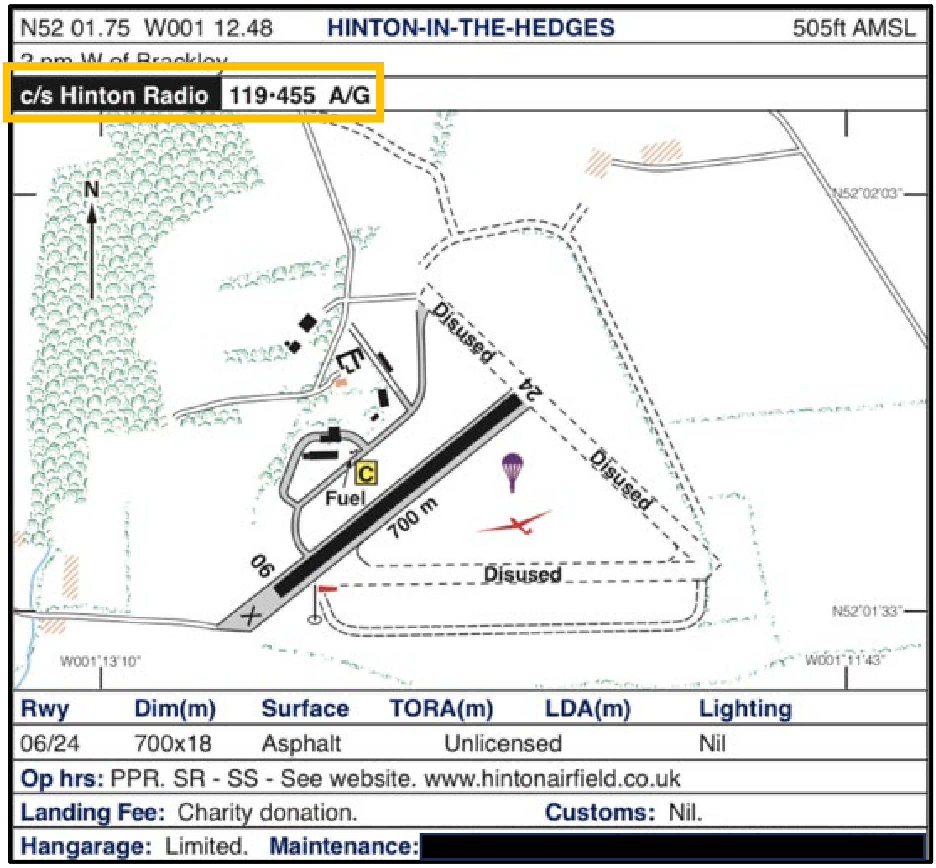

Figure 8

Hinton-in-the Hedges Airfield (© Pooleys, 2023)

Airfield operations

The airfield accommodates a gliding club, a skydiving operator, and several private aircraft owners. To ensure effective deconfliction of gliding and parachuting activities, the airfield Operations Agreement sets out a process in which the Duty Instructor of the gliding club liaises with the parachute Drop Zone Controller prior to operations. During this meeting, separate operating areas are established. Annotated maps reflecting these arrangements are signed by all relevant parties, disseminated within their respective organisations, and displayed at the airfield fuel pumps for other airfield users.

Should operational circumstances require any amendment to these arrangements, all signatories are notified and the maps are updated. The amendments must be signed by the involved parties prior to the continuation of activities.

This process was followed on the day of the accident.

Airfield communication

Hinton Airfield's Aeronautical Station Radio Licence, for an AGCS, was first issued in May 1993 by the Office of Communication (Ofcom) under the Wireless Telegraphy Act and had been renewed annually. The original allocated frequency was 119.450 MHz, with the callsign 'Hinton Radio'. In 2018, this was amended to 119.455 MHz to comply with the transition from 25 kHz to 8.33 kHz channel spacing. The use of the radio equipment and the service provided were subject to approval by the CAA under Article 205 of the Air Navigation Order[8]. The approval was non-expiring after initial issue and not subject to further oversight by the CAA.

The skydiving operator used a radio base station to communicate with their drop aircraft, while the gliding club used handheld radios to coordinate gliding activities. All radios operated on the frequency 119.455 MHz. Hinton airfield users routinely used the callsign 'Hinton Traffic' for radio calls, although the approved callsign suffix for an AGCS is 'Radio'. The entry in Pooleys Flight Guide for Hinton airfield had been annotated with the callsign '*Hinton Radio'* (Figure 8) since 1993.

Radio callsigns typically comprise the airfield's geographical location followed by a suffix to identify the type of service pilots are receiving. The suffix 'Traffic' is associated with the Safetycom frequency (135.480 MHz), which is reserved for use at unattended aerodromes without an allocated frequency. Safetycom does not provide an air traffic service and is not linked to any aeronautical ground station; its main purpose is to enable pilots to communicate their intentions to other aircraft operating at or near the aerodrome[9].

Following a fatal accident in 2002, in which a glider collided with a freefall parachutist at Hinton[10], the airfield owner implemented enhanced radio procedures to improve on-airfield communications. This included mandating radios for all users and requiring position calls in the circuit. The airfield's website stated under '*terms of use*':

> *'Hinton is an unlicensed airfield, therefore Unlicensed Rules apply.*
>
> *Maintain a good listening watch on Hinton Radio 119.45 which is a traffic frequency only.*
>
> *Normal "Arrival, Circuit & Departure" radio calls to be made to "Hinton Traffic". Do not expect a reply'.*

Although the owner had held an AGCS licence since 1993, they mistakenly believed, or had been incorrectly advised, that providing the service was optional and that they could operate as a recreational service using the dedicated frequency for traffic radio calls. During annual licence renewals, Ofcom advised that it was a condition of the Wireless Telegraphy

Footnote

[8] Air Navigation Order (2016) (SI 2016/765), Chapter 5, Air traffic service equipment, Article 205. Available at: https://www.legislation.gov.uk/uksi/2016/765 [accessed 4 August 2025].

[9] See Civil Aviation Publication 413: Radiotelephony Manual, Edition 23, 26/11/20. Available at: https://www.caa.co.uk/publication/download/18165 [accessed 4 August 2025].

[10] AAIB report: Schleicher Ka-8B, FKJ, 1 June 2002 - GOV.UK [accessed 4 August 2025].

Act 2006 that where the licensee of an aeronautical station was providing a service approved under the ANO, the station must be operated in accordance with that approval. Despite the licence terms, the owner prioritized retaining their established frequency, citing safety concerns over "downgrading" to a general frequency if the licence terms were amended and they reverted to Safetycom.

The AAIB found that although Ofcom had issued an Aeronautical Station Radio Licence for an AGCS at Hinton since 1993, and the CAA had approved its operation under Article 205 of the ANO, the licence holder – and other organisations using the allocated frequency - had never provided a level of service fully compliant with the ANO approval and CAP 452 standards.

Radio operators

Article 202 of the ANO[11] requires that radio operators transmitting on an AGCS frequency must hold an unrestricted Radio Operator's Certificate of Competence (ROCC), issued by the CAA and approved by the licence holder. Personnel transmitting on the Hinton Radio base station used by the skydiving operator to communicate with the drop aircraft, and handheld radios used by the gliding club to manage their activity, did not hold unrestricted ROCCs.

One radio operator held a Parachute Radio Operator's Certificate of Competence (Restricted) which allows transmission on only two frequencies allocated to the British Parachute Association (BPA)[12]: one for communication between the drop zone control and the drop aircraft, a second between drop zone control and parachutists. Neither of those frequencies were used at Hinton.

Pilots

It is a requirement in most circumstances when operating an aeronautical radio for pilots to hold a Flight Radiotelephony Operator Licence (FRTOL). Glider pilots and student pilots under training are, subject to certain conditions, exempt from the requirement to hold a FRTOL under Article 139 of the Air Navigation Order 2016. However, glider pilots without a FRTOL are not permitted to use the radio to communicate with an air traffic control unit, flight information unit or an AGCS. The level of service that is approved on the published frequency allocation is what determines the need for holding a FRTOL.

Neither of the pilots involved in the accident held a FRTOL.

Footnote

11 Air Navigation Order (2016) (SI 2016/765), Chapter 4, Certificate of competence to operate an aeronautical radio station, Article 202. Available at: https://www.legislation.gov.uk/uksi/2016/765 [accessed 5 August 2025].

12 Allowed frequencies: 129.905 MHz and 130.530 MHz - See Civil Aviation Publication 660: Parachuting, Fifth edition, March 2020, available at: https://www.caa.co.uk/publication/download/12329 [accessed 5 August 2025].

Radio communications on the day of the accident

Multiple witnesses, in a position to monitor radio transmissions, consistently reported deficiencies in radio communication on the day of the accident. Notably, several witnesses reported that they did not hear any radio calls from the accident pilots indicating their intentions. The pilot of G-DCTB recalled that he made a downwind radio call, but not if he made a call on base or final. This difficulty in recall was likely due to the serious injuries sustained in the accident.

Radio transmissions from some glider pilots participating in the competition were variously described as "non-standard", with "weak signals" and instances of overlapping transmissions with pilots "stepping on each other". Excessive and "unnecessary radio chatter" was observed, further contributing to communication difficulties. One witness recalled a single intelligible call, possibly from a glider, reporting its position on left base for Runway 06; subsequent transmissions were unreadable.

