AAIB
Air Accidents Investigation Branch

AAIB Bulletin 1/2026

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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:	Cozy Mk IV, G-BYLZ
No & Type of Engines:	1 Lycoming O-360-A4A (Modified) piston engine
Year of Manufacture:	1999 (Serial no: PFA 159-12464)
Date & Time (UTC):	18 March 2025 at 1304 hrs
Location:	Gloucestershire Airport
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - 1 (Minor) Passengers - N/A
Nature of Damage:	Aircraft destroyed
Commander's Licence:	Private Pilot's Licence
Commander's Age:	69 years
Commander's Flying Experience:	2,483 hours (of which 7 were on type) Last 90 days - 5 hours Last 28 days - 2 hours
Information Source:	AAIB Field Investigation

Synopsis

The aircraft was on final approach to Runway 09 at Gloucestershire Airport when the engine lost power, resulting in the aircraft landing short of the runway and colliding with the ILS localiser antenna array. A plastic air induction elbow attached to the engine had softened and collapsed during the landing approach, causing the loss of power. The Light Aircraft Association (LAA) intends to take two safety actions in response to this accident concerning the use of 3D printed parts.

History of the flight

The aircraft returned to Gloucestershire Airport after an uneventful local flight operating up to FL80. The pilot flew a Required Navigation Performance (RNP) approach to Runway 09, intending to go around on final approach. He extended the belly airbrake during the approach. On short final, at about 500 ft agl, he advanced the throttle and realised that the engine had suffered a complete loss of power. He managed to fly over a road and a line of bushes on the airfield boundary, but landed short and struck the ILS localiser before coming to rest at the side of the structure (Figure 1).

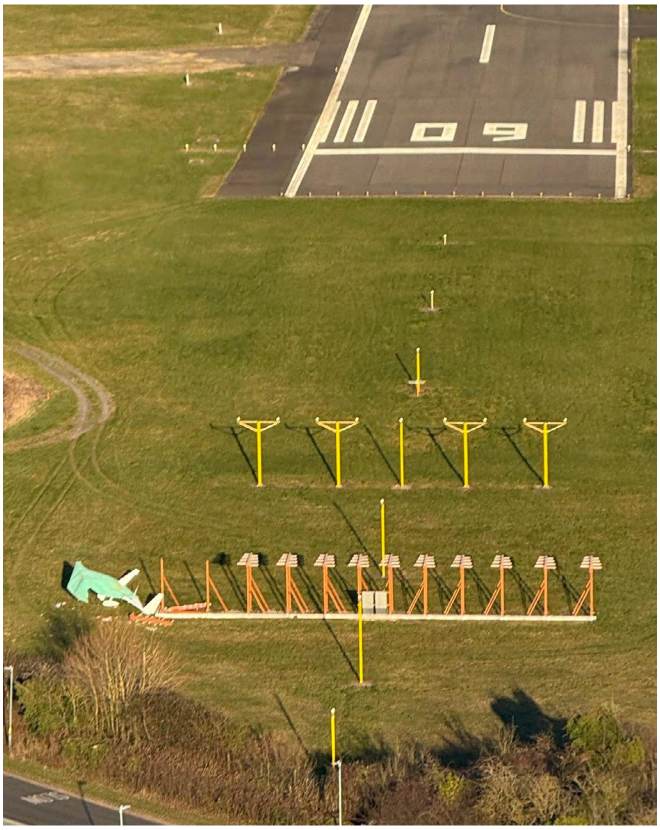

Figure 1
G-BYLZ accident location at Gloucestershire Airport

The pilot suffered minor injuries and the aircraft was destroyed (Figure 2), along with damage to the ILS localiser installation.

Figure 2
G-BYLZ following the accident

Aircraft information

The Cozy Mk IV is a kit-built four-seat[1] canard aircraft powered by a single piston engine driving a pusher propeller. It is equipped with a belly-mounted airbrake to increase drag in the landing configuration. A modification application was made to the LAA in 2019, by the aircraft owner[2], to replace the engine's throttle body fuel injector with a mechanical fuel injection system. This system consisted of a fuel controller, high-pressure engine-driven fuel pump, electric auxiliary fuel pump, fuel flow transducer and associated fuel hoses, filters and fittings. Following flight testing, the modified fuel system was approved by the LAA in 2022. The modified fuel injection system had accumulated 37 hours in service when the accident occurred.

Aircraft examination

Examination of the aircraft revealed that a plastic air induction elbow attached to the fuel controller had collapsed (Figure 3), severely restricting the induction airflow to the engine, causing the loss of power.

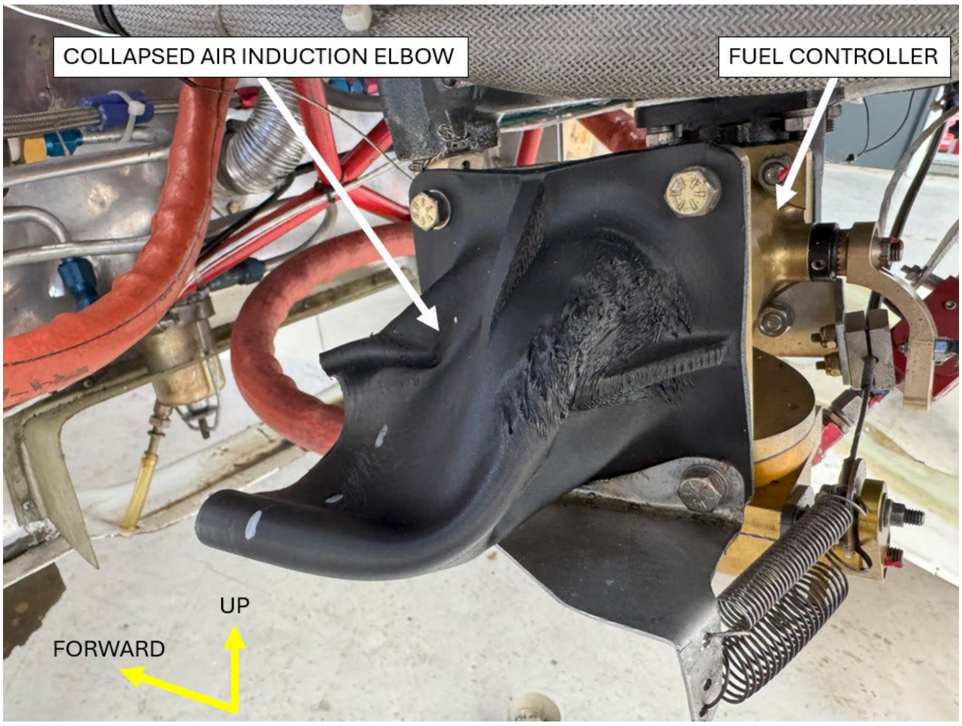

Figure 3

Collapsed air induction elbow

The air induction elbow was a 3D-printed plastic component that had been installed during the modification to the fuel system. A forward-facing air filter had been clamped to the forward end of the elbow, but this had detached and was found loose in the lower engine cowling.

Footnote

1 Operation under the LAA Permit to Fly system limits the seating capacity to two persons.
2 The owner of G-BYLZ when the fuel system modification was embodied. The aircraft was subsequently sold to a new owner in August 2024.

The aircraft owner who installed the modified fuel system stated that the 3D-printed induction elbow was purchased in the USA at an airshow, and he understood from the vendor that it was printed from CF-ABS (carbon fibre – acrylonitrile butadiene styrene) filament material, with a glass transition temperature[3] of 105°C.

An alternative construction method for the air induction elbow, shown in the Cozy Mk IV plans, is a lamination of four layers of bi-directional glassfibre cloth with epoxy resin. The epoxy resin specified for the laminate has a glass transition temperature of 84°C, after the finished part has been post-cured. The aircraft owner stated that as the glass transition temperature listed for the CF-ABS material was higher than the epoxy resin, he was satisfied the component was fit for use in this application when it was installed.

A review of the design of the laminated induction elbow in the Cozy Mk IV plans showed that it featured a section of thin-walled aluminium tube at the inlet end of the elbow, where the air filter is attached. The aluminium tube provides a degree of temperature-insensitive structural support for the inlet end of the elbow. The 3D-printed induction elbow on G-BYLZ did not include a similar section of aluminium tube at the inlet end.

Tests and research

Two samples from the air induction elbow were subjected to testing, using a heat-flux differential scanning calorimeter, to determine their glass transition temperature. The measured glass transition temperature for the first sample was 52.8°C, and 54.0°C for the second sample.

Other information

LAA modification process

The modified fuel system fitted to G-BYLZ was treated as a prototype modification by LAA Engineering. This required the aircraft owner to complete an initial modification proposal form, LAA Form MOD 2, for LAA Engineering to assess whether the modification was feasible. The modification was determined to be so, with the LAA classifying the modification as minor and requiring the owner to provide a full description of the fuel system modifications by completing LAA Form MOD 3. Section 6 of the MOD 3 form is a parts list of components to be fitted for the modification. The parts list submitted by the owner included the components of the modified fuel system but omitted the 3D-printed air induction elbow. The airworthiness of the 3D-printed induction elbow was therefore not assessed by LAA Engineering during its evaluation of the fuel system modification, as it was not aware of the presence of this component on the aircraft.

Footnote

3 The glass transition temperature (Tg) of a polymer material is the temperature at which the material changes from a hard, glassy state to a softer, more flexible state.

Analysis

The aircraft's engine failed to produce power on final approach due to the collapse of the air induction elbow, which severely restricted the induction airflow into the fuel controller. When the pilot realised that the engine was no longer producing power, the options for a safe landing were limited by the low altitude and obstacles ahead of the aircraft.

The induction elbow collapsed due to the elbow's 3D-printed plastic material softening when exposed to heat from the engine. It is possible that extension of the aircraft's belly airbrake created a low-pressure zone beneath the lower engine cowling, drawing air over the exhaust piping in the upper cowling area downwards and over the induction elbow, which may have added to the existing radiant heating of the elbow from the engine.

Installation of the 3D-printed induction elbow as part of the fuel system modification was not identified as a hazard by the aircraft owner, as he believed that the temperature capability of the filament material used in the induction elbow was at least equivalent to the laminated epoxy material version specified in the aircraft's build manual. Testing of the elbow's material after the accident showed that it had a significantly lower glass transition temperature than epoxy resin, although the exact material composition of the 3D-printed elbow was not determined. The 3D-printed induction elbow also did not include the section of aluminium tube at its forward end, which would have provided additional structural support to the elbow despite the elevated temperature present within the lower engine cowling.

As the parts list supplied to LAA Engineering for the fuel system modification did not include the 3D-printed induction elbow, it was not able to independently assess its airworthiness as part of the modification process.

Conclusion

The engine lost power during final approach because a plastic air induction elbow attached to the engine softened and collapsed, severely reducing the engine's induction airflow. The induction elbow was constructed from an inappropriate material for the elevated temperature present within the lower engine cowling. The elbow was installed as part of a modification to the aircraft's fuel system, however due to omission of the elbow on the modification parts list, LAA Engineering was not able to independently assess its airworthiness as part of the modification process.

Planned safety actions

The LAA intends to publish a 'LAA Alert' regarding the use of 3D-printed parts that will be sent to all LAA Inspectors. This alert will also be referenced in the Engine TADS (Type Acceptance Data Sheet) for all engine types, ensuring that it is used as a reference each time the Permit to Fly for an LAA aircraft is revalidated.

Published: 4 December 2025.

Accident

Aircraft Type and Registration:	Spitfire Mk 26B, G-ENAA
No & Type of Engines:	1 Isuzu V6 piston engine
Year of Manufacture:	2013 (Serial no: LAA 324-15097)
Date & Time (UTC):	28 July 2024 at 1258 hrs
Location:	Enstone Airfield, West Oxfordshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - 1 (Fatal) Passengers - N/A
Nature of Damage:	Aircraft destroyed
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	71 years
Commander's Flying Experience:	21,740 hours (of which 19 were on type) Last 90 days - 2 hours Last 28 days - 1 hours
Information Source:	AAIB Field Investigation

Synopsis

The aircraft yawed left during the takeoff roll, pitched up rapidly and once airborne rolled rapidly to the left. The left wingtip struck the ground and the aircraft came to rest inverted and caught fire. The pilot was fatally injured. The investigation found that the aircraft most probably stalled during the rapid pitch up and that the ensuing left roll and yaw occurred as a result of a post-stall autorotation.

Examination of the aircraft, while limited to some extent by the disruption caused by the impact and fire, did not reveal any technical defects which may have adversely affected the controllability of the aircraft.

No definitive cause was established for the loss of control.

History of the flight

Two members of the syndicate that owned the aircraft drove to Enstone Airfield together on the morning of the accident. They arrived at approximately 1000 hrs and moved the aircraft out of its hangar. The surviving syndicate member described the pre-flight checks as "all good." That pilot boarded the aircraft and taxied out at approximately 1200 hrs. He conducted a general handling flight in the local area for 30 minutes, during which there were no technical issues with the aircraft. He parked the aircraft near point B (Figure 1) for the crew change.

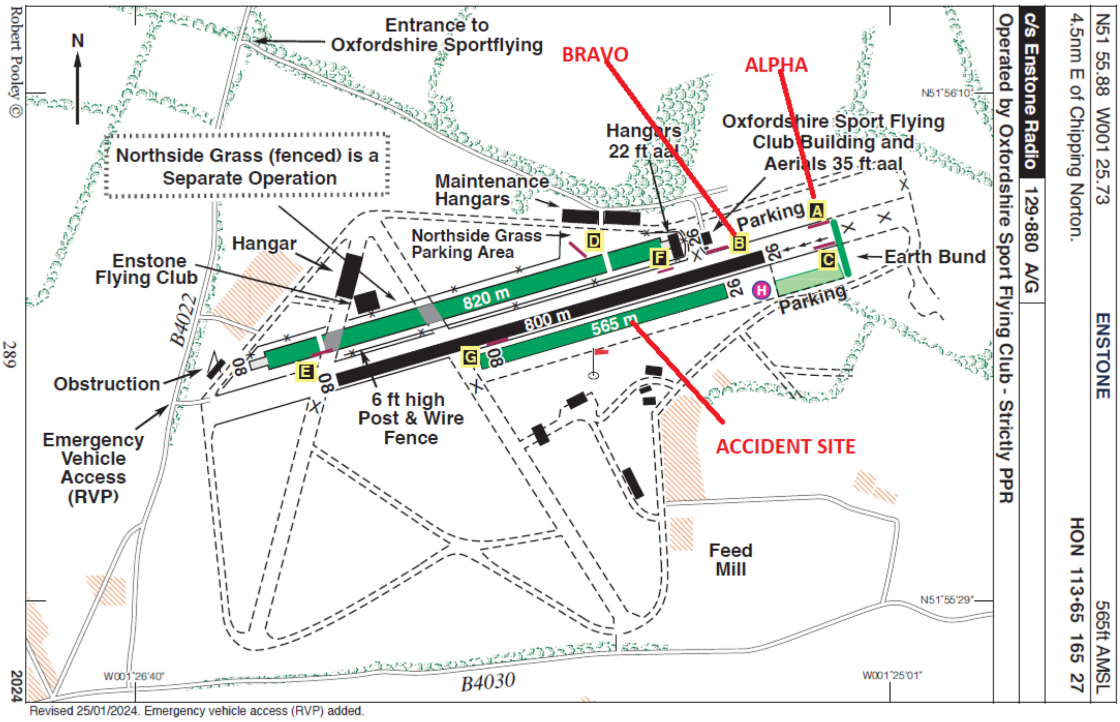

Figure 1
Enstone Airfield Chart

The first pilot had flown with the aircraft seat in its most aft position. During the crew change the pilots worked together to move the seat to the middle position of the three available. The seat was secured in that position with pip pins. The first pilot opened the engine cowling to check for leaks and stated that none were found. He then helped the second pilot strap into the seat's four-point harness. The second pilot then started the aircraft and taxied to position A (Figure 1) where he was seen to do the engine run up checks. He then lined up for takeoff on tarmac Runway 26 (shown in black in Figure 1).

The initial part of the takeoff roll seemed normal and the aircraft tailwheel lifted as expected. The tail then lowered to the ground and the aircraft yawed left towards the edge of the tarmac runway. As it approached the edge of the tarmac, the aircraft pitched up sharply and then rolled rapidly to the left. The left wingtip struck the ground, with approximately 120° of bank angle, followed by the nose. Immediately after the nose struck the ground a large fire broke out causing extensive further damage to the aircraft. The pilot was fatally injured.

Accident site

The aircraft came to rest at the southern edge of the south side grass Runway 26, approximately 45 m from the edge of tarmac Runway 26. The ground marks showed that the left wingtip struck the ground first, followed by the propeller and engine. Distinct propeller strikes on the ground indicated propeller rotation at the time of impact. The impact sequence was dynamic, with the right wing then striking the ground before the aircraft came to rest inverted. An intense post-crash fire, centred on the cockpit, caused extensive damage to the central part of the aircraft and engine bay.

Recorded information

Recorded information included closed-circuit television (CCTV) footage from two cameras located on the airfield's control tower and a video recording made by a witness using a mobile phone (Figure 2). The combined footage captured the aircraft as it taxied to the runway, the takeoff run, and subsequent takeoff through to the aircraft striking the ground. A recording of the radio communications between the pilot and airfield radio operator was also available.

Photogrammetry in conjunction with laser scan data of the accident site and of another Spitfire 26B was used to extrapolate G-ENAA's approximate speed, heading, pitch and roll angle during the accident takeoff. Smoothing algorithms were applied to the derived speed of the aircraft due to the varying quality of the recorded images. Because of this, values for speed are only an approximate indication.

Other potential sources of data, such as the pilot's mobile phone and the aircraft's MoTeC SDL3 instrument logger fitted in the cockpit were destroyed in the fire.

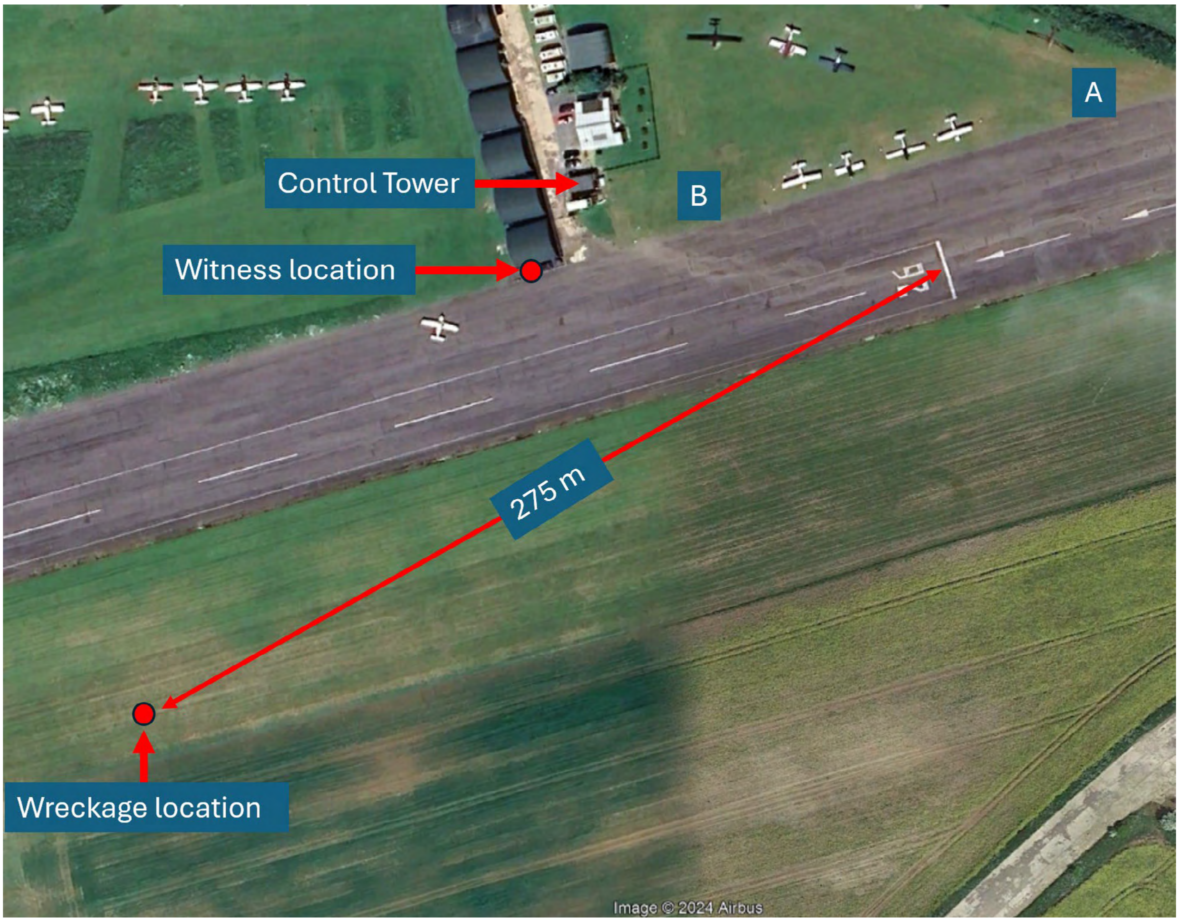

Figure 2

Relative position of control tower, taxi points A and B, witness and wreckage

Taxi and takeoff

The aircraft commenced taxiing towards Runway 26 at 1251:25 hrs from its parked position adjacent to the control tower. It taxied along the grass parking area to taxi point A, where it stopped short of the runway. The aircraft then remained stationary, consistent with pre-takeoff checks being performed, before the pilot transmitted at 1256:37 hrs that he was ready for departure. The flaps could be seen to be deployed but it was not possible at this point in the recordings to confirm their position. The radio operator advised that the surface wind was from 220° at 5 kt, which the pilot acknowledged; no further radio transmissions were received from the pilot. The wind direction and speed were consistent with the recorded footage of the airfield's windsock captured by the CCTV and witness video recordings. The aircraft then taxied to the runway where it was aligned to the right of the runway's centre line (Figure 3). At 1257:23 hrs the pilot commenced the takeoff run and the aircraft started to accelerate.

Figure 3
Aircraft at start of takeoff run

When the aircraft's airspeed reached approximately 45 kt, the tail of the aircraft lifted to an almost horizontal attitude (Figure 4), which coincided with a brief left rudder input, and the aircraft yawed to the left. The elevator could then be observed to move to a pitch up (control surface up) position, which was near to its full travel position, and the tail of the aircraft quickly lowered back towards the runway (Figure 5). The elevator remained in a pitch-up position, whilst the tailwheel tyre bounced on and off the runway surface several times. The aircraft's weight then settled on the tail wheel, which was almost coincident with the main landing gear tyres leaving the runway surface (Figure 6).

As the aircraft passed the witness's position, the pilot's head could be seen to be in an upright position and facing forward. At this point in the recording it was also possible to see that the flaps had been extended to about 10° and the elevator trim tab was set to approximately its mid-travel nose-up (surface down) position[1].

The aircraft continued to head towards the left side of the runway with the main wheels just clear of the runway surface whilst the tailwheel remained in contact (Figure 7). The aircraft's pitch attitude was about 12º nose-up. As the aircraft reached the side of the runway its airspeed was approximately 63 kt and it pitched up quickly at a rate of about 12º/s and started to climb (Figure 8). The elevators could then be seen to move quickly to a more neutral position. The pitch attitude reached just over 20º and the data indicated that the aircraft's airspeed reduced to approximately 58 kt. The aircraft then started rolling left, with a slight reduction in its pitch attitude to about 18º nose-up (Figure 9).

The aircraft's ailerons were then observed to move to a right roll position (left aileron surface down / right aileron surface up) (Figure 10) but the aircraft continued rolling left. The footage of the aircraft captured by the witness ended shortly after this point but the continuing flight path of the aircraft was recorded by one of the CCTV cameras (Figure 11). When the aircraft's bank angle reached about 30º, its pitch attitude briefly stabilised at about 15º nose-up but as the bank angle reached about 40º the roll rate increased quickly to about 70º/s. The aircraft's nose started to drop and the aircraft descended, with the bank angle reaching about 120º before the aircraft struck the ground, left wingtip first, at 1257:40 hrs.

The time interval from the start of the takeoff run to the aircraft striking the ground was about 17 seconds with the aircraft reaching a maximum height of approximately 30 ft agl. The rudder, elevators and ailerons could all be seen to have been moving during periods of the video footage and both flaps appeared symmetrically deployed.

Engine and propellor speed

The mobile phone recording contained sounds consistent with the operation of the aircraft's engine. This showed that at the start of the takeoff run the engine speed was about 2,000 rpm, and that the engine rpm was then progressively increased to a maximum of about 4,300 rpm; this equated to a propellor speed[2] of about 2,360 rpm. The recording indicated that this engine speed was maintained as the aircraft took off through to the aircraft subsequently striking the ground. There was no audible evidence of a problem with the engine, such as it backfiring.

Separate analysis using photogrammetry was also consistent with the propellor speed of about 2,360 rpm.

Footnote

1 The position of the flaps and pitch trim tab were established by comparing the images from the witness video recording with another Spitfire 26B with its flaps and trim tab set at known positions.

2 A reduction ratio of 1.82 between the engine speed and propellor speed is applied through gearing (ie an engine speed of 1,820 rpm = propellor speed of 1,000 rpm).

Figure 4
Tail initially lifts towards horizontal position

Figure 5
Tail wheel touches back down

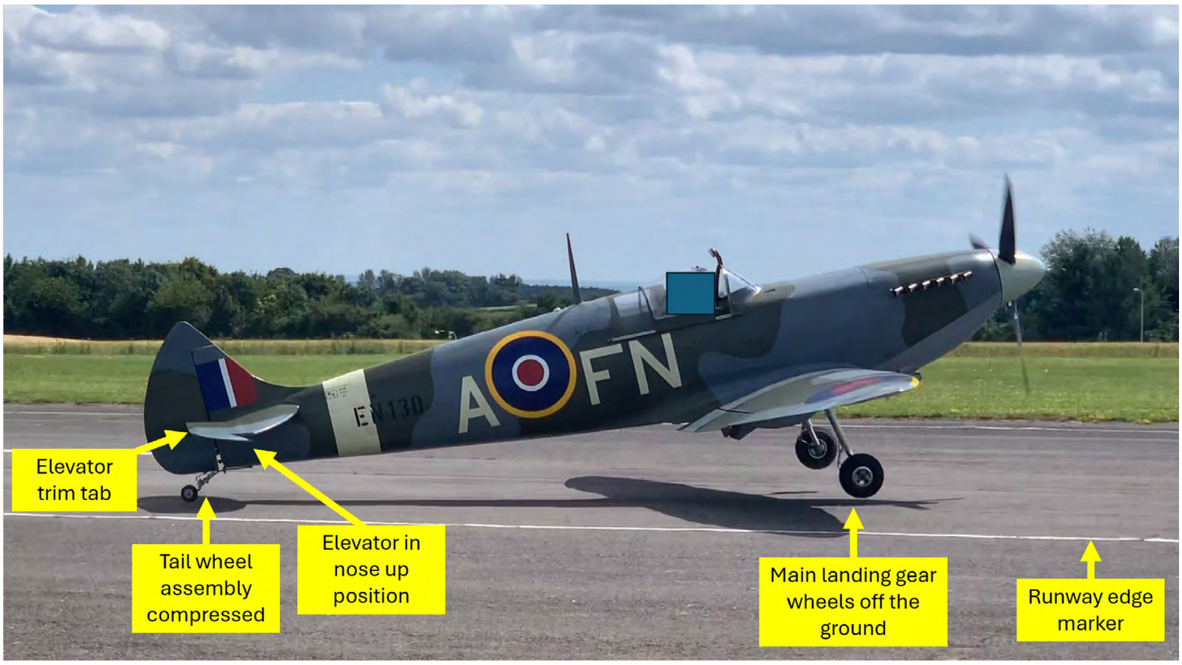

Figure 6

Aircraft attitude as it passed the witness position

Figure 7

Aircraft approaching the left side of the runway

Figure 8
Aircraft pitches up at 12º/s

Figure 9
Aircraft rolls left

Figure 10
Aircraft continues to roll left with counter (right roll) ailerons applied

Figure 11

CCTV image sequence

Previous video recordings

Several previous video recordings were obtained of G-ENAA taking off. These included the accident pilot taking off from Enstone Runway 26 in December 2017, recorded from an almost identical position as the accident video recording made by the witness. During the takeoff run, the tail of the aircraft had lifted to a near horizontal position which was maintained as the aircraft took off. Audio analysis of the video indicated that the engine speed reached about 4,400 rpm during the takeoff, which was about 100 rpm more than during the accident flight.