Despite Hinton airfield's requirement for clear radio communication, necessitated by the presence of parachutists, powered aircraft and gliders, one witness observed a lack of radio discipline among glider pilots. This was characterised by inconsistent, or absent transmissions.

Witness testimony

All witnesses observing the event from the airfield described the collision sequence in broadly similar terms. They were positioned at various locations: near the threshold of Runway 09 (grass), the disused concrete Runway 09, north-west of the airfield near the fuel pumps (Figure 8), and to the north near the parachute centre. Some viewed the event from inside vehicles.

While not all witnesses specifically identified the gliders, some referred to them by their competition numbers and others by type. The main difference in testimony was the gliders' relative positions as they approached the runways:

- G-DCTB approaching Runway 09; G-DJMD approaching Runway 06.
- G-DJMD approaching Runway 09; G-DCTB approaching Runway 06.

The pilot of G-DCTB could not recall which runway he had intended to use or was ultimately lined up with.

Organisational information

British Gliding Association (BGA) guidance on radio use

The BGA is the governing body for gliding in the UK and provides comprehensive information and guidance for glider pilots, including on radio use, under the '*Managing Flying Risk*' section of its website[13]. The BGA advises that radios, when used correctly, enhance

Footnote

[13] https://members.gliding.co.uk/safety/managing-flying-risk-collision-avoidance/ [accessed May 2025].

situational awareness, especially for communicating aircraft positions in the circuit. The use of radios has been encouraged, but not mandated, and is largely delegated to gliding clubs to decide local policy.

BGA position on FRTOLs

The BGA supports the established position that glider pilots are not legally required to hold a FRTOL when communicating on allocated gliding frequencies, provided they do not communicate with Air Traffic Service Units or an AGCS. However, a FRTOL is necessary for communication with these services or when operating outside designated gliding channels.

The BGA advises that FRTOL training builds confidence and expands communication privileges, such as contacting controllers, accessing Radio Mandatory Zones, controlled airspace, and aerodrome traffic zones. This training is especially encouraged for pilots who regularly fly cross-country, with approximately 150 glider pilots completing FRTOL courses with the BGA annually in recent years.

However, for pilots who only fly locally from their airfields, the BGA does not consider a FRTOL to be necessary. It believes that training time would be more effectively used by focusing on circuit call procedures, rather than on aspects of aviation covered in the FRTOL course that are not relevant to this group of pilots.

Alignment with Part SFCL

The BGA Gliding Certificate transitioned to the requirement for all Part 21 Sailplane Pilots to operate with the CAA-issued Part SFCL (Sailplane Flight Crew Licensing) SPL (Sailplane Pilots Licence) from 30 September 2025. The training syllabus and Bronze Award exams were being updated, covering CAP 413 terminology, basic procedures, unattended aerodrome calls, and urgency calls, complementing the FRTOL course content.

Airfield frequencies for gliding clubs

In October 2022 the BGA gave a presentation to the CAA to support their call for a greater allocation of discrete radio frequencies for gliding clubs. The BGA argued that CAA policy, which requires airfield operators to deliver an AGCS to qualify for a discrete radio frequency, was inappropriate and potentially unsafe for gliding operations. The BGA highlighted that gliding clubs often experience unpredictable and dense traffic patterns, with many gliders simultaneously airborne and circuit activity that differs significantly from typical general aviation airfields. They believed that as direct pilot-to-pilot communication was essential for effective deconfliction, delivering an AGCS would be impractical and may even reduce safety at gliding clubs. Furthermore, the BGA argued that many clubs have a high volume of annual movements, justifying the need for their own discrete frequencies to prevent the overlap of radio calls with neighbouring airfields.

The BGA proposed two main solutions: allowing clubs to apply for discrete frequencies without the AGCS requirement or increasing the number of Common Glider Field Frequencies from the current two and permitting the BGA to manage them. The CAA allocated an additional 10 common frequencies, which were distributed to 30 gliding clubs and became operational in February 2024.

Aircraft visibility

See-and-avoid

The pilot of G-DCTB recalled seeing the parachute drop aircraft in the distance while conducting his pre-landing checks. However, he did not recall being aware of, or seeing, G-DJMD, even during the manoeuvre recorded at t-120 seconds prior to collision when recorded data showed his glider positioning behind, and 420 ft above, G-DJMD to establish on a downwind leg.

An ATSB report into a fatal midair collision between two sightseeing helicopters on the Gold Coast of Australia in 2023[14] examined the effectiveness of unalerted see-and-avoid where pilots rely on visually acquiring other aircraft and then taking action to avoid them. The report highlights the extensive literature documenting the limitations of see-and-avoid. In particular, an ATSB research report (Hobbs, 1991[15]) stated that unalerted see-and-avoid is a *'Last resort separation if other methods fail to prevent a confliction, regardless of the nature of the airspace'.*

The report outlines the steps involved in see-and-avoid:

1. The pilot looks outside the aircraft.
2. The pilot searches the visual field and detects objects of interest, often in peripheral vision.
3. The object must be directly observed and identified as an aircraft.
4. If identified as a collision threat, the pilot must decide on evasive action.
5. The pilot must then execute the necessary control movements and allow the aircraft to respond.

The report provides context for these steps:

> *'Not only does the whole process take valuable time, but human factors at various stages in the process can reduce the chance that a threat aircraft will be seen and successfully evaded. These human factors are not 'errors' nor are they signs of 'poor airmanship'. They are limitations of the human visual and information processing system which are present to various degrees in all pilots'*

In contrast, alerted see-and-avoid augments the task of visual acquisition by directing pilots to the location of other aircraft, either through timely and accurate radio position reports or aircraft-based alerting systems such as FLARM.

Footnote

[14] Midair collision involving Eurocopter EC130 B4, VH-XH9, and Eurocopter EC130 B4, VH-XKQ, Main Beach, Gold Coast, Queensland, on 2 January 2023 | ATSB [accessed 28 May 2025].

[15] Hobbs, A. (1991). Limitations of the See-and-Avoid Principle. Australian Transport Safety Bureau. (1991)

In its report on the fatal midair collision between gliders G-KADS and G-CLXG in 2023[16], the AAIB noted that while systems such as FLARM can provide timely information about other similarly equipped aircraft, they remain an aid to pilot lookout. The report cautioned:

> *'It is possible that pilots who experience repeated alerts or alarms from aircraft systems can begin to disregard or pay less attention when they sound even if those alerts are genuine'.*

The investigation could not determine whether the pilots of G-DJMD and G-DCTB received any FLARM alerts while positioning in the circuit at Hinton.

Tests and research

Paint and surface analysis

Forensic sampling and analysis of paint transfer marks was carried out on both gliders. Red paint from the bottom of G-DCTB's rudder was chemically matched to paint transfer marks on the forward, left fuselage surface of G-DJMD. Red paint from G-DCTB's right wingtip was chemically matched to paint transfer on the left rear section of G-DJMD's canopy frame.

Forensic analysis of a section of skin from the lower surface of G-DCTB's right wingtip positively identified the presence of blood from the pilot of G-DJMD, and so it was concluded that the wing came into contact with the pilot during the collision.

Canopy failure analysis

The majority of both canopies were retrieved from the accident site, and both were reconstructed. Fracture surface analysis was conducted on fragments from the left-hand rear section of G-DJMD's canopy transparency.

The analysis showed visible 'scarp' features (feather patterns) typical of brittle fracture on the edges of the fragments. This indicates the canopy failed from being distorted, rather than from an impact load. There was evidence of red paint transfer on fracture surfaces of two of the fragments (Figure 9) which were retrieved from the farthest part of the debris field.

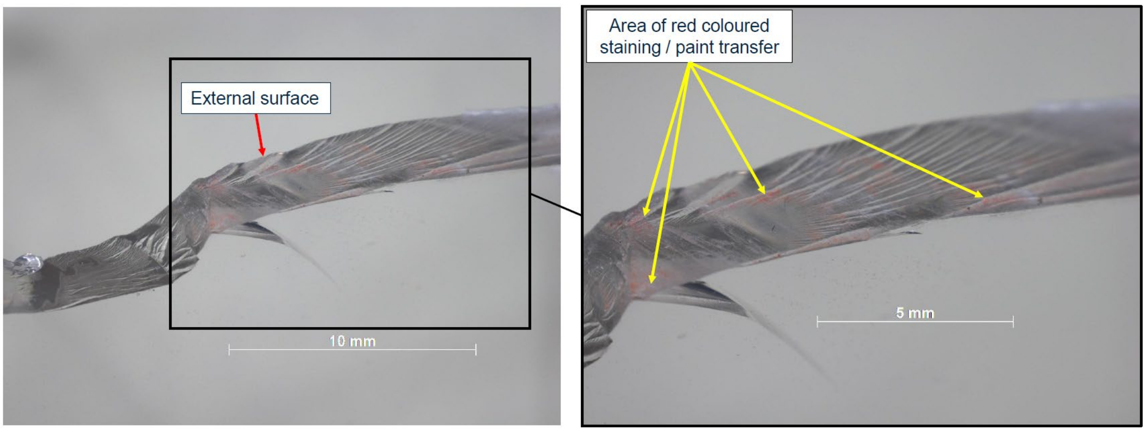

Figure 9

Red paint transfer on canopy fragment fracture face

[16] AAIB investigation to Ventus-2CT, G-KADS / E1 Antares, G-CLXG - GOV.UK [accessed 25 May 2025].