The previous videos of G-ENAA also showed a more gradual pitch up rotation at liftoff and lower pitch attitudes. Videos of other Mk 26B Spitfires also showed a similar tail-up takeoff technique, rotation rates and pitch attitudes.

Figure 12 shows the difference between G-ENAA's pitch attitude during the accident takeoff and that in December 2017, and Figure 13 shows the difference in the initial climb attitudes adopted.

Figure 12

Difference in pitch attitude prior to takeoff

Figure 13
Difference in pitch attitude during initial climb

Aircraft description

The Spitfire Mk 26B[3] is a kit-built scale replica based on the original Spitfire. The aircraft is supplied in kit form from a US based manufacturer. It is predominantly constructed from aluminium alloy skins riveted onto pre-formed frames, ribs and longerons. Although of a smaller scale, the profile of the wings and empennage mirrors that of the original Spitfire types.

Footnote

[3] The manufacturer introduced a series of scale replica Spitfires identified by their Mark (Mk). The Mk 25 is a 75% scale single seat aircraft. The Mk 26 is a 80% scale replica twin seat and the Mk 26B is a 90% scale replica twin seat. The Mk 26 and 26B fuselage dimensions differ from the Mk 25 but retain the 75% scale wing form.

The aircraft's flying control system is predominantly mechanical, relying on push-pull rods, torque tubes, bell cranks and levers to move the aileron, elevator and flap control surfaces. An electric motor operated by a switch in the cockpit, drives a common torque tube to move the flaps. There are no specific flap detents, but white marker lines painted on the inboard edge of the right aileron allow the pilot to judge flap position.

A trim tab on the right elevator is operated by a lever and Bowden cable[4] mechanism. The rudder control system consists of steel cables running from the rudder along the left and right side of the fuselage to the rudder pedals in the cockpit. A second cable runs forward from the rudder pedals, to form a continuous cable loop. This cable includes a turnbuckle at its midpoint and is routed through two pulleys on the left and right side of the footwell. The pulleys are mounted on a steel plate, on the aft face of the firewall. The rudder pedal position can be adjusted fore and aft in one of seven positions, but this can only be accomplished on the ground.

The pilot's seat has three positions to allow fore and aft adjustment of the seat on the ground by means of a pip-pin. A four-point harness, incorporating a quick release fitting (QRF) was fitted, with the shoulder straps attached to the rear cockpit bulkhead. G-ENAA had provision for a second seat behind the pilot, and this was also equipped with a four-point harness.

G-ENAA was powered by an Isuzu V6 fuel injected, normally aspirated, piston engine driving a three-blade variable pitch propeller. It was equipped with an electrically operated main landing gear and a fixed tail wheel and had a maximum takeoff weight of 860 kg.

An electrical stall warning tab was fitted to the right wing. In addition to modern analogue instruments, the cockpit instrument panel was equipped with several avionic devices including a digital MoTec SDL3 engine and electrical power monitoring display, and digital radio and transponder.

Aircraft information

G-ENAA was built and based at Enstone Airfield. The aircraft was constructed during 2013 and 2014 by a small team which included the accident pilot. This was followed by a period of test flying between October 2014 and March 2016. Since then, the aircraft had operated on an LAA Permit to Fly, for which the most recent certificate of validity was issued on 8 July 2024.

The aircraft was not flown between June 2019 and June 2021, nor between March 2022 and May 2023, when it was awaiting a replacement propeller following a propeller strike. For the purpose of renewing the Permit to Fly, two flights were flown on 11 May 2024, one on 14 July and another on 28 July, immediately prior to the accident flight. The most recent

Footnote

[4] A type of flexible cable used to transmit mechanical push-pull forces by the movement of an inner cable relative to a hollow outer cable housing. Typically, the arrangement consists of a solid inner cable core, an inner plastic friction-reducing sleeve, a steel sheath / hollow cable housing and a protective outer plastic covering.

annual inspection was completed on 30 June 2024 and, among other things, involved an engine oil change, replacement of the oil and fuel filters, cleaning of the air filter and replacement of the No.2 fuel pump. The aircraft had accrued a total flight time of 181 hours.

At the time of the accident G-ENAA was one of three Mk 26B's on the UK register. Another Mk 26B, G-CLHJ, was previously destroyed in a fatal accident near Enstone on 22 August 2023.

Aircraft Handling Notes

After it was built, the aircraft was flown by an LAA test pilot who made the following comments in his written report:

> *'a. The takeoff was spritely with rapid acceleration. The tail was lifted at 50 kt and a marked swing to the left was experienced.*
>
> *b. On earlier flights this swing could hardly be contained even with full application of right rudder. Full rudder deflection was found to be less than the factory recommendation but, following adjustment, the rudder deflection was adequate to retain directional control.*
>
> *c. Though the manufacturer indicated a CG envelope of 600 to 875 mm aft of datum, the aircraft was found to be longitudinally unstable at CG position 849 mm aft of datum. A limit of 745 mm aft of datum was suggested.*
>
> *d. In the aft CG condition, stick force per g gradient was found to be low so care was advised to avoid exceeding maximum g.*
>
> *e. Initially a marked left wing drop (> 60°) at the stall was exhibited in all configurations. Stall strips were fitted to the inboard leading edge of the wing which resulted in satisfactory stalling qualities.*
>
> *f. There was an audio stall warner fitted which activated 5 to 10 kt prior to all stalls. There was little or no buffet and no tendency to spin.*
>
> *g. The stalling speed wings level, with idle power was 48 kt flaps up and 43 kt with 10° of flap.*
>
> *h. In a 30° banked left turn at 75% power the stalling speed flaps up was 50 kt and with 10° flap 44 kt.*
>
> *i. The aircraft was found to have adequate pitch trimming at all speeds, except in the full flap, gear down, idle power configuration. In this condition nose up trim "ran out" but the control forces were light (of the order two to three pounds) and hardly noticeable.'*

The pilot's notes for the aircraft, given to the investigation by the syndicate, gave the following guidance for takeoff:

> *'Expect a tendency to swing to the left, gradually increase to full power, keep tailwheel in contact until 50 kt, unstick at 65 kt. Accelerate to 100 kt whilst raising the undercarriage and flaps.'*

A tendency to yaw left with increased power is normal for propeller driven aircraft of this configuration. The yaw results from the increasing slipstream from the propeller impinging on the left side of the vertical fin. Syndicate members told the investigation that they did not try to keep the tailwheel on the ground until 50 kt during the takeoff roll. Their usual practice was to allow the aircraft tail to rise naturally as the speed increased and they estimated this would be at around 35 kt.

In the accident video it appeared that the elevator trim tab was set to approximately its mid-travel nose-up trim condition for the takeoff.

Stalling in manoeuvre

The speed at which an aircraft suffers an aerodynamic stall varies as a consequence of manoeuvres and the variation of applied acceleration (measured in multiples of g, the acceleration due to gravity). The stalling speed will vary in proportion to the square root of the applied g. So, if an aircraft experiences a force due to an acceleration of 4 g then the stalling speed will be twice that in unaccelerated flight. From an analysis of the accident video an estimation of the applied g and, from this, the stalling speed was made to give an indication of this effect during this accident. During the rapid pitch up after takeoff it was estimated that the acceleration would be 1.7 g and, therefore, the stalling speed would need to be factored by 1.3. The aircraft had approximately Flap 10 deployed and power applied, so from the test pilot's notes the unaccelerated stall speed would have been approximately 44 kt. Factored by 1.3, this would give a stall speed in the manoeuvre of approximately 57 kt.

Post Stall Autorotation

When an aircraft rolls, the relative airflow (RAF) over each wing is formed from components of forward speed and roll as shown in Figure 14.

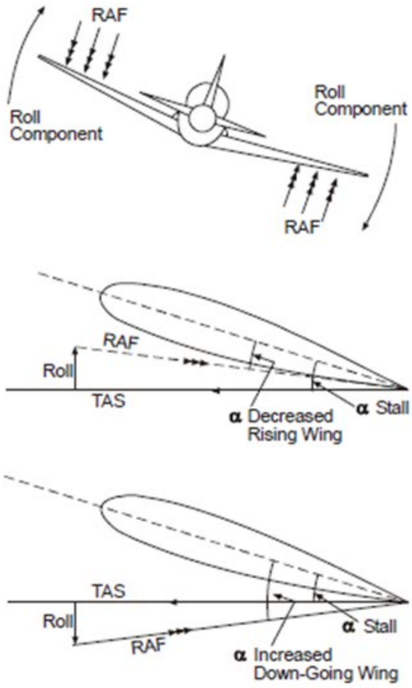

Figure 14

Change of angle of attack with roll

As an aircraft rolls, the angle of attack on the down going wing is increased. The lift produced by a wing will increase with angle of attack up until the point of a stall. If angle of attack continues to increase beyond the stalling angle then the coefficient of lift (C_L) on the wing will decrease and so exacerbate the roll. Deflecting ailerons downward increases the angle of attack of a wing, so any attempt to use them in the usual sense post stall will increase rather than correct any roll. As angle of attack increases, the coefficient of drag (C_D) produced by a wing also increases. So, if an aircraft rolls left post stall, the lift from the left wing will continue to reduce while the drag increases. The result of these two effects is the roll will increase, and the aircraft will yaw to the left. These effects are illustrated in Figure 15.

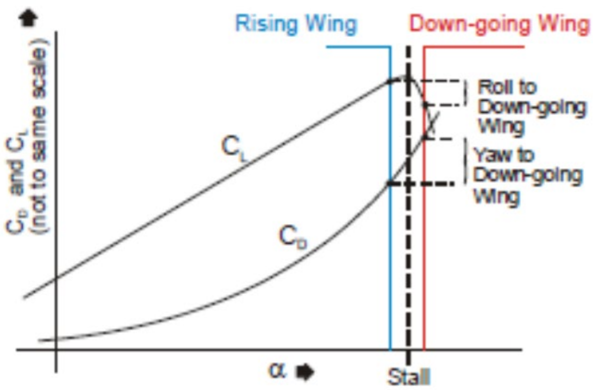

Figure 15

Variation of lift and drag with angle of attack

Aircraft examination

A preliminary examination of the aircraft was carried out at the accident site with further detailed examination conducted at the AAIB facilities.

General

The aircraft had suffered substantial impact damage, forcing the engine into the cockpit space. The intense post-crash fire was focused on the cockpit and centre section of aircraft and the majority of components in this area were totally consumed or rendered unrecognisable. The main spar had broken just outboard of the transportation joint, such that the left wing was completely detached from the aircraft. The main landing gear legs remained attached to the spar and were extended.

All but the outer third of the left wing had been consumed by the fire and the remainder had suffered extensive fire damage. Nothing remained of the stall warning system that could be tested. The right wing was intact and did not sustain any fire damage. The right wingtip was bent and the damage consistent with it having struck the ground as the aircraft was inverted. There was evidence that a stall strip had been glued to the right wing leading edge but it was not present and may have been dislodged in the impact.

Flying controls

Flying control continuity checks were conducted to the extent possible given the high level of disruption to the control systems from impact and fire damage. Flap and aileron control continuity was established on the right wing. The right wing flaps were found in the approximately 30° position but the inboard flap was damaged and the flaps may have moved during the impact sequence.

The horizontal stabiliser, elevators and trim tab on the right elevator appeared undamaged. The elevator moved freely and control continuity was established to just aft of the cockpit. Forward of this point, the control rod and linkage to the control column had been consumed by the fire.

The elevator trim tab was deflected approximately 20° down[5] (nose-up trim) and could not be moved from this position. The solid end fitting of the elevator trim cable was bent where it attached to the trim tab. The elevator trim cable had suffered varying degrees of heat damage along its length and the solid core could not be moved. In the areas where the fire had been most intense the outer plastic sleeve was completely absent and in other areas it had shrunk and formed around the steel sleeve. The inner anti-friction liner had melted and subsequently solidified in places, preventing movement of the cable. The trim tab moved freely once the cable was disconnected.

Footnote

[5] The elevator trim tab on the Mk 26B provides only nose-up trim (surface down). Examination of another Mk 26B showed that setting the trim lever to the full aft position corresponded to maximum nose-up trim (24° downwards surface deflection of the trim tab). When the trim lever was in the fully forward position, the trim tab was in the neutral position.

The routing of trim cable did not precisely follow the cable routing described in the Mk 26B constructor's manual. The outer plastic cover exhibited surface abrasion damage in several locations, and in one place was snagged where the cable passed through lightning holes in the fuselage frames.