Crack initiation was likely to have been from at or near the window aperture, running through an area of red paint deposit. The fracture direction ran aft and upwards, before returning to the front of the canopy (Figure 10). The two areas of red paint transfer indicate pressure being broadly applied to the canopy between these points before the canopy flexed and broke, and the paint was then able to transfer onto the fracture surfaces.

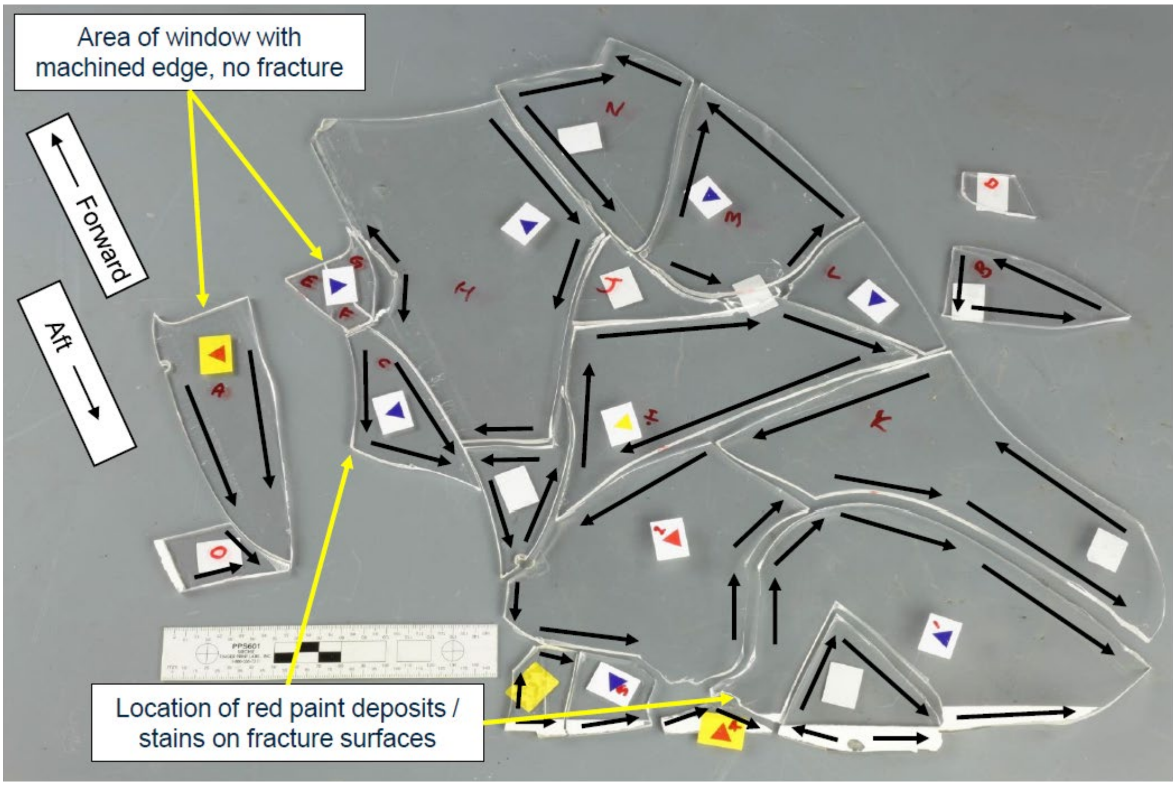

Figure 10

Canopy fragment reconstruction and fracture directions

Surface transfer testing

Surface transfer testing was performed between G-DJMD's composite coaming material and the wing surface of G-DCTB. This produced a similar marking pattern to that seen on both upper and lower wing surfaces and the leading edge of the right wing.

Pilot information

Pilot experience

Both the pilot of G-DJMD and the pilot of G-DCTB held BGA Gliding Certificates with Bronze and Cross-Country endorsements and a Silver Badge. This entitled the pilots to hold a Fédération Aéronautique Internationale (FAI) competition licence. Both pilots had previously flown in competitions and both held a BGA Basic Instructor rating.

Use of radios at home airfield

The pilots' home airfield was RAF Weston-on-the-Green, used primarily for military parachute training. The airfield is a large grass site with three landing strips. The airfield operator did not allow gliding activity when parachute operations were active.

The gliding club used a Common Glider Field Frequency but did not mandate the making of position calls in the circuit. A witness told the AAIB that it would have been "unusual" for the accidents pilots to make position calls in the circuit at Weston.

The pilot of G-DCTB had flown out of Weston since his initial flying training in 2021. The pilot of G-DJMD joined the club in 2021, already qualified with a cross-country endorsement and a Silver Badge.

Medical

Both pilots had registered CAA Pilot Medical Declarations which met the requirements of the BGA for pilots in command.

Post-mortem report

Post-mortem examination of the pilot of G-DJMD revealed no evidence of incapacitation before the accident and recorded the cause of death as '*head injury*'. The pathologist commented that:

> *'There were no injuries identified that would not be explained by [a glider striking the ground inverted], however, the possibility that some injury was sustained as a result of the initial canopy impact cannot be entirely excluded on pathological examination alone'.*

Analysis

Overview

The pilots of G-DJMD and G-DCTB were participating in a local cross-country gliding competition. After crossing the Finish Ring, located 3 km from Hinton airfield, the accident sequence began when the pilots, probably unaware of the presence of each other, flew on converging tracks during their final approach. The gliders collided above the intersection of Runways 06 and 09. The pilot of G-DCTB sustained serious injuries, while the pilot of G-DJMD was fatally injured when his glider struck the ground.

Joining the circuit

The data recovered from both FLARM devices showed the gliders converged on the airfield from different directions after completing their respective competition tasks. G-DJMD crossed the finish ring at 14:39:51 hrs at an altitude 2,300 ft (1,900 ft aal), while G-DCTB crossed later, at 14:45:05 hrs, at a lower altitude of 1,400 ft (1,000 ft aal). This initial height and timing difference established a scenario where both aircraft would be joining a left-hand circuit pattern, as directed at the competition briefing, at approximately the same time but from different positions and altitudes.

The data showed that between t-45 and t-30 seconds before the collision, both gliders appeared to be positioning for an approach to Runway 06 before G-DCTB turned left sharply. G-DCTB's track change, turning inside G-DJMD, could have been to avoid overflying the village of Charlton or a decision to track directly to the airfield due to being at a height of 330 ft aal. This manoeuvre, however, placed the two gliders on converging paths at t-15, both at low altitude and with G-DCTB's recorded ground speed 15 kph faster than G-DJMD's.

Final manoeuvre

G-DCTB was observed to make a late turn toward Runway 09[17], deviating from what appeared to be an intention to land on either Runway 06 (grass) or 06 (hard). A ground observer described G-DCTB's final approach profile as "shallow", with the airbrakes either closed or only partially deployed. This may indicate the pilot perceived he lacked sufficient performance to reach Runway 06 and chose to turn towards Runway 09 to avoid landing short. Runway 09 (grass) was occupied with three gliders waiting to launch, which, once recognised, would have required a larger track change to land on the disused concrete Runway 09 instead. The pilot could not recall which runway he had intended to land on.

Post-accident examination found G-DJMD's airbrakes in the deployed position, while G-DCTB's were retracted. This finding aligns with witness observations, although these positions may have been affected by impact forces.

Some witnesses transposed the identity of the gliders in their statements to the AAIB. This was likely due to differing observation perspectives and a mental reconstruction based on the gliders' final positions on the ground, after the collision.

Engineering and collision geometry

Analysis of G-DCTB and G-DJMD's structure and flying controls did not reveal any defects or control restrictions that would have prevented either glider from being able to change their flight path prior to the collision.

The right wingtip of G-DCTB contacted G-DJMD's canopy frame and canopy transparency in mid-air, causing the transparency to flex and fracture into multiple fragments. The location of the majority of G-DJMD's canopy fragments were found at the beginning of the debris field and paint transfer marks matching that of G-DCTB's wingtip were found on G-DJMD's canopy frame and transparency.

The continued trajectory of the wingtip then made contact with the pilot of G-DJMD before the wing's leading edge struck the cockpit coaming, separating the top section of coaming from the aircraft. Heavy black markings on the leading edge, upper and lower surfaces of G-DCTB's right wing showed the coaming was in contact with the wing for some time as it separated from G-DJMD.

Footnote

[17] The late turn reported by witnesses but not shown in the images.

The centre of G-DJMD's left wing leading edge then struck G-DCTB's right tailplane, leaving a point impact mark on the wing's leading edge and splitting the skin along its length. The tip of the tailplane separated and was found in the latter part of the debris field closest to the accident site.

G-DJMD came to rest inverted, with its left wing underneath the top panel of G-DCTB's right air brake. G-DCTB's tail was in close proximity to G-DJMD's nose and red paint transfer on G-DJMD's nose was matched to the lower rudder of G-DCTB, indicating this contact was made during the latter accident sequence at ground level.

The main gear was found in retracted positions on both gliders. The level of damage to G-DCTB's internal fuselage structure surrounding the gear wheel shows it is likely that G-DCTB's wheel was extended but pushed back up into the fuselage when it hit the ground. It was not possible to accurately determine whether G-DJMD's wheel had been extended.

Medical aspects and survivability

Due to the low height when the gliders collided, there was a negligible margin for the pilots to have instigated avoiding or mitigating action, including use of parachutes.

Both pilots were wearing multi-point harnesses, which were effective in restraining them in their seats, and it is probable that the energy-absorbing foam cushion fitted to G-DCTB provided some additional vertical force impact protection to its pilot.

The report of the post-mortem examination of the pilot of G-DJMD revealed no evidence of incapacitation before the accident. The report stated that the pilot's injuries were consistent with the glider striking the ground inverted but noted that the possibility that the pilot was injured to some extent during the collision could not be excluded. Analysis of blood found on G-DCTB's right wingtip showed that it came into contact with the pilot during the initial collision, but nothing more could be said about the extent of any injury sustained at that point. It was clear, however, that the accident sequence was not survivable for the pilot of G-DJMD.

Lookout and visual acquisition

The collision occurred in VMC during daylight hours. The Met Office aftercast indicated generally settled conditions with good visibility. In these conditions, the primary method of collision avoidance would have been visual lookout by both pilots. Previous studies have concluded that the effectiveness of unalerted see-and-avoid is challenging given the '*limitations of the human visual and information processing system'* (Hobbs, 1991).

Both pilots had completed their competition tasks and were transitioning to the landing phase, a period of high workload requiring simultaneous attention to multiple factors: airspeed and flight path management, traffic awareness, selection of landing area, circuit positioning and communication. In such dynamic situations, pilots must decide where to focus their attention and once established on final approach their focus shifts to executing the landing, which reduces the time and attention available to monitor or detect the presence of conflicting traffic.

Witness evidence and recorded data showed that the two gliders were on converging flight paths at an angle of approximately 30°. This created a challenging visual detection scenario with the added possibility that cockpit structure and pilot seat positions may have created blind spots. It could not be determined whether the pilots received FLARM alerts indicating the presence of the other glider, but no evasive manoeuvre was observed before the collision and so the investigation concluded that neither pilot visually detected the other glider in time to take effective avoiding action.

Glider radios

Both gliders were equipped with VHF radios tuned to the Hinton Radio frequency (119.455 MHz), as confirmed during post-accident examination. The radio from G-DJMD was extensively damaged during the accident, had suffered from dirt ingress and some corrosion was evident. Subsequent testing confirmed that it was no longer able to transmit or receive. However, wiring continuity tests indicated that no faults were found on either glider, therefore it is likely that the radio from G-DJMD was capable of transmitting and receiving prior to the accident assuming a good power supply to the head unit.

G-DCTB's radio passed all functional tests, indicating it was capable of both transmitting and receiving at the time of the accident assuming a good power supply to the head unit.

Pilot communications

During the competition briefing, pilots were instructed to make position reports on downwind, base leg and final approach. The pilot of the parachute drop aircraft reported receiving a response from a glider to his query regarding its landing intentions. Shortly before the collision, he heard another transmission that was "unintelligible"; he could not identify the source or interpret its content. It is possible that this was caused by two simultaneous transmissions stepping on each other.

On the day of the accident, multiple witnesses monitoring the airfield's frequency reported significant shortcomings in radio discipline. These included a lack of position reports and a general pattern of weak, overlapping, and non-standard transmissions from gliders. Excessive and unnecessary radio traffic further degraded clarity.

The operating environment at Hinton was inherently complex, with multiple runway configurations and simultaneous gliding, parachuting, and powered aircraft operations. This required clear communication in accordance with the airfield's published procedures and competition briefing. The accident pilots came from a club where visual scanning was the primary method of collision avoidance, and radios were not routinely used for circuit position calls. This operational culture likely shaped their perception of radio communication as a supplementary safety measure rather than an integral component of airfield procedures. Consequently, under the increased cognitive workload during the transition from task completion to landing, unfamiliar or non-standard radio procedures may have been assigned a lower priority.

The AAIB concluded that effective communication was not established between the two gliders in the critical moments leading up to the collision. The underlying cause, whether attributable to workload saturation, operating culture, or other human/technical factors, could not be definitively identified. However, it highlights the limitations of unalerted visual acquisition as the primary means of collision avoidance, particularly in high-workload landing phases. It also emphasises the importance of pilot training and active encouragement to use radios to alert other pilots to their position, especially in the circuit.

In recognition of the importance of making timely and accurate position calls in the circuit, the following safety action was taken to strengthen the existing guidance on radio use:

The British Gliding Association:

- Sent an email to all club Chief Flying Instructors and BGA instructors reminding them of the key attributes to avoid midair collisions during the circuit, approach and landing.
- Updated the 'Managing Flying Risk – Collision Avoidance' section of their website.
- Highlighted the updated collision avoidance information in their regular e-newsletter to members.

The gliding club at Hinton Airfield produced an updated Daily Flying Briefing that reminded members that:

- Radio checks are mandatory for the first flight of the day for club and private gliders.
- Radio calls are mandatory for Downwind and Final to aid situational awareness

The gliding club at Weston-on-the-Green Airfield amended its policy on the requirement to make radio calls in the circuit. Club instructors would teach and encourage students and solo pilots to make a 'downwind' call when in the circuit. This would be reinforced during periodic check flights and promulgated in the club's weekly newsletter.

Flight Radiotelephony Operator's Licence

In most situations, pilots operating an aeronautical radio installed in an aircraft are required to hold a FRTOL. There are some exceptions to this requirement, which are outlined in Article 139 of the ANO 2016.

The BGA encourages and supports glider pilots in obtaining a FRTOL, acknowledging that the training enhances confidence and broadens communication privileges, particularly for pilots who fly cross-country. However, for pilots who only fly locally from their home airfields, the BGA does not consider a FRTOL to be essential. For this group of pilots, it is important that they have a clear understanding of the requirements under the Wireless Telegraphy Act 2006, and the ANO 2016.

To raise awareness of the FRTOL requirements, the CAA planned to issue a Safety Notice and to update its website. These actions would remind licence holders of the following obligations:

> *'The Wireless Telegraphy Act 2006 and the Air Navigation Order 2016 requires the Licensee of radio transmitting and receiving equipment installed in an aircraft to hold an Aircraft Radio Licence.*
>
> *The Licensee shall not permit any person to use the equipment unless they hold a Flight Radiotelephony Operator's Licence or act under the supervision of a person who holds a Flight Radiotelephony Operator's Licence issued by the UK CAA.*
>
> *There are some exceptions to the requirement to hold a Flight Radiotelephony Operator's Licence. These are specified in Article 139 of the Air Navigation Order 2016.*
>
> *The service that is approved on the frequency allocation is what determines the need for holding a FRTOL. This is the published frequency allocation, which unless it is notamed (or promulgated by other suitable appropriate means) as not providing the published service or outside of the published hours this remains the service which should be provided and therefore adhered to by those using the frequency'.*

Hinton airfield was licensed to operate an AGCS and neither of the accident pilots held a FRTOL.

Airfield communications

Hinton airfield had been licensed to operate an AGCS since 1993, as indicated by the use of the suffix 'Radio' in its callsign on both its website and the Pooleys Flight Guide chart. The Ofcom licence was renewed annually, and the use of the radio equipment and the service provided were also subject to CAA approval under Article 205 of the Air Navigation Order on first issue. The approval was non-expiring and not subject to further oversight by the CAA.

An AGCS is required to provide traffic and weather information to pilots operating at, and in the vicinity of, the airfield to assist decision making. Where an AGCS is provided, it is expected to be available during the airfield's notified hours of operation. All radio operators transmitting on the frequency must hold an unrestricted ROCC.

The AAIB found that neither the licence holder, nor other organisations operating radios transmitting on the allocated frequency at Hinton, had historically provided an AGCS. The licence holder believed the licence granted use of a dedicated frequency with the option, rather than the obligation, of delivering an AGCS. They considered this a safer alternative to giving up their known frequency and using Safetycom. However, the airfield's website gave contradictory guidance to visiting pilots, advising them to '*Maintain a good listening watch on Hinton Radio 119.45 which is a traffic frequency only'.*

Because an AGCS was not provided, none of the personnel operating the base station or mobile radios held an unrestricted ROCC.

The CAA advised the AAIB that an OPC, the only alternative form of aeronautical radio station available, would not be approved at an airfield hosting visiting general aviation, recreational flying and aircraft not operated by the company licensed to provide the OPC.

On the day of the accident, a single frequency (119.455 MHz) was used for communication by all flying activities. However, this frequency was not utilised to coordinate their combined operations and instead operated primarily as a general recreational traffic channel. Witnesses reported significant deficiencies in radio communications, including excessive and unnecessary chatter and the use of non-standard phraseology.

Although it could not be determined with certainty that effective radio use would have prevented the collision, a critical opportunity to detect and avoid the conflict at an earlier stage was missed. The investigation concluded that if an AGCS had been provided by a qualified radio operator, all parties operating at Hinton would likely have benefitted from a shared mental model and improved situational awareness, significantly improving overall safety.

To support safe future operations at Hinton airfield, the CAA engaged in discussions with the airfield's owner and licence holder to establish a level of communication service suited to their specific needs.

The CAA planned to update the contact details of all ANO Article 205 approval holders. Once this process was complete, approval holders would be required to provide an up-to-date list of all current ROCC holders authorised to provide an AGCS at their airfield. This must be maintained and made available to the CAA upon request.

The CAA also undertook to review the conditions associated with ANO Article 205 approvals, as set out in the approval letter, to ensure they accurately reflected the responsibilities of the approval holders. Following this, the CAA intended to issue a Safety Notice and a Supplementary Amendment to CAP 452 to communicate the changes.