The rear rudder cable loop was intact and continuity with the rudder surface was established by manually operating the cables, but the range of movement could not be checked because the top of the rudder was bent. Only the right rudder pedal assembly survived the fire. All that remained of the left rudder pedal was the brake cylinder.

Part of the forward rudder cable loop survived. The cable had failed in tension at the left side and the cable had been pulled to the right, such that the turnbuckle was jammed in the right pulley. This would have occurred when the engine firewall structure, on which the cable pulleys were mounted, was severely deformed during the impact sequence.

The AAIB investigation into the fatal accident to Spitfire Mk 26B, registration G-CLHJ, in August 2023 identified that the aircraft had been built with a misaligned rudder. This finding resulted in the LAA issuing a Mandatory Technical Directive to inspect the geometry, symmetry and rigging of the fin and rudder on all Mk 26 and Mk 26B Spitfires. G-ENAA was subject to that check in May 2024 and no anomalies were noted.

Seat

While the pilot's seat and much of its support structure were destroyed in the fire, the parts of the seat mounting structure which contained the seat adjustment mechanism were located in the wreckage and the pip pins were located in the middle position. This ruled out the possibility of the seat having moved during the takeoff.

Survivability

After the left wingtip struck the ground the aircraft continued to roll and came to rest inverted. Immediately after the aircraft struck the ground there was an intense fire which engulfed the cockpit area. The combination of accident and post-impact fire was not survivable.

The safety harness straps and seat furnishings had been destroyed by the fire, so limited assessment was possible. Two QRFs were identified in the wreckage; one, believed to be from the pilot's seat harness, had all four strap end fittings inserted into it and the other had only the fixed end fitting inserted.

Weight and balance

The pilot's weight was estimated at 70 kg and the fuel load remaining after the first sortie was approximately 85 litres. There was no baggage aboard the aircraft. Using those figures gave an aircraft mass of 781 kg and a CG position 690 mm aft of the datum. The aircraft was therefore within its mass and CG envelope.

Meteorology

The weather was good with only a light crosswind from the left. It was not considered to be a factor in the accident.

Post mortem report

Following the accident, the pilot's heart was examined by a consultant histopathologist. The results of that examination indicated that the pilot had coronary artery disease (ischaemic heart disease), and *'in the absence of other post-mortem findings, the severity of his coronary artery disease would be sufficient to account for a sudden cardiac death'.* In response to a request for clarification, the pathologist indicated that a *'sudden cardiac arrhythmia … would likely have rendered him incapacitated very quickly'*. He also said that *'he may have had an obstruction to a coronary artery resulting in chest pain that would have impaired his ability to control the aircraft'.*

The pilot had last undergone an aviation medical ECG in December 2022 which was assessed as normal. The pathologist stated that between 15 and 20% of sudden deaths due to ischaemic heart disease occur in patients with no previous history of the condition.

A summary of the report produced by the consultant histopathologist was included in the post mortem (PM) report written by a forensic pathologist. The PM report referred to the specialist examination of the pilot's heart and stated:

> *'There was no evidence of an acute blockage … that would have meant [the pilot] had been subject to sudden cardiac deterioration. However, the absence of acute blockage does not exclude a sudden cardiac deterioration (noting, of course that the level of disease would have been the same the preceding day, week and likely months with no (known) ill-effect)'.*

The PM report referred to the section of the consultant histopathologist's report that stated:

> *'There are contraction bands within the myocardium which may be associated with acute ischaemia but may be seen in resuscitation and correlation with the clinical history is required'.*

The PM report stated:

> *'Whilst this observation may suggest that the deceased was suffering from "acute ischaemia" – a reduction in blood flow to the heart muscle – and thus could be of potential relevance, it is suggested [in a referenced work] that this may arise as an artefact including in fatal air crashes'.*

The PM report stated that soot staining of the main airways *'indicated that [the pilot] was alive during the course of a fire'* (which occurred after the aircraft struck the ground). It went on to state that *'The medical cause of death can best be attributed to: Effects of Fire (principally inhalation of products of combustion)'.*

Comments from the CAA

The CAA was consulted on how the medical evidence should be interpreted in relation to the accident sequence and commented that 'there is evidence of control input which would not have occurred with an incapacitated individual'. This was in reference to the right roll input that was seen in response to the left roll. The CAA also considered that the observation that the pilot's head was upright during the first part of the takeoff indicated that he was not incapacitated at that point.

The CAA pointed out that coronary artery disease is *'extremely common, with a prevalence of almost 70% in males of this age'.*

Analysis

Technical aspects

Analysis of the audio signature from the witness video and separate photogrammetry analysis indicated that the engine achieved a maximum speed of approximately 4,300 rpm and this speed was maintained throughout the takeoff until the impact with the ground. There was no audible evidence in the recordings of any engine problems. Additionally, the condition of the propeller and the ground marks indicate that the engine was delivering substantial power at impact.

Examination of the aircraft, while limited to some extent by the disruption caused by the impact and fire, did not reveal any technical defects which may have adversely affected the controllability of the aircraft. Continuity of the flying control runs was established for the portions of the control runs which remained.

The as-found deflection of the trim tab was greater than that observed in the witness video. Fire and impact damage prevented the elevator trim cable from operating after the accident. The cable routing differed from that described in the constructor's manual and minor damage was observed on the outer plastic sleeve. This damage could have resulted from tensile forces imparted on the cable during the impact sequence, which would also have changed the trim tab position. Had the damage existed prior to the accident, neither it nor the cable routing are likely to have adversely affected operation of the trim cable, as the solid core moves independently of the outer cover. Additionally, another pilot who flew G-ENAA reported that the trim tab was not particularly effective and could easily be overcome by pilot force if it became jammed.

Given the extent of the fire damage, the possibility of a flying control restriction could not be completely eliminated based on the wreckage examination. However, the rudder, elevators and ailerons could all be seen to be moving during periods of the CCTV and witness video footage and both flaps appeared symmetrically deployed. This suggested that a control restriction or other control anomaly was highly unlikely.

The loss of control

The video obtained by the investigation showed the aircraft accelerate and the tail initially rise as expected. The aircraft tail then lowered back to the runway and the aircraft yawed left toward the edge of the paved surface. The aircraft would tend to yaw left with takeoff power applied, and to maintain a constant heading would require active correction by the pilot using the rudder pedals. As the aircraft approached the edge of the paved surface it lifted off, pitched up rapidly, then rolled and yawed left before striking the ground. In the video the aircraft ailerons were seen to be deflected in a right-roll position.

As the aircraft pitched up, the applied g and hence the stalling speed would have increased. It is probable that the aircraft speed was below the increased stalling speed in the manoeuvre and so the wing stalled. As there was power applied, once the wing stalled the torque reaction from the propellor would cause the aircraft to roll left, which was the motion observed. This was followed by a right-roll aileron input, but as this action deflected the left aileron downwards it would have increased the angle of attack on the left wing. Post stall, this increase in angle of attack would have further reduced lift on the left wing, exacerbating the roll to the left, and would have increased drag causing the aircraft to yaw left.

The roll to the left would have induced a sideslip which would also have caused the aircraft to yaw left. As the outside, right wing's speed would have been increased by the yaw, the lift on the right wing would also have increased further exacerbating the left roll. The aircraft rolled rapidly, and the left wingtip touched the ground causing the aircraft to continue to roll and yaw left before it came to rest. A large fire ensued around the forward fuselage area and the pilot sustained fatal injuries.

Reasons for the loss of control

The accident sequence began when the natural tendency of the aircraft to yaw left during takeoff was not contained, leaving the aircraft heading towards the left side of the runway. One explanation of subsequent events was that, given the marked pitch up control input, the pilot was trying to lift off as he approached the edge of the paved surface. The pilot may have suffered a startle response that caused his actions in the rapid pitch-up to be instinctive and – given the outcome – inappropriate. The nose-up trim setting would have reduced the control forces required to initiate the rapid pitch-up and so the pilot may have over-estimated the control input required to lift off. Once the aircraft began to roll left, the right-roll deflection of the ailerons observed in the video might have been an instinctive response from the pilot to attempt a correction of the roll attitude.

Another possible explanation for the loss of control was that the pilot became incapacitated at some point during the takeoff. Post-mortem examination revealed that he was suffering from coronary artery disease to an extent that could account for a sudden cardiac death or severe chest pain impairing his ability to control the aircraft. The conclusions of the PM report were more equivocal, however, and the CAA's view was that the fact that control inputs were observed suggested that the pilot did not become completely incapacitated. Nevertheless, some level of incapacitation short of collapse could not be excluded.

Conclusion

Immediately after takeoff the aircraft stalled during a rapid pitch up. Control was lost and the aircraft rolled and yawed left as a result of a post-stall autorotation. The left wing struck the ground, the aircraft came to rest inverted and caught fire, and the pilot was fatally injured. Despite the extensive damage sustained during the impact and ensuing fire, there was no evidence of a malfunction or failure of any of the aircraft's flying control systems that would explain a loss of control. It was possible that the pilot did not control the yaw during the takeoff run, initiated a rapid pitch up to lift off before running off the side of the runway and, in so doing, began the sequence of events. Although the medical evidence did not permit a definitive conclusion, it was also possible that the reason for the loss of control was that the pilot became incapacitated to some extent during the takeoff.

Published: 4 December 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.

Serious Incident

Aircraft Type and Registration:	Airbus A320-251N, G-UZEF
No & Type of Engines:	2 CFM International Sa LEAP-1A26 turbofan engines
Year of Manufacture:	2025 (Serial no: 12383)
Date & Time (UTC):	20 April 2025 at 0547 hrs
Location:	South-western UK Airspace
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 6 Passengers - 177
Injuries:	Crew - None Passengers - None
Nature of Damage:	None
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	53 years
Commander's Flying Experience:	15,100 hours (of which 9,100 were on type) Last 90 days - 115 hours Last 28 days - 45 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and enquiries by the AAIB

Synopsis

The crew left the ditching pushbutton selected when re-configuring the aircraft from the de-icing checklist. With the ditching pushbutton selected the aircraft did not pressurise and the cabin altitude slowly increased as the aircraft climbed to its cruise altitude of FL390. The crew were alerted to the increasing cabin altitude[1], and an emergency descent was performed. During this procedure the commander noticed the ditching pushbutton was on and once this was deselected the aircraft pressurisation returned to normal. The aircraft was levelled at FL200 and after some analysis the crew determined that they could continue with the flight to their destination. The aircraft climbed up to FL370 and the rest of the flight was completed without further incident.

The operator and the manufacturer have taken safety action to raise awareness of the event and to amend the de-icing checklist

History of the flight

The flight crew were operating an early morning scheduled service from Belfast Aldergrove airport (Belfast) to Palma de Mallorca airport, Spain (Palma). The flight was a training flight

Footnote

1 Cabin altitude is pressure level of an aeroplane's cabin expressed as an equivalent altitude above mean sea level.

for the co-pilot, who had completed 36 of the planned 50 training sectors. The aircraft had arrived late from its previous flight that morning. As the flight crew walked towards the aircraft, the commander noticed what appeared to be ice on the upper surfaces of the wings, fuselage and stabiliser.

Once the crew were in their seats, the commander took a few minutes to settle the co-pilot. He explained the aircraft would probably need to be de-iced; a process which the co-pilot had not experienced before. In addition to completing the regular pre-flight procedures, the flight crew needed to configure the aircraft for de-icing before the de-icing crew arrived.

The commander used the relevant checklist in the Quick Reference Handbook (QRH), which was available to both crew members on their electronic tablet devices, to configure the aircraft. The de-icing crew arrived and performed a tactile check, reporting to the commander there was no longer any requirement to de-ice. Therefore, the flight crew began to reinstate the configuration of the aircraft referencing the checklist but, in doing so, omitted to return the ditching pushbutton to OFF (Figure 1).

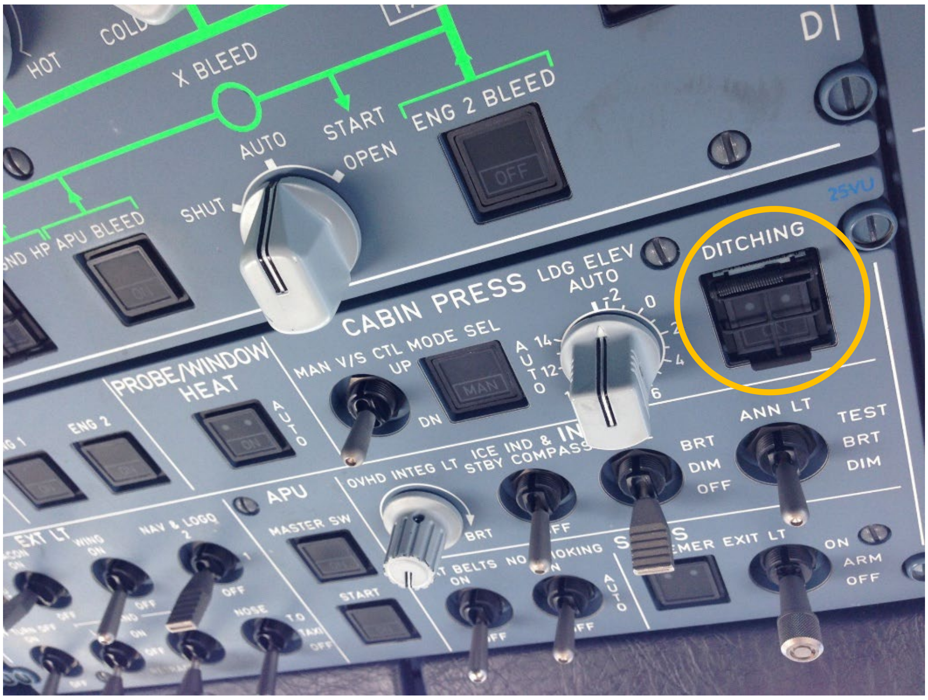

Figure 1

Ditching pushbutton, situated on the right side of the overhead panel ©A320 Guide

The flight departed with the co-pilot operating as PF and the commander as PM. Shortly after the aircraft reached cruising altitude, the crew noticed that the cabin altitude indication was rising. With limited time for discussion, the commander announced, “oxygen masks on, 100%”. Having both donned their oxygen masks, the commander alerted the cabin crew with a public address. The commander then announced an emergency descent, instructing the co-pilot to declare a MAYDAY. The commander could be heard on the CVR verbally monitoring the cabin altitude and prompting the co-pilot with his memory actions, eventually taking over and initiating the descent. During this period the Electronic Centralised Aircraft Monitoring (ECAM) warning for excess cabin altitude sounded, and the crew commenced the procedure for dealing with that.

With the aircraft descending, the commander switched the annunciator lights[2] to BRIGHT, to facilitate a check of the overhead systems panels. Looking at the panels with the lights now at bright he noticed that the ditching pushbutton ON light was illuminated. Realising this was the reason behind the cabin altitude warning and slow decompression, the flight crew requested to level off the aircraft with ATC. The ditching pushbutton was reset to OFF, and the cabin pressurisation resumed a normal profile, negating the requirement for the flight crew to remain on oxygen. The ECAM pressure altitude warnings ceased and after further communication with ATC the aircraft levelled at FL200.

The cabin manager confirmed there had been nothing abnormal in the cabin and reported that passengers seemed unaware of the descent. The commander discussed and generated options about the ongoing flight with the co-pilot, checking the fuel status before deciding to climb back up to cruise at FL370, and continue to Palma.

Recorded information

The aircraft was fitted with Combined Voice and Flight Data Recorders which were downloaded at the AAIB. Both recorders captured the event and were used to help write the history of flight.

At 0453 hrs, the recorded outflow valve position moved from 100% (fully open) to 0% (fully closed) and remained in this position until the event. The aircraft took off at 0523:30 hrs and climbed progressively to FL390, during which the recorded cabin altitude climbed (Figure 2).

Footnote

2 The annunciator lights are integral lights within the pushbutton switches of the flightdeck, they can be selected to BRIGHT or DIM or to TEST which illuminates all the annunciators at the same time.

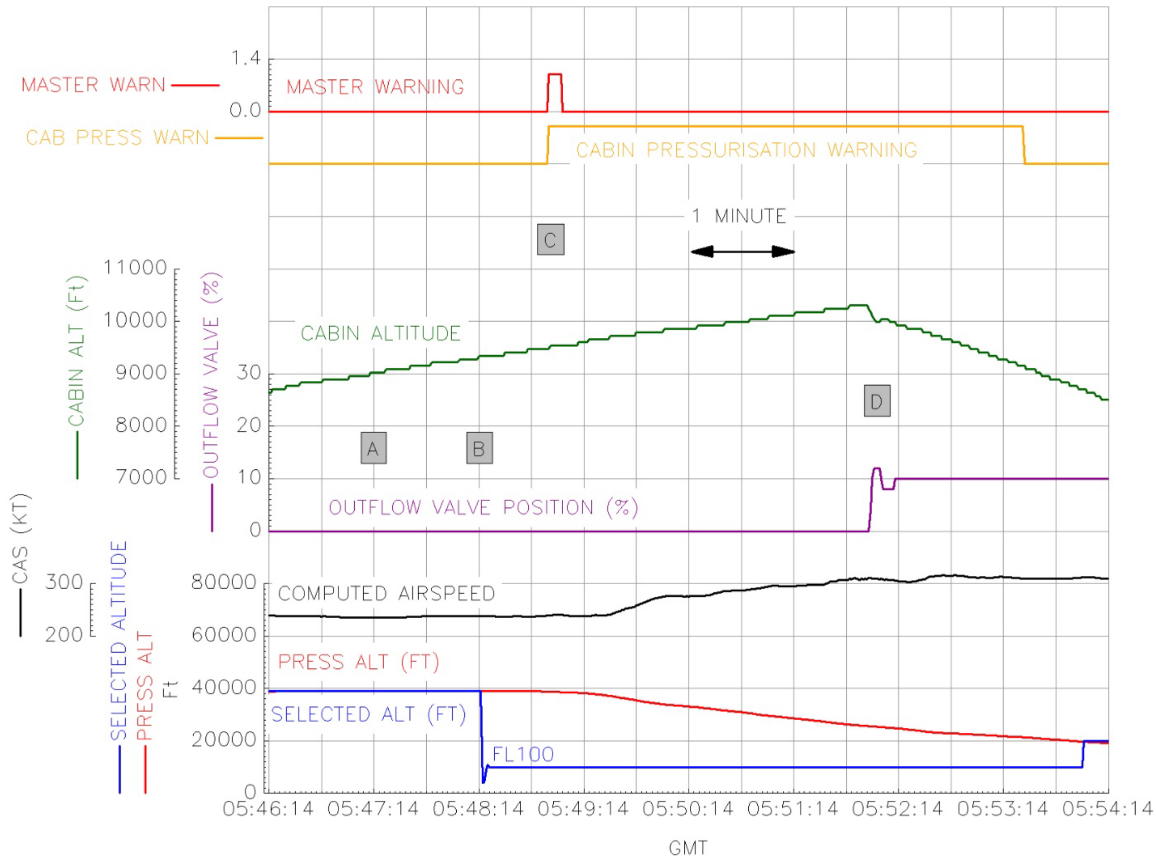

Figure 2

G-UZEF FDR data

At 0547:14 hrs, the aircraft was at FL390 and the recorded cabin altitude was climbing past 9,000 ft. The CVR recorded the commander questioning why both packs were shown as OFF (Figure 2, Point A). The crew donned oxygen masks and a minute later, the autopilot selected altitude reduced from FL390 to FL100 and the aircraft descended (Figure 2, Point B). A MAYDAY was declared and the cabin altitude continued to climb. At 0548:54 hrs, the recorded cabin pressurisation warning was recorded, accompanied by a Master Warning audible on the CVR (Figure 2, Point C).

The flight crew performed the ECAM actions and continued discussing why the packs were OFF. They determined that the ditching pushbutton was selected[3] and at 0551:57 hrs, the recorded outflow valve position increased to 12% and the cabin altitude began reducing (Figure 2, Point D). Approximately 90 seconds later, the recorded cabin pressurisation warning reset. Maximum recorded cabin altitude was 10,304 ft.

Aircraft information

Aircraft pressurisation system

The A320 series is fitted with an automatic cabin pressurisation system. Its primary function is to adjust cabin altitude and its rate of change to provide occupants of the aircraft with a

Footnote

3 Position of the DITCHING pushbutton was not recorded.

comfortable flight. When normally operating, cabin pressurisation is fully automatic. There is an outflow valve on the right side of the fuselage behind the aft cargo compartment. In normal operation the position of that valve is controlled by one of two cabin pressure controllers.

Air for pressurisation and air conditioning is supplied by two air conditioning packs. The packs receive bleed air from the engines or the auxiliary power unit (APU). Bleed air sources and packs are switched on and off using individual pushbuttons on the air condition systems panel on the overhead panel (Figure 3). The air flow into each pack is regulated by a pack control valve.

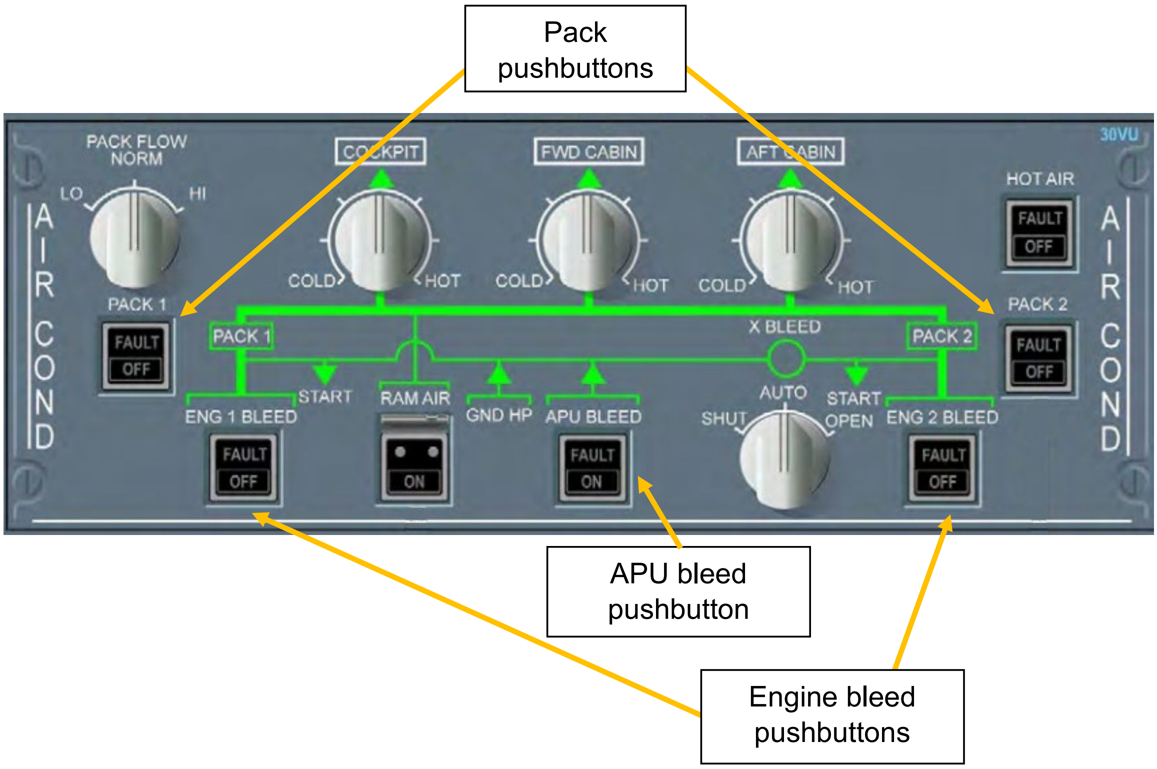

Figure 3

Air conditioning controls on the overhead panel ©Airbus

When the aircraft is on the ground, the cabin can also be conditioned using a ground air source. That does not involve using either of the aircraft's air conditioning packs.

The aircraft's ECAM system presents information to the pilots on two central screens in the flight deck. It displays primary engine indications, fuel quantity, flap and slat positions, bleed air configuration, warning and caution alerts, and memos. The ECAM pages include synoptic diagrams of all the aircraft systems with status messages. The system page for the bleed system contains indications about the position of the pack control valves (Figure 4).

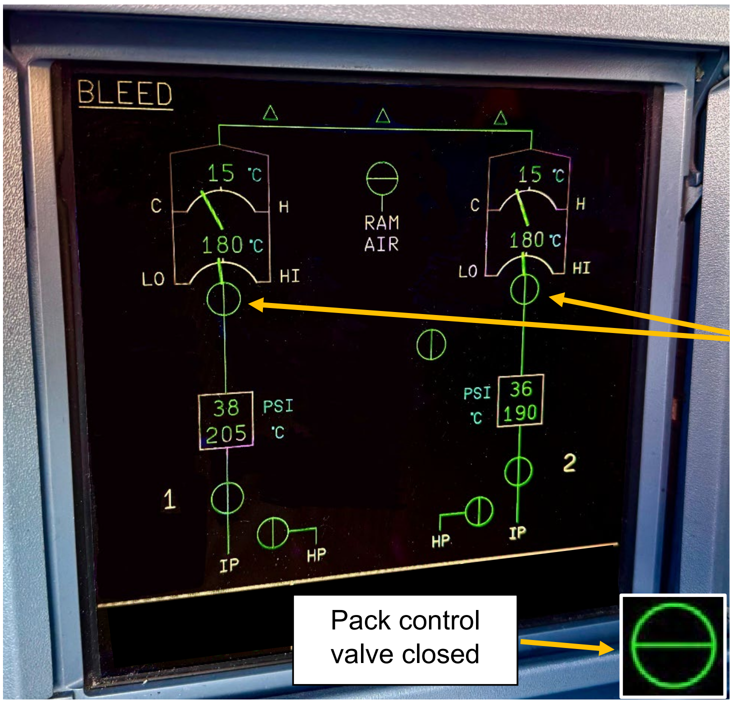

Figure 4

Bleed ECAM systems page with inset showing how closed valve would be displayed
©A320 Guide

The cabin pressure page shows the position of the outflow valve, cabin altitude, differential pressure, and rate of cabin altitude climb or descent (Figure 5). There are two pack indications which are small triangles above the related pack label. These triangles are normally green with the pack label in white. Both become amber when the pack flow control valve is closed with the associated engine running.

Figure 5

Cabin Pressure ECAM system page ©Airbus

Ditching pushbutton

The aircraft has a ditching pushbutton on the cabin pressurisation system section of the overhead panel (Figure 1). It is used if the aircraft ditches on water to minimise water entry into the aircraft. The pushbutton is guarded and when operated signals the outflow valve, and any valves below the flotation line of the aircraft, to close. It also signals the pack control valves to close regardless of any other control signals. As long as the ditching pushbutton is selected, the outflow valve and pack control valves will remain closed. There is no direct indication on the ECAM of the position of the ditching pushbutton.

The manufacturer specifies that in flight, the PF and PM must crosscheck guarded controls before operating them. There is no such specification for their operation on the ground.

De-icing procedures

Aircraft performance is certified based on a clean wing without any ice or other frozen precipitation on it. If ice is present the aircraft must be de-iced/anti-iced as required before departure even if the temperature is above freezing.