Conclusion

The gliders collided on short final to Hinton-in-the-Hedges Airfield because neither pilot detected the other's presence in time to take avoiding action. The accident could have been prevented through timely and clear radio communication by the pilots to alert other circuit traffic of their presence, facilitated by a qualified radio operator providing an AGCS, as licensed and approved by the CAA.

Although the airfield owner and Aeronautical Radio Station licensee had held a CAA approval to deliver an AGCS since 1993, no such service had historically been provided, and no radio operators possessed the necessary qualifications.

Both gliders were equipped with radios tuned to the AGCS frequency; testing confirmed these radios were likely capable of transmitting and receiving.

Examination of both aircraft revealed no pre-existing defects or anomalies that might have contributed to the accident.

Safety action

The following safety action was taken:

The British Gliding Association:

- Sent an email to all club Chief Flying Instructors and BGA instructors reminding them of the key attributes to avoid midair collisions during the circuit, approach and landing.
- Updated the 'Managing Flying Risk – Collision Avoidance' section of their website.
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Published: 30 October 2025.

AAIB Correspondence Reports

These are reports on accidents and incidents which were not subject to a Field Investigation.

They are wholly, or largely, based on information provided by the aircraft commander in an Aircraft Accident Report Form (AARF) and in some cases additional information from other sources.

The accuracy of the information provided cannot be assured.

Accident

Aircraft Type and Registration:	Boeing 737-8AS, 9H-QAA
No & Type of Engines:	2 CFM-56 turbofan engines
Year of Manufacture:	2017 (Serial no: 44782)
Date & Time (UTC):	21 August 2024 at 0808 hrs
Location:	London Stansted Airport
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 6 Passengers - 181
Injuries:	Crew - None Passengers - None
Nature of Damage:	Damage to tail cone, tail fuselage and APU
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	35 years
Commander's Flying Experience:	6,407 hours (of which 6,150 were on type) Last 90 days - 225 hours Last 28 days - 78 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB

Synopsis

While being pushed back by a tug at London Stansted Airport, the aircraft's tail struck the blast fence at the end of the taxiway. This caused extensive damage to the rear of the aircraft, including its APU.

The airport operator has taken safety action by making the 'Tug release point' ground markings more prominent. The report discusses ways to prioritise tasks and maintain situation awareness, and the importance of ground crew being vigilant of each other, and being ready to act when things do not go as expected.

History of the flight

The aircraft was scheduled to operate from London Stansted Airport (Stansted) to Venice Marco Polo Airport, with a planned departure time of 0805 hrs. After the boarding was complete at Stansted, the crew requested a 'remote hold'[1] because of an ATC slot time of 0840 hrs. The aircraft was cleared by ATC for a long pushback "TO THE BOTTOM OF THE APRON [D]" from Stand 63R (Figure 1). This involved the aircraft being pushed back to the end of the cul-de-sac on Apron Delta, abeam Stand 61L, where the tug would be disconnected, without the aircraft's engines being started. The crew would then start the engines at an appropriate time to make the slot time.

Footnote

[1] Remote hold – departing from stand but waiting elsewhere on the airport for an ATC takeoff slot.

The pushback crew consisted of a headset operator and a wingman, who were on foot. A tug driving instructor (tug instructor) and trainee tug driver (trainee driver) were seated beside each other in the tug. The flight crew were in communication with the headset operator via the aircraft's interphone.

Figure 1

Location of relevant stands at London Stansted Airport (UK AIP)

The pushback was commenced by the trainee driver. The initial turn onto the taxiway centreline was started too early so, with some instruction from the tug instructor, the trainee driver made several corrective turns. Noticing this, the aircraft commander asked the headset operator what was happening, who then explained that the driver was undergoing training.

The trainee driver decided to stop the pushback and asked the tug instructor to take over. After swapping seats the instructor recommenced the pushback, correcting the aircraft back onto the taxiway centreline. He continued to reassure and advise the trainee while performing the pushback, looking at her while doing so. The headset operator continued walking on the right side of the tug, abeam its cabin. The wingman was on the left just ahead of the tug.

The aircraft's nosewheel reached the 'Tug release point'[2] (TRP) ground markings (Figure 4), such that the tug was meant to stop. However, it continued moving beyond the TRP with its engine at idle and hit the blast barrier at the end of the cul-de-sac (Figure 2). Realising what had happened, the tug instructor pulled the aircraft forward off the fence then stopped the tug.

The airport operator and ATC were notified. Soon after, representatives from the airport operator and the RFFS were on scene. The aircraft sustained substantial damage to the rear of the aircraft, including the APU, which was running at the time (Figure 3).

Footnote

2 See *London Stansted Airport information* section below for more information on TRP.

Figure 2

Images of the collision with the blast fence from CCTV

Following the accident the tug instructor's employer conducted a breath test for drugs and alcohol on the instructor. This was negative for drugs and was below a relevant alcohol limit for persons performing ground roles.

Figure 3

Rear of the aircraft showing the damage sustained

Airport information

TRPs were introduced at Stansted in 2020. A TRP consisted of a 0.5 m red line, painted on one side of the taxiway line (Figure 4). They are used for Code C[3] aircraft or smaller[4]. The TRP on Taxiway Delta is between Stands 61L and 61R. There is a 14.97 m clearance behind a B737-800 and the blast fence when its nosewheel is on the TRP.

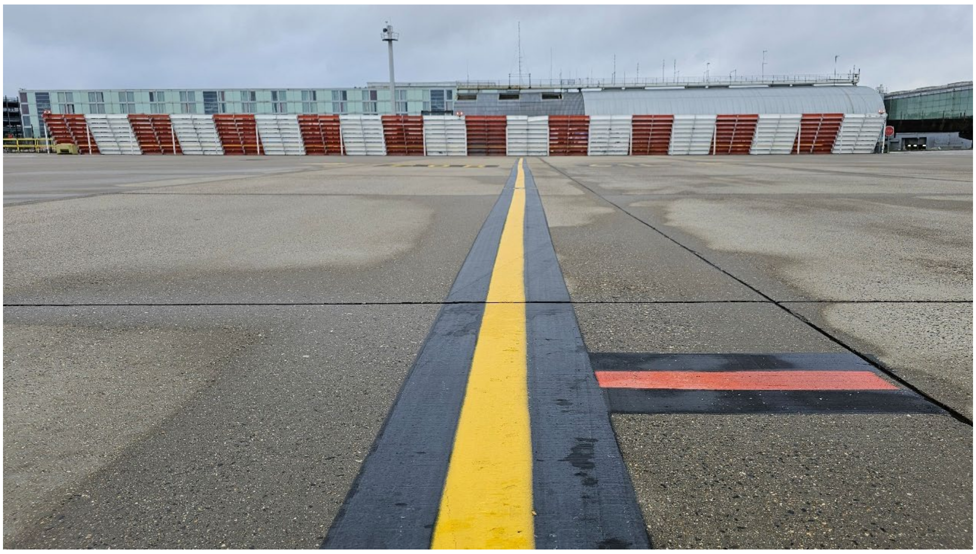

Figure 4

Image of the TRP and blast fence around the time of the accident

Since this accident the airport operator has increased the length of TRPs from 0.5 m to 1 m and painted it on both sides of the taxiway centre line (Figure 5).

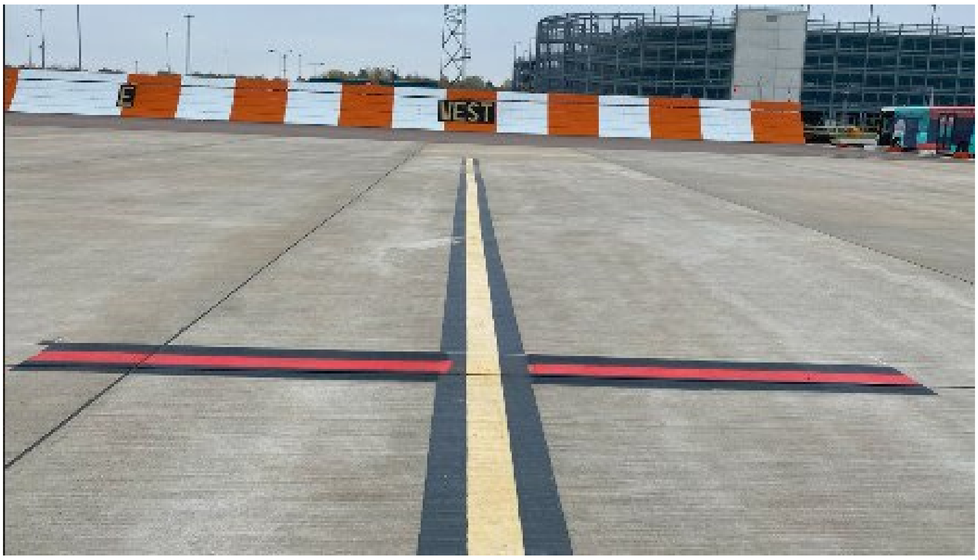

Figure 5

Upgraded TRP since the accident

Footnote

[3] Code C – aircraft with a wingspan of up to 36 m.
[4] The Boeing 737-800 aircraft has a wingspan of 34 m.

Ground crew information

Tug driving instructor

The tug instructor was also a qualified headset operator and wingman. He reported that he had driven past the TRP while he was focussing on speaking to the trainee. He added that the TRP was not very prominent and obscured underneath the aircraft's fuselage. He said that because the aircraft's engines had not been started, there was no thrust opposing the tug's idle engine power during the later part of the pushback. While aircraft engines are more commonly started during pushback, it is not unusual (as in this case) for crew to delay starting them until after the tug has disconnected.

The tug instructor stated that the method for getting a tug driver to stop quickly was to raise a clenched first, indicating the driver should apply the tug's brakes. However, he suggested such a visual signal was not sufficient given a driver would be concentrating on the pushback, with the headset operator often out of his field of view. He did not receive any warning of the impending collision from the wingman or the headset operator.

He stated that, after the aircraft struck the fence, he pulled it forward again instinctively. With hindsight, he believed leaving it in situ and gaining advice would have been preferrable.

Trainee tug driver

The trainee driver was qualified as a headset operator and wingman, and was aware of the TRP through the training for these roles. This was her second pushback. The first was completed earlier that day, without event.

The trainee driver reported that she felt the tug slow down as the aircraft's nose wheel approached the TRP, so believed the instructor would stop the pushback. However, she did not say anything when he drove past the TRP, assuming he must have known what he was doing. After the collision, she suggested not moving the aircraft off the blast fence.

Headset operator

The headset operator was also qualified as a wingman. Prior to this accident, he knew about TRPs from his training for the headset operator role but had not physically seen one.

He commented that the tug instructor took over when the aircraft was abeam Stand 62 and thereafter was attending to talking to the trainee. The tug slowed down when the aircraft was abeam Stand 61, so he positioned himself to disconnect the tug from the aircraft when it stopped. However, the aircraft continued to move slowly until it hit the blast fence. He said he assumed the instructor had a reason for that and did not question his actions.

Wingman

The wingman was also a qualified headset operator. On the day of the accident, he had been called into work at short notice. To avoid delaying the pushback, he had not collected the marshalling wands from the tug. Nevertheless, it was not mandatory to use them. He commented that the TRP was quite small.

Towards the end of the pushback, the tug appeared to slow down. As he normally would at that stage, he stopped walking in preparation for retrieving the aircraft chocks after disconnection of the tow bar. He noticed the aircraft's main wheels pass the line which indicated Stand 61L and realised it had gone passed the TRP. He wondered if the instructor was showing the trainee how far an aircraft could go beyond the TRP. By the time he looked at the headset operator to see if he knew what was happening, the aircraft hit the blast fence.

Ground handling agent's comments

A representative of the ground handling agency commented that all members of ground crew are taught how to stop a pushback[5] in their basic training. This is usually done with the headset operator verbally communicating this to the flight crew, or by hand signals – which relies on each member of ground crew having visual contact with one another. They added that all staff are encouraged, regardless of role or authority, to challenge and report anything they deem unsafe. To avoid being distracted, staff are trained '*to focus on the job in hand*'. A '*Just Culture'* is actively promoted.

Since this accident the ground handling agency has issued a reminder to all staff about TRP procedures. This has been incorporated into training modules for each role.

Aircraft marshalling signals

As well as the clenched fist signal for stopping a tug, the universal signal to stop an aircraft is for a ground crewmember to abruptly extend their arms and/or wands to the top of their head, crossing wands (Figure 6).

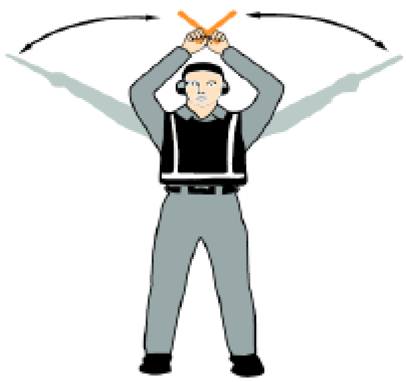

Figure 6

The signal to stop an aircraft in an emergency

Human performance

Situation awareness

A commonly used task prioritisation and situation awareness[6] tool in aviation is *'Aviate, navigate, communicate'* (ANC).

Footnote

[5] See *Aircraft marshalling signals* section below.

[6] Situation awareness (SA) – understanding the current and changing state of an operation. Increased SA increases a person's ability to anticipate variations or developments.

Applied to a tug pushing an aircraft, 'Aviate' would involve prioritising the technical aspects of driving the tug. Thereafter, 'Navigate' would mean checking its trajectory. Finally, 'Communicate' could refer to training aspects.

Startle and surprise

Startle is a temporary, reflex-like response to sudden stimuli. A paper by EASA on *'Startle effect management'*[7] explained that it *'creates a sense of urgency to take action* [and] *perceived time pressure. This action-mode inhibits slow and deliberate analysis.'*

Surprise is an emotion which results from a difference between expectations and reality. It requires re-evaluation of the situation and usually lasts longer than the startle response.

Analysis

The tug instructor realised he had driven past the TRP while attending to speaking to the trainee driver. The difference in managing the energy of an aircraft which – perhaps slightly less commonly – did not have its engines started during the pushback might have led him to subconsciously expect the tug was stopping. This event highlights challenges related to performing a training role in a time-critical, dynamic environment. ANC can help with prioritising tasks and building situation awareness. Any time a pushback team member feels uncertainty, the tug should be stopped immediately so that situation awareness can be rebuilt individually, and as a team.

The wingman and headset operator appeared to experience a level of surprise when the tug instructor exceeded the TRP. By the time they had wondered about his reason for doing so – with one of them trying to get visual contact with the other – it was too late to signal that the tug instructor should stop. The instructor explained the difficulty in noticing hand signals while driving, with other team members being out of his line of sight. Accordingly, this event highlights the importance of team members being vigilant of each other and being ready to act when things do not go as expected.

In this case, the wingman did not use the marshalling wands. Although there was no requirement to used wands, they can offer more conspicuity than arms alone.

The instructor was probably startled by the collision and consequently took immediate action to correct the error by pulling the aircraft forward again. Resisting the urge to act while startled allows time for more deliberate thought processes to be regained.

The driving instructor and wingman suggested the TRP was not very prominent. The airport operator has increased the size of TRPs at the airport.

Footnote

7 R:\SM1\1.1 SAR\1.1.2 RCO\6_PROJ_EASA\Research\2015\2015.C22 Startle Effect Management STEM\3-Deliverables\Final Report\research-project-cover-page [accessed 11 September 2025]

Conclusion

The aircraft was pushed beyond the TRP while the tug driving instructor was focussed on training another driver, while performing the driving task. It struck a blast fence at the end of a cul-de-sac.

The report discusses task prioritisation and situation awareness tools; and the importance of ground crew remaining vigilant of one another and being ready to act when things don't go as expected.

Safety actions

As a result of this incident the airport operator took the following safety action:

> The maximum nosewheel tug release points have all been increased in size from 0.5 m to 1 m and painted it either side of the taxiway centre line.

As a result of this incident the ground handling agent took the following safety action:

> A reminder has been issued to all staff about the tug release points, and that an aircraft's nosewheel should not go beyond it during pushback.

Serious Incident

Aircraft Type and Registration:	Tekever AR5 Evolution MK 2.3, G-TEKG
No & Type of Engines:	2 piston engines
Year of Manufacture:	2023 (Serial no: 514)
Date & Time (UTC):	14 February 2025 at 0804 hrs
Location:	Lydd (London Ashford) Airport
Type of Flight:	Other
Persons on Board:	Crew - None Passengers - None
Injuries:	Crew - N/A Passengers - N/A
Nature of Damage:	None
Commander's Licence:	Other
Commander's Age:	37 years
Commander's Flying Experience:	2,364 hours (of which 1,646 were on type) Last 90 days - 29 hours Last 28 days - 27 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

During a UAS operation, power was lost to the Command Unit (CU) used to control the flight. The aircraft was reported to have had an active transponder and so was visible to ATC throughout. It flew in a holding pattern until emergency flight communications were established and was then flown back to the base of operation.

The power loss was attributed to isolation of the Uninterruptible Power Supply (UPS) when a laptop was disconnected from the power network in the CU. The combination of limited UPS endurance and sub-optimal cable labelling and schematics led to the loss of link to the aircraft for a period before sufficient control was restored to return the aircraft back to base.

Following an internal investigation, the operator has made improvements to internal procedures, wiring schematics and labelling, and has upgraded the UPS endurance.

History of the flight

The aircraft was flown from Lydd Airport (also known as London Ashford Airport) and was operating remotely when an electrical problem developed at the CU. No issues were reported with the functionality of the aircraft itself.

Mains power was provided to the communication and control systems through a UPS. The UPS was also equipped with a circuit breaker on its mains input and provides an audible warning when no mains power is being supplied.

The onset of this event began when the UPS audible warning sounded due to the lack of input mains power. A petrol generator was started and connected to the UPS, but the UPS indicated it was still not being supplied with mains electricity and had less than six minutes of battery power remaining. A "PAN" call was declared on the relevant ATC frequency.

A different UPS was acquired from an adjacent CU and a switch over of plugs and associated extensions was carried out, but this process was hampered by a lack of labelling of what each plug powered. Sufficient power was restored to achieve a downgraded emergency control 18 minutes after the onset of the event. It was believed that full communication and control capability could have been re-established, but it was decided not to risk disruption of the adequate emergency control they had. The "PAN" status was cancelled with ATC, and the remote pilot manoeuvred the aircraft for an uneventful landing at Lydd.