De-icing requires fluid designed to remove ice being sprayed on the effected surfaces of the aircraft. To reduce the possibility of fluid from being ingested into the cabin the crew must configure the aircraft beforehand. This involves turning off all sources of bleed air as well as selecting the ditching pushbutton. The checklist is available in the QRH and the Flight Crew Operations Manual. There is an additional checklist for reconfiguring the aircraft after spraying is completed which includes deselecting the ditching pushbutton and checking the outflow valve is open on the relevant ECAM systems page. The manufacturer's guidance on the use of such 'supplementary' checklists is:

> *"The procedures should be applied in accordance with the READ & DO principle, i.e. the PM reads the procedure and the PF or the PM acts on the controls, depending on the context".*

Because G-UZEF was not actually sprayed with fluid, there were items in the reconfiguration checklist which would not have been relevant to the crew, for example, receiving the de-icing report. Therefore, these steps would have been skipped over during the reconfiguration process.

Emergency descent procedure

The manufacturer states that crews should initiate an emergency descent if they identify a depressurisation event. Relevant indications are the cabin altitude and cabin rate of climb readings, the excess cabin altitude alert, and the oxygen masks dropping down in the cabin. The cabin altitude will begin to flash on the ECAM systems page at 8,800 ft cabin altitude. The excess cabin altitude alert triggers when the cabin reaches or exceeds 9,550 ft. The crew are required to drop the oxygen masks for the cabin manually if the cabin altitude exceeds 14,000 ft or is obviously going to do so. The automatic system will drop the masks at cabin altitude14,000 ft regardless.

Additional information from the crew

Commander

The commander was an experienced training captain with the operator. He described the light conditions on arrival at the aircraft as dark with dawn just approaching as they started their pre-flight preparation of the flight deck.

The commander stated he was keen to reduce delays to the aircraft's flying schedule for the day. He commented he may have felt pressure to get the aircraft ready for departure after establishing it did not require de-icing. He said he may have reconfigured the aircraft himself rather than completing the checklist as 'read and do'. He noted that "when looking up at the overhead panel in those light conditions, with the annunciator lights on dim, the ditching pushbutton light, if illuminated, is not clearly visible".

The flight proceeded normally, climbing to a cruise altitude of FL390. As the aircraft levelled off, the commander saw the cabin pressure reading appear on the lower ECAM screen, flashing, at 9,100 ft. He also noted that both pack indications on the page were in amber, although the pack switches on the overhead panel were ON with no fault lights. Shortly afterwards the ECAM EXCESS CABIN ALTITUDE warning was generated. With the cabin altitude still climbing the commander announced that both should don their oxygen masks and commence an emergency descent. The commander actioned the PM memory item of switching on the seat belt sign but noted the co-pilot seemed hesitant with his actions. He prompted the co-pilot but after a very short delay took control and initiated flying the emergency descent.

During the descent the commander recycled the pack switches and noticed the annunciator light setting was still at DIM. He reset the switch to BRIGHT and saw the ditching pushbutton was still ON from the de-icing. That switch was deselected and the aircraft pressurisation resumed. The commander levelled the aircraft off at FL200 to assess the aircraft's status. He spoke with the cabin manager and confirmed that normal operations were resumed. The flight crew discussed the situation and after reviewing the fuel state, confirmed they could continue to their destination. The aircraft climbed to FL370, and the rest of the flight was completed without incident.

Co-pilot

The co-pilot was about halfway through his initial line training with the operator. This was his first job as a pilot having completed his flight training.

He described conditions as they approached the aircraft on the ramp as dark and overcast. He noticed as they climbed the aircraft's steps that the wings seemed to be covered in frost. He had never de-iced before and was unfamiliar with the checklist and process. As a crew, they began preparing the aircraft for the flight. The commander brought up the de-icing supplementary checklist on his tablet and the co-pilot asked the commander to take him through it. The commander performed the checklist as read and do, reading the items and making the selections himself. The co-pilot checked the commander's selections while referencing the checklist on the commander's tablet across the flight deck. He did not bring up the checklist on his own tablet. Once they had established de-icing was not required, the commander got the checklist out again and ran through the re-configuration. The co-pilot again read the checklist across the flight deck and did not notice the ditching pushbutton had been omitted.

When the aircraft reached the cruising altitude of FL390, the co-pilot (as PF) began completing the cruise checks of all the systems pages on the ECAM. When he looked at the cabin pressurisation page, he noticed the cabin rate of climb and the cabin altitude did not look as he expected for that phase of flight. He alerted the commander to the page, and they began to troubleshoot. They noted that the pack indications were amber but, on checking the overhead panel, both packs were selected ON, with no fault lights. The cabin altitude continued to climb, and the commander called for the crew to go onto oxygen and to initiate an emergency descent.

The co-pilot said that, having donned his oxygen mask and established communications with the commander, he was just about to initiate the descent when the commander took control. The co-pilot then adopted the PM role. At some point during the descent the commander switched the annunciator lights from DIM to BRIGHT and saw that the ditching pushbutton was on. The commander de-selected the ditching pushbutton and the pressurisation returned to normal. The commander levelled the aircraft at FL200, and the crew discussed what had happened and what their options were. Given the passenger oxygen masks had not dropped, and the aircraft had sufficient fuel for the destination, the crew decided on continuing to Palma. The co-pilot resumed control as PF, and they climbed to FL370. The flight was completed without further incident.

Other information

Information from the operator

The operator identified 19 further events involving the ditching pushbutton between 2015 and the event with G-UZEF. All the other events were on the ground and involved the selection of APU bleed air, or the use of external air with the ditching pushbutton still selected. These generated an ECAM alert for overpressure or for excess residual cabin pressure. The events were generally due to delays to de-icing which resulted in the cabin temperature increasing and the crew attempting to provide air conditioning with the outflow valved closed.

A number of these reports included comments about it being difficult to see the ditching pushbutton, and associated internal lighting, from the left seat because it is obscured by the landing elevation dial (Figure 1) which protrudes from the panel.

The operator intends to include this event in their pilot safety magazine in October 2025, and to include elements of it in its upcoming 'winter operations' computer-based training package, which is in its final stages of development.

Information from the manufacturer

The manufacturer is aware of six previous events where the ditching pushbutton being selected ON has triggered the excess cabin altitude alert in flight. Four of these events were caused by the ditching pushbutton being left ON after de-icing. The manufacturer was unable to determine the cause of the remaining two events because of insufficient information.

Analysis

After configuring the aircraft for de-icing, which was then not required, the crew re-configured the aircraft, but did not deselect the ditching pushbutton or check that the outflow valve was open, as required by the checklist. The commander, who was PM for the flight, performed the configuration as 'read and do' with the co-pilot watching. The co-pilot, who was under training, had never performed the de-icing procedure before, and the checklist was unfamiliar. The commander felt some time pressure to get the aircraft away as close to scheduled time as possible and, as a result, probably completed the re-configuration with little reference to the checklist. The unusual situation of the eventual lack of de-icing also meant that several of the items on the checklist were not relevant and were skipped. With the dark light conditions, the flight deck annunciator lights had been set to DIM. That, together with the ditching pushbutton being difficult to see from the left seat, meant the commander did not notice it was illuminated until after the emergency descent had been initiated, when he switched the annunciator lights to BRIGHT.

Selecting the ditching pushbutton signals the pack control valves to close regardless of the pack and engine bleed selections. That meant there was no air flowing into the packs which normally provide air for pressurisation of the cabin. As the aircraft climbed, the pressure in the cabin slowly reduced as the air leaked out. Eventually, as the aircraft reached FL390, the ECAM alerted the crew to the pressurisation problem.

Having noticed the cabin altitude continuing to rise, but without an identifiable reason for it, the commander instructed that they should both go onto oxygen and initiate an emergency descent. The descent was well managed as a crew, with the commander taking over when he felt the co-pilot hesitated, and the co-pilot providing good support once he had become PM. During the descent, the commander switched the annunciator lights to BRIGHT and noticed the illuminated ditching pushbutton. De-selecting the button saw the aircraft immediately begin to pressurise. The commander levelled the aircraft at FL200 where the crew discussed their options using the operator's decision-making framework. They concluded that they could continue to their destination, so climbed up to FL370 and continued the flight without further incident.

The operator had recorded 19 previous events, where the ditching pushbutton had not been deselected, but all of those occurred on the ground. A number of those reports noted difficulty in seeing the ditching pushbutton from the left seat. The manufacturer recorded six events where ECAM alerts were generated in flight because of the ditching pushbutton being ON. Four of those involved incorrect reconfiguration after de-icing, with the other two having insufficient information to tell.

Conclusion

The event was caused by missing checklist items that were not noticed by either crew until the cabin altitude reached the threshold for the aircraft system alerts. The crew managed the event successfully, getting the aircraft into a descent before the situation in the cabin required the passengers to use oxygen masks. Once the error was detected and rectified, the crew reviewed their situation and concluded that it was appropriate to continue to their destination.

Safety action

Both the operator and the aircraft manufacturer took safety action as a result of this event:

- The operator included this event in their pilot safety magazine in December 2025.

- The manufacturer updated the de-icing checklist to add a comment and a note below the action lines “DITCHING pb … ON” and “DITCHING pb ….OFF” to draw the attention that if the ditching pushbutton is left ON after completion of the fluid spraying, it will lead to a lack of pressurisation in flight and ultimately to the triggering of the excess cabin altitude alert.

Accident

Aircraft Type and Registration:	Airbus A380-841, G-XLEI
No & Type of Engines:	4 Rolls-Royce RB211 Trent 970-84 turbofan engines
Year of Manufacture:	2014 (Serial no: 173)
Date & Time (UTC):	6 December 2024 at 1203 hrs
Location:	Over the Atlantic Ocean, South of Greenland
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 24 Passengers - 277
Injuries:	Crew - 1 (Serious) 23 (None) Passengers - 1 (Serious) 276 (None)
Nature of Damage:	None
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	57 years
Commander's Flying Experience:	21,557 hours (of which 5,178 were on type) Last 90 days - 172 hours Last 28 days - 44 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent enquiries by the AAIB

Synopsis

The aircraft was flying from Los Angeles to London at FL390. The route crossed an area of forecast turbulence south of Greenland, which the flight crew were monitoring using a live weather application on their tablet devices. The passenger seat belt signs were switched on, but a short period of turbulence caused two people in the cabin to fall and sustain serious lower leg injuries. Live weather app technology and ground-based medical advisory services assisted the flight crew's decision making.

History of the flight

The aircraft was operating a passenger service from Los Angeles international airport to London Heathrow airport (Heathrow). It climbed to FL 390 for the Atlantic crossing.

The briefing documentation provided to the crew before departure contained no 'significant weather warnings' (SIGMETs)[1] for the route. The North Atlantic significant weather chart valid at 1200 hrs (Figure 1) forecasted that the aircraft would transit an area of moderate turbulence south of Greenland.

Footnote

[1] 'SIGMET' – an advisory about weather conditions significant to flight safety.

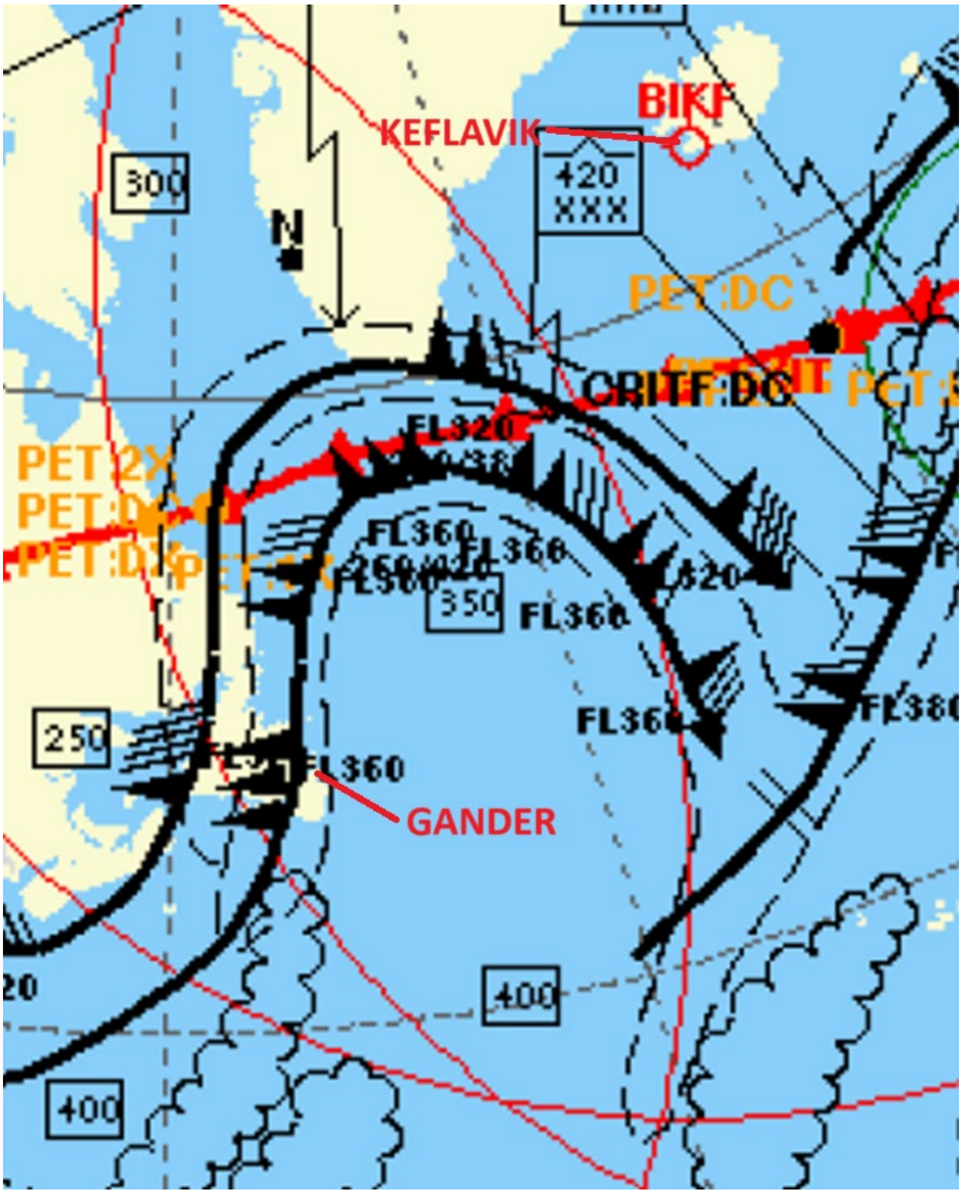

Figure 1

Excerpt of weather chart showing jet stream at FL360, and related forecast turbulence

In addition to the pre-flight briefing documentation the crew had access to a weather 'app' on their electronic flight bags (EFB)[2], which receives live updates during the flight via the aircraft's Wi-Fi. From that, the crew became aware of a forecasted area of potentially severe turbulence developing. As the aircraft approached this area the commander switched on the passenger seat belt signs. He subsequently asked the cabin crew to secure cabin equipment and take their own seats[3]. The app's live updates showed no actual traces of turbulence in the previous two hours, and a nearby aircraft had experienced insignificant turbulence[4].

Footnote

[2] The operator supplies each pilot with a tablet device containing operational documentation.
[3] These actions are aligned with the operator's Part B guidance on 'anticipated turbulence'.
[4] The app shares information between aircraft – see Meteorology section later in the report.

Around 20 minutes after the seat belt signs were switched on, there was an episode of turbulence lasting around 10 to 15 seconds which the commander said he perceived as light to moderate. Recorded data showed the aircraft's speed varied by around plus or minus 13 KIAS, but was controlled by the autopilot (Figure 3). During this time, a member of cabin crew (Figure 2) was lowering her crew seat to strap herself in when the turbulence raised her up after which she fell, breaking her ankle. She called the flight deck using an interphone to explain she was injured. Another member of cabin crew informed the In-flight lead (IFL)[5].

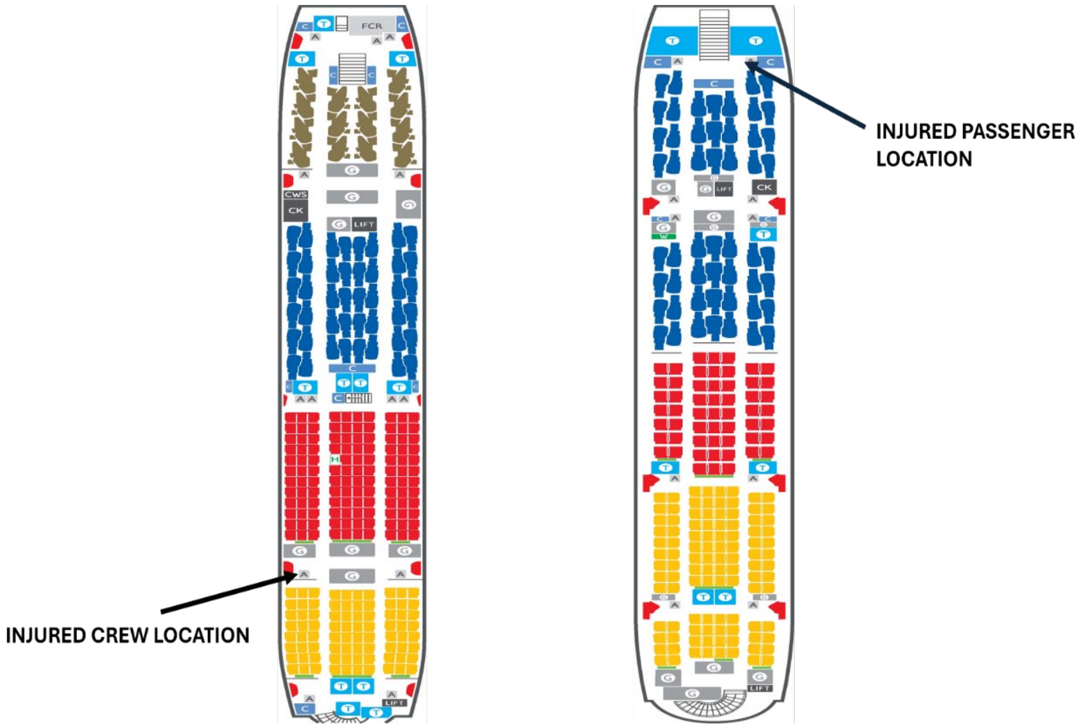

Figure 2

Location of injured persons on the lower deck (left) and upper deck (right)

Soon after, the IFL was informed that a passenger in the upper deck was also injured. That passenger reported that he left his seat to use the lavatory. He described the aircraft as "undergoing light chop" but, having been asleep prior to that, had not noticed the seat belt signs being on, and had not heard any announcements. While returning to his seat he described the aircraft making a sudden movement upward and sideways, and believed that the movement of the floor with respect to his foot broke his ankle.

The flight deck crew called MedLink[6] for advice. Two other passengers – who were doctors – assisted with the injured persons, using splints to support their ankles and administering pain relief. The cabin crew and doctors used on-board materials to create additional splints secured with items of clothing to supplement the medical kit supplies.

Footnote

5 IFL – the senior cabin crew member.

6 MedLink – a ground based medical assistance service which is contactable in-flight – Medical and Aviation Security | Ground-Based Medical Advisory Service (MedLink) [accessed 11 December 2025].

Shortly after the turbulence injuries, a different passenger became unwell and lost consciousness. Members of cabin crew and one of the doctors assisted that passenger, and the flight crew again sought advice from MedLink. During the event, the IFL ensured the cabin manager and other crew members returned from their rest periods to ensure the medical issues and other essential duties[7] were covered.

The commander said he considered diverting the aircraft to Gander international airport, Canada, or Keflavik international airport, Iceland (Figure 1). However, Gander's weather was below the required landing minima and Keflavik's runway was contaminated with ice. After discussions with MedLink, the doctors on board, and the cabin crew, he decided to continue the flight to Heathrow. A medical 'PAN' was declared, and ATC facilitated a direct routing to Heathrow. On landing, ambulances met the aircraft and took the three casualties to hospital.

Recorded information

Flight data was recovered for the event and presented in Figure 3.

G-XLEI was cruising at FL390 and about 270 kt at the start of the turbulence. The seatbelt sign was switched on at 1142 hrs and remained on for 1 hour. The minimum recorded normal acceleration (0.5g) and maximum (2.1g)[8] were within four seconds of each other at about 1202 hrs (Figure 3 inset). For the remaining time the normal acceleration was nominally 1±0.2g with the occasional spikes down to 0.5g and up to 1.5g.

Footnote

7 The operator's *'Medical action plan'* required three members of crew attend each patient.
8 The limit manoeuvring load for a commercial aircraft must be at least 2.5g. CS-25 Amendment 28 | EASA.

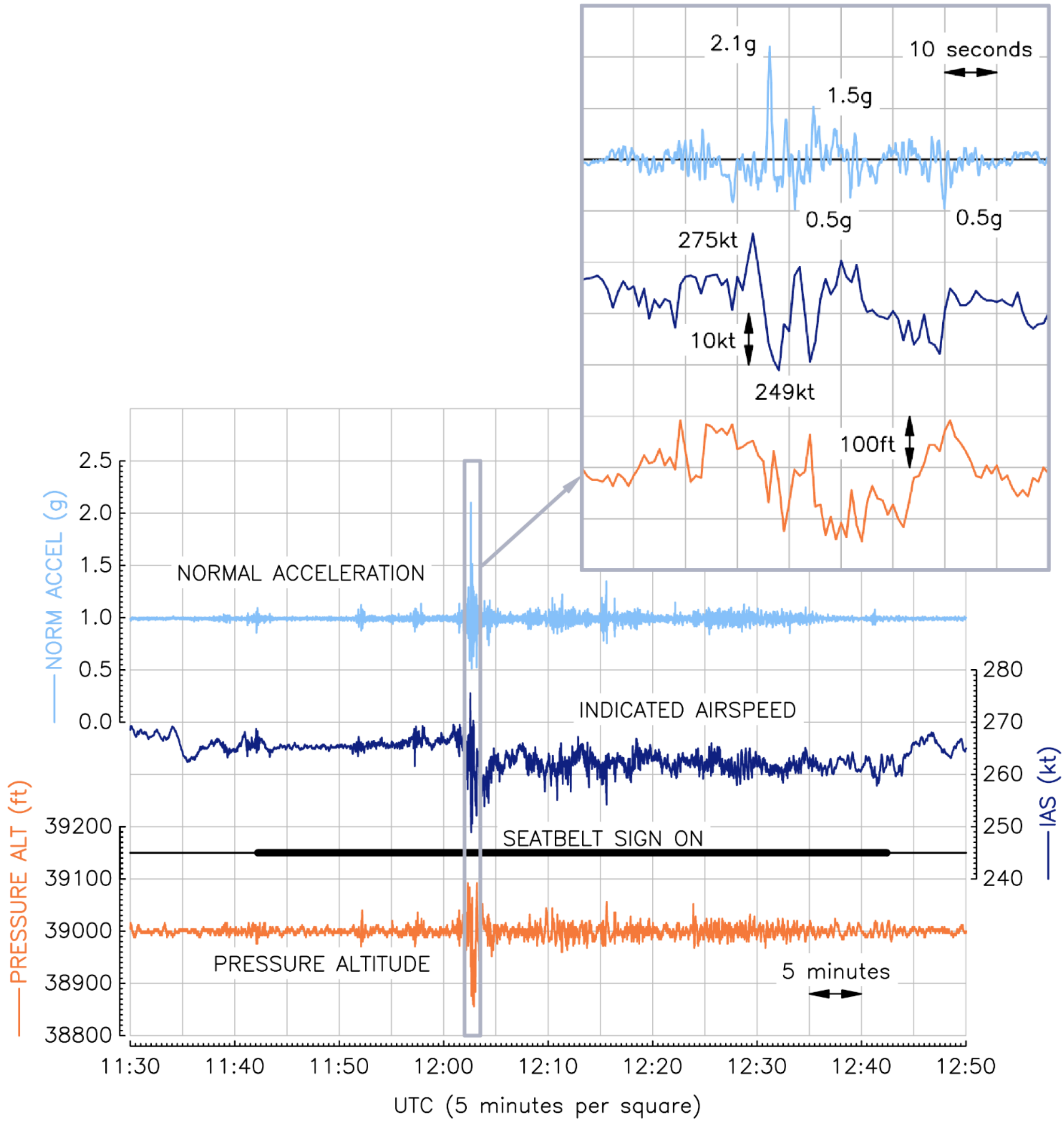

Figure 3

G-XLEI flight data for the turbulence event

Meteorology

The Met Office produced a report on the weather situation for the time of the event. It contained an analysis of the Eddy Dissipation Rate (EDR) for the region (Figure 5). EDR represents the rate at which turbulent kinetic energy is converted into thermal energy. It is used in flight planning and real-time weather monitoring. Higher EDR values correspond to more intense turbulence, while lower values suggest smoother airflow. The report explained that the position of the aircraft when the accident occurred is annotated as a black 'x' on Figure 4, which was *'located within a large area of moderate turbulence'*.

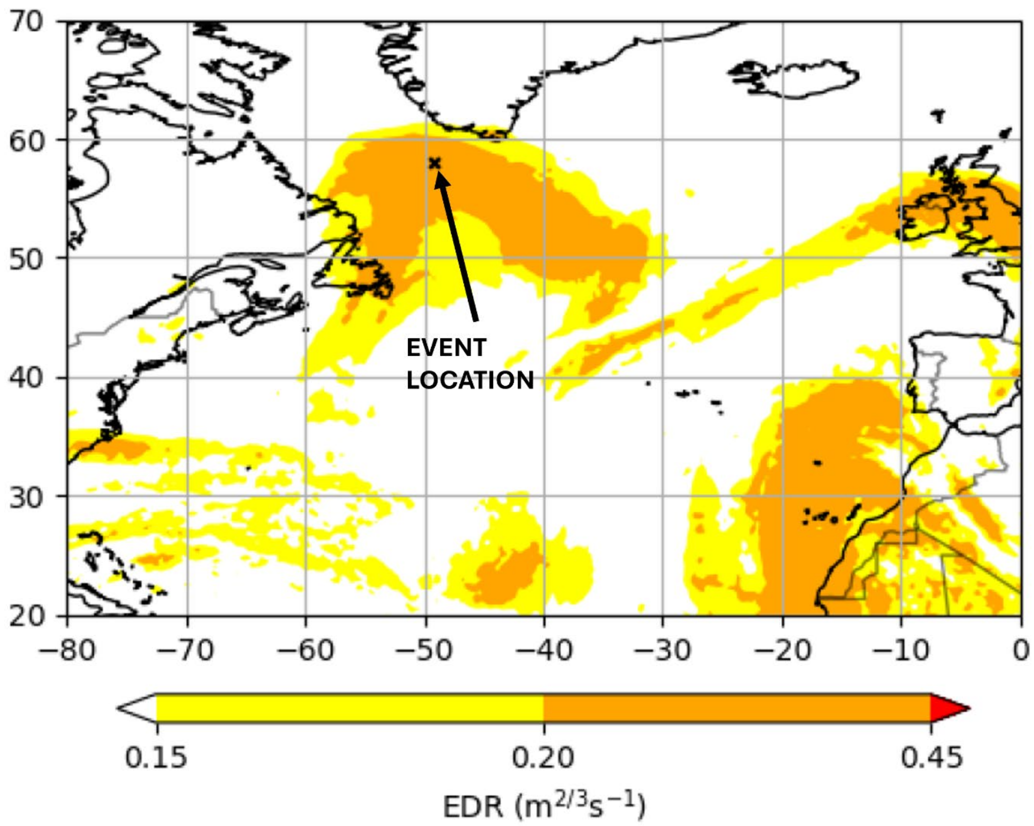

Figure 4

EDR Forecast Chart

The weather app on the crews' EFBs receives real-time EDR information via a global data exchange platform called *'Turbulence Aware'*[9]. It gives indications of turbulence relevant to the mass of the receiving aircraft. The information in the app indicated no significant turbulence in the vicinity of the aircraft.