The aircraft itself had highly automated capabilities to ensure it could return to base in the event of a loss of link. However, the aircraft was still receiving a communications link 'heartbeat', even though the control systems were not operational. This caused it to simply follow a holding pattern as it was configured to do. This would have persisted until the 'heartbeat' was switched off or communications were re-established.

Operator's investigation findings

Investigation by the operator established that the input power to the UPS had tripped and is believed to have occurred when a laptop power supply was disconnected. In hindsight, it was realised that the external source of electrical mains power was still available and simply resetting the UPS circuit breaker or bypassing the UPS and connecting the CU directly to mains power or the petrol generator would have restored power to the necessary systems.

Conclusion

CU communication with, and control of, the unmanned aircraft was temporarily lost due to a CU power interruption, and the aircraft entered a loiter mode as designed. Power was restored within 18 minutes, and the aircraft was landed uneventfully at its operating base.

Safety action

The operator has advised that the following safety action has been taken:

> The operator advised that it has upgraded the UPS capability in the CU, improved cable labelling and wiring diagrams, and procedures have been updated to address the issues that arose during this event.

AAIB Record-Only Investigations

This section provides details of accidents and incidents which were not subject to a Field or full Correspondence Investigation.

They are wholly, or largely, based on information provided by the aircraft commander at the time of reporting and in some cases additional information from other sources.

The accuracy of the information provided cannot be assured.

Record-only investigations reviewed: September - October 2025

21 Sep 2024 **Rotorsport UK MT-03** **G-MAZA** St Michael's Airfield, Lancashire

At start of the takeoff the gyroplane struck a significant bump at the intersection with the airfield's other runways. The severity of forces imparted on the gyrocopter resulted in the rotor flapping back and striking the engine propeller blades and tail section which caused the tail section to separate.

22 Apr 2025 **AXE** **G-SFAX** Turweston Aerodrome, Buckinghamshire

A hybrid multi-rotor and fixed wing aircraft was undergoing testing at Turweston Aerodrome. The piloted prototype aircraft was being operated under E Conditions. During the accident flight the aircraft suddenly and rapidly rolled left and pitched down, only recovering controlled flight when the pilot selected all motors to idle. Loss of power to two motors on the same side, rendered the aircraft uncontrollable with the remaining rotors due to the resulting thrust asymmetry, and meant the pilot was forced to enter a glide approach to the runway. The aircraft landed hard, short of the threshold and close to another aircraft. The accident aircraft has since been deregistered and moved out of the UK.

14 May 2025 **Guimbal Cabri G2** **G-CORY** Goodwood Aerodrome, Sussex

The student pilot was undertaking a practice engine-off landing under the supervision of an examiner. During the final stage of the manoeuvre, after the helicopter had been levelled, both pilots were unable to prevent a heavy landing, which occurred approximately 45° off the intended heading. The helicopter bounced on contact with the ground, during which it is believed that the fenestron was struck and severed by a main rotor blade.

17 Jun 2025 **Beech A23-24** **G-OMBE** North Weald Airfield, Essex

The pilot was carrying out a high speed taxi test after maintenance along with a licenced engineer as passenger. During the test the aircraft inadvertently became airborne and the pilot instantly closed the throttle. This resulted in a hard landing which caused the left main landing gear leg to fracture. The aircraft veered off the runway and came to stop.

28 Jun 2025 **Rans S6-ESD XL (Modified)** **G-MZLL** Old East Haxted Farm, Surrey

The aircraft was returning to Old East Haxted Farm, a small farm strip with public footpaths crossing the runways. The pilot reported that as the aircraft touched down two people walking a dog appeared from behind a tall hedge, walking across the runway. The pilot stated that he had to turn the aircraft to the left to avoid hitting the dog walkers and, in doing so, the aircraft entered an area of longer grass and flipped over on to its back.

Record-only investigations reviewed: September - October 2025 cont

19 Jul 2025 **Aeroprakt A22-LS Foxbat** **G-CINV** Swansea Airport, Glamorgan

The pilot reported that, following a normal approach with full flaps and an airspeed of 45 KIAS, the aircraft touched down "slightly heavily" with a light wind from the right; it then veered left off the side of the runway onto the grass where it overturned.

25 Jul 2025 **Quik GT450** **G-CGGT** Crosland Moor airfield, Yorkshire

As the pilot flared the aircraft they encountered turbulence forcing the aircraft towards hedging at the side of the runway. Before the pilot could react, the wing caught the hedge which spun the aircraft around and it came to stop on its side facing the opposite direction. The pilot considered the cause to be turbulence created by a quarry at the end of the runway and that his approach was too low.

10 Aug 2025 **EV-97 TeamEurostar UK** **G-JVBP** Otherton Airfield, Staffordshire

Just as the aircraft was close to touchdown, the pilot reported a control restriction in the right rudder pedal. Upon landing, the aircraft veered off the runway and came to rest. An extensive post-accident maintenance inspection of the aircraft found no evidence of an issue with the rudder pedals.

14 Aug 2025 **Pazmany PL-1** **G-BDHJ** Farthing Corner Airfield, Kent

During the takeoff ground roll, at about 53 mph, the left gear torque link upper attachment failed at a weld, causing the oleo to fully extend. The extension caused the aircraft to lift off prematurely, and when it settled back down the left wheel and oleo assembly had rotated 90°. The drag on the side of the wheel caused the landing gear leg to collapse and the aircraft veered 90° to the left before coming to rest. The pilot noted that a dye penetrant fluid inspection should have revealed any cracks during the last annual inspection 11 months previous.

14 Aug 2025 **Denney Kitfox MK2** **G-BUIP** Wolverhampton (Halfpenny Green) Airport

The pilot reported that, after landing on grass Runway 10 at Wolverhampton Airport, whilst decelerating through 15 mph, he lost right toe braking and right rudder authority. The aircraft ground looped to the left causing the right landing gear leg to collapse. The tail wheel steering pin was found broken.

Record-only investigations reviewed: September - October 2025 cont

15 Aug 2025 **MD 600N** **N600MW** Parham, Sussex

The helicopter was returning to Shoreham airport. Four minutes before landing the engine stopped suddenly and the pilot entered autorotation. During the emergency landing the skid dug into a furrow causing the right landing skid to fail, and the helicopter rolled onto its side.

25 Aug 2025 **Aero AT-3** **G-RDFX** Ludham Airfield, Norfolk

Following a normal takeoff roll and rotation, the aircraft drifted to the right and failed to climb. It touched down in a soft field to the side of the runway and came to rest inverted. The pilot assessed that the right drift was due to a lull in the gusting left crosswind, whilst he maintained full right rudder input. The lack of climb performance may have been due to a tailwind component once the aircraft became airborne.

2 Sep 2025 **Elixir** **G-RLXB** Fife Airport

During landing, the pilot lost directional control on the runway, possibly due to a crosswind. The aircraft ran onto the grass, the nose landing gear detached and the aircraft came to a halt. During the accident sequence, there was substantial damage to the propellers, leading edge of the wing and nose landing gear.

5 Sep 2025 **Cessna 150M** **G-BSKA** Beccles Airfield, Suffolk

After touchdown the aircraft began to bounce. On the third bounce the nose wheel hit the runway and collapsed.

5 Sep 2025 **Ikarus C42 FB80** **G-CJCO** Popham Airfield, Hampshire

As the aircraft reached the threshold of Runway 26 the pilot reduced the power, lowered the nose and continued the descent. During the flare the aircraft pitched up and yawed left which resulted in a heavy landing. The aircraft skidded to the left and came to rest on left edge of the runway.

10 Sep 2025 **DH82A Tiger Moth** **G-ANEN** Headcorn Aerodrome, Kent

The aircraft was the penultimate aircraft to land of a group from France that diverted into Headcorn due to weather. Landing on the short runway with a slight head wind, it was observed to conduct a three point landing, bounced and ended on its nose.

13 Sep 2025 **Piper PA-28R-200** **G-CBEE** Turweston Aerodrome, Buckinghamshire

The pilot stated that, prior to landing, he lowered the gear whilst on the downwind leg but believes he must then have retracted it sometime before touching down.

Record-only investigations reviewed: September - October 2025 cont

14 Sep 2025 Dornier 28A N123CA Ripple Airfield, Kent

En-route to Old Warden from Midden-Zeeland Airport with 4 POB, the aircraft encountered bad weather and made a precautionary diversion to Ripple airfield. On approach the main wheels struck a 1 m high steep bank, which wasn't visible from the air, at the transition between the adjacent field and runway. On touchdown one of the main landing gear collapsed.

22 Sep 2025 YAK-52 G-LYFA Oaksey Park, Wiltshire

The pilot reported on final that the landing gear was down and this was confirmed by radio controller. On short final, the pilot inadvertently raised the landing gear instead of lowering full flap and the aircraft landed with the landing gear retracted.

23 Sep 2025 Piper PA-28RT-201T N799JH Peterborough Business Airport, Cambridgeshire

The pilot reported that he had forgotten to lower the gear before the aircraft landed.

24 Sep 2025 Rotorsport UK MT-03 G-MAZA St Michael's Airfield, Lancashire

The pilot reported that he misjudged the landing. The aircraft turned and flipped over resulting in substantial damage.

28 Sep 2025 Piper PA-28-161 G-BTNV Sandown Airport, Hampshire

The nose landing gear collapsed during landing.

28 Sep 2025 Skyranger 912S(1) G-ERTE Glebe Farm, Warwickshire

Shortly after takeoff, the pilot observed that the aircraft was sideslipping but the rudder had no effect in correcting it. Although the pilot managed to keep the wings level using aileron, he had no effective directional control and so decided to land in a field. The aircraft bounced on touchdown, ran to the end of the field, and the nose landing gear struck an embankment. The aircraft came to halt in the adjacent field.

30 Sep 2025 Titan T-51 Mustang G-DHYS Henstridge Airfield, Somerset

The aircraft landed normally on Runway 24, but during the roll out the tail lifted slightly and the propeller clipped the runway which resulted in the loss of two blades and the fracturing of the remaining two. The aircraft came to rest on its nose damaging the spinner. The pilot confirmed that the brakes had not been applied during the roll out.

Record-only investigations reviewed: September - October 2025 cont

30 Sep 2025 **GLOS-Airtourer Super 150** **G-AZHI** Lydd Airport, Kent

Following three touch-and-go circuits with a half-flap setting, the aircraft was configured with full flap for the next approach. On touchdown, which was harder than normal, the left main landing gear collapsed. The aircraft veered off the runway and came to rest on the grass.

2 Oct 2025 **DA 42** **G-TESM** Sherburn-in-Elmet, Yorkshire

At about 60 kt during takeoff, the aircraft leaned to the right as the right main landing gear began to collapse and the right propeller contacted the ground. The right landing gear retracted further and the aircraft slid along the runway, veered to the right onto the grass and then span around through 180° before coming to a halt. The examiner recalled that the landing gear selector was in the DOWN position before takeoff, but observed it was in the UP position when the aircraft stopped. He did not observe the other pilot touch the landing gear selector at any time.

17 Oct 2025 **Piper PA-32-301** **G-BVWZ** Southend Airport, Essex

The pilot had completed circuit training, whilst parking the aircraft, the pilot cut a corner resulting in damage to taxiway edge lights. The pilot informed ATC that the aircraft's taxi and landing lights were not working.

18 Oct 2025 **Vans RV-6** **G-RIVT** West Heslerton Airfield, North Yorkshire

The aircraft landed on a westerly heading with a southerly wind. Shortly after touchdown the aircraft tipped onto its nose and came to rest inverted. A skid mark produced by the left wheel suggested that the left wheel had locked up during the landing roll which tipped the aircraft forward. The pilot confirmed that there had been brake application prior to the accident.

18 Oct 2025 **Flight Design CTSW** **G-KUPP** Redhill Aerodrome, Surrey

The pilot had completed their first solo circuit, during landing the aircraft bounced and the pilot carried out a go-around. The pilot completed a second, uneventful touchdown but shortly after the aircraft veered to the right and left the runway. The runway excursion was attributed to damage to the nose landing gear, caused during the first landing.

25 Oct 2025 **Fournier RF5** **G-AZJC** Seighford Airfield, Staffordshire

The engine stopped while the aircraft was taxiing to the runway for an air test after work had been completed on the ignition system. The pilot reported that he needed to turn the propeller to ensure the starter motor would engage for the subsequent start, but when he did so, the engine started and the aircraft ran into a hedge. The pilot said that he was sure he had turned off the ignition before turning the propeller and believed the engine had started because of a fault in the ignition system.

Miscellaneous

This section contains Addenda, Corrections and a list of the ten most recent Aircraft Accident ('Formal') Reports published by the AAIB.

The complete reports can be downloaded from the AAIB website (www.aaib.gov.uk).

TEN MOST RECENTLY PUBLISHED FORMAL REPORTS ISSUED BY THE AIR ACCIDENTS INVESTIGATION BRANCH

3/2015 Eurocopter (Deutschland) EC135 T2+, G-SPAO
Glasgow City Centre, Scotland
on 29 November 2013.

Published October 2015.

1/2016 AS332 L2 Super Puma, G-WNSB
on approach to Sumburgh Airport
on 23 August 2013.

Published March 2016.

2/2016 Saab 2000, G-LGNO
approximately 7 nm east of Sumburgh Airport, Shetland
on 15 December 2014.

Published September 2016.

1/2017 Hawker Hunter T7, G-BXFI
near Shoreham Airport
on 22 August 2015.

Published March 2017.

1/2018 Sikorsky S-92A, G-WNSR
West Franklin wellhead platform, North Sea
on 28 December 2016.

Published March 2018.

2/2018 Boeing 737-86J, C-FWGH
Belfast International Airport
on 21 July 2017.

Published November 2018.

1/2020 Piper PA-46-310P Malibu, N264DB
22 nm north-north-west of Guernsey
on 21 January 2019.

Published March 2020.

1/2021 Airbus A321-211, G-POWN
London Gatwick Airport
on 26 February 2020.

Published May 2021.

1/2023 Leonardo AW169, G-VSKP
King Power Stadium, Leicester
on 27 October 2018.

Published September 2023.

2/2023 Sikorsky S-92A, G-MCGY
Derriford Hospital, Plymouth, Devon
on 4 March 2022.

Published November 2023.

Unabridged versions of all AAIB Formal Reports, published back to and including 1971, are available in full on the AAIB Website

http://www.aaib.gov.uk

GLOSSARY OF ABBREVIATIONS

aal	above airfield level
ACAS	Airborne Collision Avoidance System
ACARS	Automatic Communications And Reporting System
ADF	Automatic Direction Finding equipment
AFIS(O)	Aerodrome Flight Information Service (Officer)
agl	above ground level
AIC	Aeronautical Information Circular
amsl	above mean sea level
AOM	Aerodrome Operating Minima
APU	Auxiliary Power Unit
ASI	airspeed indicator
ATC(C)(O)	Air Traffic Control (Centre)(Officer)
ATIS	Automatic Terminal Information Service
ATPL	Airline Transport Pilot's Licence
BMAA	British Microlight Aircraft Association
BGA	British Gliding Association
BBAC	British Balloon and Airship Club
BHPA	British Hang Gliding & Paragliding Association
CAA	Civil Aviation Authority
CAVOK	Ceiling And Visibility OK (for VFR flight)
CAS	calibrated airspeed
cc	cubic centimetres
CG	Centre of Gravity
cm	centimetre(s)
CPL	Commercial Pilot's Licence
°C,F,M,T	Celsius, Fahrenheit, magnetic, true
CVR	Cockpit Voice Recorder
DME	Distance Measuring Equipment
EAS	equivalent airspeed
EASA	European Union Aviation Safety Agency
ECAM	Electronic Centralised Aircraft Monitoring
EGPWS	Enhanced GPWS
EGT	Exhaust Gas Temperature
EICAS	Engine Indication and Crew Alerting System
EPR	Engine Pressure Ratio
ETA	Estimated Time of Arrival
ETD	Estimated Time of Departure
FAA	Federal Aviation Administration (USA)
FDR	Flight Data Recorder
FIR	Flight Information Region
FL	Flight Level
ft	feet
ft/min	feet per minute
g	acceleration due to Earth's gravity
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GPWS	Ground Proximity Warning System
hrs	hours (clock time as in 1200 hrs)
HP	high pressure
hPa	hectopascal (equivalent unit to mb)
IAS	indicated airspeed
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
IP	Intermediate Pressure
IR	Instrument Rating
ISA	International Standard Atmosphere
kg	kilogram(s)
KCAS	knots calibrated airspeed
KIAS	knots indicated airspeed
KTAS	knots true airspeed
km	kilometre(s)
kt	knot(s)
lb	pound(s)
LP	low pressure
LAA	Light Aircraft Association
LDA	Landing Distance Available
LPC	Licence Proficiency Check
m	metre(s)
mb	millibar(s)
MDA	Minimum Descent Altitude
METAR	a timed aerodrome meteorological report
min	minutes
mm	millimetre(s)
mph	miles per hour
MTWA	Maximum Total Weight Authorised
N	Newtons
N_R	Main rotor rotation speed (rotorcraft)
N_g	Gas generator rotation speed (rotorcraft)
N_1	engine fan or LP compressor speed
NDB	Non-Directional radio Beacon
nm	nautical mile(s)
NOTAM	Notice to Airmen
OAT	Outside Air Temperature
OPC	Operator Proficiency Check
PAPI	Precision Approach Path Indicator
PF	Pilot Flying
PIC	Pilot in Command
PM	Pilot Monitoring
POH	Pilot's Operating Handbook
PPL	Private Pilot's Licence
psi	pounds per square inch
QFE	altimeter pressure setting to indicate height above aerodrome
QNH	altimeter pressure setting to indicate elevation amsl
RA	Resolution Advisory
RFFS	Rescue and Fire Fighting Service
rpm	revolutions per minute
RTF	radiotelephony
RVR	Runway Visual Range
SAR	Search and Rescue
SB	Service Bulletin
SSR	Secondary Surveillance Radar
TA	Traffic Advisory
TAF	Terminal Aerodrome Forecast
TAS	true airspeed
TAWS	Terrain Awareness and Warning System
TCAS	Traffic Collision Avoidance System
TODA	Takeoff Distance Available
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
USG	US gallons
UTC	Co-ordinated Universal Time (GMT)
V	Volt(s)
V_1	Takeoff decision speed
V_2	Takeoff safety speed
V_R	Rotation speed
V_{REF}	Reference airspeed (approach)
V_{NE}	Never Exceed airspeed
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
VOR	VHF Omnidirectional radio Range

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