Analysis

Weather app technology

Given that pre-flight weather charts give a widespread picture of potential turbulence conditions, this type of event highlights the benefits of live weather app technology in giving localised, real-time turbulence information to crew. The commander in this event followed 'anticipated' turbulence procedures and – although two people were unfortunately injured – had the seat belt signs remained off, more people may have been affected.

Situation in the cabin

With two injured persons, and a third, unrelated, medical event onboard, the IFL ensured sufficient cabin crew were recalled from rest periods to fulfil the Medical action plan. Two doctors onboard assisted the casualties, and some improvisation was used to supplement medical kit supplies and immobilise injuries.

Footnote

9 IATA - Turbulence Aware Platform.

Ground based medical advice

Given weather limitations at nearby airports, this event highlights the benefits of ground-based professional medical advice for informing flight crews' decision making – in this case, continuing to Heathrow, with emergency assistance from ATC.

Conclusion

A crew member and a passenger sustained serious leg injuries during a brief period of turbulence. The flight crew monitored the turbulence situation using a real-time weather application on their operational tablet devices and instructed the cabin crew to secure the cabin some time before the event. Had the seat belt signs been off, more people might have been affected.

The event highlights the benefits of live weather app technology and ground-based medical services in assisting with crew decision making.

Accident

Aircraft Type and Registration:	Ikarus C42 FB80, G-CGNI
No & Type of Engines:	1 Rotax 912 piston engine
Year of Manufacture:	2010 (Serial no: 1005-7108)
Date & Time (UTC):	9 May 2025 at 1240 hrs
Location:	Yatesbury Airfield, Wiltshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Wing and airframe damage
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	58 years
Commander's Flying Experience:	6,103 hours (of which 5,500 were on type) Last 90 days - 64 hours Last 28 days - 28 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries made by the AAIB

As the aircraft accelerated for takeoff, the pilot realised that the right wing was lifting about its two upper attachment points. He stopped on the runway and the aircraft sustained structural damage caused by the movement of the wing.

This would have been the first flight after the right wing was refitted following repair. Examination found that although the wing lower strut attachment pin was engaged through the aircraft attachment, the wing strut fitting had not been engaged correctly, and the pin did not pass through it. This meant that the inboard end of the lower strut was not attached to the aircraft fuselage. As the aircraft accelerated and the wing started to produce lift, it was able to rotate about the upper attachments.

The wing rigging procedure in the aircraft maintenance manual incudes a final check to '*lift the wing at the wing tip to ensure proper attachment…*'. The pilot said he was familiar with the installation and reported that the wing was fitted at the end of a long day. He believed it was correctly attached but did not recall attempting to lift the wingtip to ensure it was secure.

A British Microlight Aircraft Association (BMAA) Inspector had been asked to check a minor sail / fabric patch repair, which was duly done, but this did not include checking the rigging, as the wing was already installed on the airframe.

The AAIB reported on a similar occurrence in 2013[1] where the wing of another Ikarus C42 lifted during the takeoff roll and the pilot stopped before the aircraft became airborne. If either aircraft had continued and become airborne, it is likely that a serious accident would have occurred.

Safety Considerations

The UK type-approval holder considers the design and installation instructions to be adequate.

The LAA published an article entitled '*C42 Mis-rigging*' in the October 2025 edition of their Light Aviation magazine.

The BMAA plan to highlight the issue in a direct communication to C42 aircraft owners.

Footnote

1 AAIB correspondence report https://www.gov.uk/aaib-reports/ikarus-c42-fb-uk-g-ilrs-5-october-2013 [accessed December 2025].

Accident

Aircraft Type and Registration:	Jodel D120, G-AYGG
No & Type of Engines:	1 Continental Motors Corp C90-14F piston engine
Year of Manufacture:	1960 (Serial no: 184)
Date & Time (UTC):	7 September 2024 at 1215 hrs
Location:	Belhus Woods Country Park, Essex
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - 1 (Serious) Passengers - N/A
Nature of Damage:	Aircraft destroyed
Commander's Licence:	Private Pilot's Licence
Commander's Age:	80 years
Commander's Flying Experience:	3,702 hours (of which 2,547 were on type) Last 90 days - 34 hours Last 28 days - 7 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and AAIB examination of the engine

Synopsis

Shortly after takeoff the pilot declared an emergency due to an engine issue. Whilst possibly attempting to return to the airfield, the aircraft lost control before striking the ground in Belhus Woods Country Park. The pilot was seriously injured.

The cause of the engine issue was not determined; however, this event serves as a reminder that decision making when engine failures occur close to the ground is critical. Pre-departure briefing to plan actions in the event of a failure can help to make positive decisions in the event of an engine failure. Pilots are also reminded of the importance of maintaining speed and control throughout the flight.

History of the flight

The pilot had flown from his home airfield, Farthing Corner, Kent, to Damyns Hall Aerodrome, Essex, earlier that day. A flight of about 16 minutes. The accident occurred during the following flight. The purpose of the flight is not known.

Shortly after departing from Runway 21 the pilot transmitted a MAYDAY call on Damyns Hall Radio reporting an engine issue. The aircraft was then seen to turn towards the airfield before it departed controlled flight. The aircraft struck the ground in a wooded area of a field in Belhus Wood Country Park, approximately 1 km south-east of airfield. The pilot sustained serious injuries and was taken to hospital. Responders who attended the accident recall a strong smell of fuel on the accident site.

ADS-B data recorded from the flight showed an indicative flight path suggesting that the aircraft climbed to a maximum of 900 ft amsl and was approximately 1.5 km from the airfield flying in an easterly direction before it started to descend and turn to the north. During the final moments of the flight the aircraft entered a tightening left turn to the west before the data ended. This suggests that the aircraft may have entered a spin to the left before it struck the ground.

The aircraft was destroyed in the accident.

The pilot remained in hospital for some time after the accident and does not remember the flight, or the days preceding it.

Aircraft information

The Jodel D120 is a two-seat monoplane of wooden construction powered by a Continental C90-14F engine. G-AYGG had a valid Permit to Fly that was due to expire in March 2025. It was built in 1960 and had been owned by the pilot since 1996. There were no recording devices on the aircraft.

Aircraft examination

The engine was recovered to the AAIB facility in Farnborough, for detailed examination. The hub of the propeller was still attached to the engine. The wooden blades had fractured at approximately 1/3 radius with indications that the blades were stationary or rotating slowly at the time of the accident. The carburettor and air intake filter had been crushed in the accident and were only attached to the engine by the throttle and mixture control lines.

Examination of the engine found no evidence to indicate why the pilot reported an engine issue.

Aerodrome information

Damyns Hall is an unlicensed airfield with a main grass runway orientated 030°/210°, is 650 m long and is 56 ft amsl.

Analysis

Assessment of the engine and propeller by the AAIB identified that the engine had likely stopped at the time of the accident; however, no defect was identified which would have caused the engine to stop. The smell of fuel at the accident site would indicate that the aircraft was carrying fuel but it could not be determined if it was being supplied to the engine at the time of the accident.

Recorded data from the flight shows that after takeoff the aircraft started a climbing turn to the left. At a maximum height of 900 ft amsl the aircraft started to descend and continued the left turn, as the aircraft descended the left turn tightened until control was lost.

The initial descent observed is consistent with a pilot's response to a loss of power by entering a decent at the aircraft's optimum glide speed. The tightening left turn may indicate that the pilot was attempting to return to the airfield from which he departed; however, this cannot be confirmed.

As the engine issue became apparent the pilot was faced with a difficult decision whether to land ahead or to attempt a turn back. Being at a maximum 850 ft aal and on the equivalent of a crosswind leg of the circuit he may have been able to perform a landing on Runway 03 however if the engine had a partial power loss he may have attempted to perform a circuit and land normally.

The CAA have published several documents intended to provide information to assist pilots. Safety Sense Leaflet SS30 - *'Loss of control Stall & Spin Awareness'*[1] provides guidance on stall avoidance and recovery, Safety Sense Leaflet SS12 - *'Strip Flying'*[2] provides information regarding operating from small airstrips and covers considerations for loss of power after takeoff. This advises:

> *'You should* ***review the options in the event of an engine failure on takeoff.*** *The obstacle environment may require turning in a particular direction. Have a picture in your head of what the area in front of you will look like in the event of a low level engine failure.*
>
> *Do not consider making a 'turn-back' manoeuvre – it is always safer to aim for a point in front of you or to the side.'*

With the aircraft above 500 ft it would be considered beyond the normal engine failure after takeoff (EFATO) procedures, but the advice to review options in the event of an engine failure is still valid until at a height or position to allow turn back to the airfield are met. If there is any doubt in the ability to return to the airfield, it is safer to conduct a forced landing away from the airfield, however the proximity to the airfield may appear to provide a safe landing site despite the low altitude.

The emergencies section of CAA CAP 1535 The Skyway Code[3] also provides guidance for managing power loss after take-off. It states:

- *'Know your best glide speed and procedures for your aircraft.*
- *Particularly at low level, focus on maintaining speed and control. Provided you keep the aircraft at flying speed and under control, engine failures are unlikely to be fatal.*

Footnote

1 CAA Safety Sense Leaflet SS30 - SS30 - Loss of control Stall & Spin Awareness available at https://www.caa.co.uk/media/ukogcsea/caa8230_safetysense_30-lossofcontrol_v10.pdf [accessed 19 September 2025].

2 CAA Safety Sense Leaflet SS12 - Strip Flying available at https://www.caa.co.uk/media/lpwhsrfn/safetysense12-strip-flying.pdf [accessed 19 September 2025].

3 CAA Skyway Code (CAP1535) available at https://www.caa.co.uk/our-work/publications/documents/content/cap1535/ [accessed 19 September 2025].

- *If a failure happens shortly after take-off, landing ahead is safer than attempting to turn back. Assess the area immediately in front of you and pick the place that is likely to cause the least damage.*
- *Partial engine failures can confuse the decision making process. Assess whether the failure is likely to become worse – for example if rapidly losing oil pressure, the engine may not run for much longer. Take a positive decision to either put down in a field or continue to an aerodrome, depending on your judgement of the problem.'*

The AAIB have investigated many previous accidents which involved a partial or complete power loss leading to a loss of control of the aircraft. During the period 2011 - 2021 the AAIB completed 16 field investigations in which partial loss of power was involved. Arising from those 16 accidents, there were 15 fatalities and 9 serious or life-threatening injuries. In two of these accidents there were no injuries, and both were as a result of flying the aircraft under control to a successful forced landing or ditching.

On 16 June 2022 the AAIB published a report into an accident to G-BBSA, a Grumman AA5, which suffered a partial power loss shortly after takeoff followed by a loss of control[4]. This report made three recommendations to the CAA to include training about partial power loss for new pilots and pilots renewing or revalidating their licence. In October 2025, as part of the Licensing and Training Simplification Project[5] the CAA introduced guidance and approaches to managing partial power loss to the ab initio training syllabus and biannual refresher flight recurrence assessment.

Detail related specifically to Partial Power loss can be found at:

AMC1 FCL.210 PPL(A) Training course - Exercises 12/13 and 16. Ex 6 should also be used to demonstrate flight at different power settings.

AMC1 FCL.740.A(b)(1)(ii) Revalidation of class and type ratings - Partial power loss is now featured in the training flight for the revalidation of the class rating.

GM1 FCL 210 PPL(A) Training course

GM1 FCL.235 Skill Test

Additionally, the CAA has produced a webinar[6] specifically providing guidance for teaching partial power loss scenarios.

With the pilot not being able to recall the flight and with no recording devices on the aircraft able to capture what happened during the event and with no findings from the examination of the aircraft, it is not possible to determine with certainty what occurred in this accident.

Footnote

4 G-BBSA report available at https://www.gov.uk/aaib-reports/aaib-investigation-to-grumman-aa-5-g-bbsa [accessed 19 September 2025].
5 CAA Licensing & training simplification https://www.caa.co.uk/general-aviation/pilot-licences/licensing-training-simplification/ [accessed 18 November 2025].
6 CAA webinar providing guidance for teaching partial power loss scenarios https://www.youtube.com/watch?v=50tJa2SCaF4 [accessed 18 November 2025].

Accident

Aircraft Type and Registration:	Cameron Z-275, G-VBFT	
No & Type of Engines:	No engines	
Year of Manufacture:	2009 (Serial no: 11215)	
Date & Time (UTC):	10 April 2025 at 1755 hrs	
Location:	Earls Colne, Essex	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 1	Passengers - 10
Injuries:	Crew - None	Passengers - 1 (Serious 1 (Minor) 8 (None)
Nature of Damage:	Significant fire damage to balloon envelope and basket	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	56 years	
Commander's Flying Experience:	332 hours (of which 19 were on type) Last 90 days - 28 hours Last 28 days - 10 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The balloon struck power cables during landing and severed them. The pilot did not see the cables until the balloon landed, and they were not depicted on any of the maps he used. The cables caused an ignition source which initiated a fire beneath the basket and caused metal parts of its structure to become electrically live. All those on board evacuated the basket. Two passengers were injured with one sustaining an electric shock.

History of the flight

The balloon took off from Petersfield village, Gosfield at 1653 hrs with ten passengers for a pleasure flight. The balloon climbed to an operating altitude of between 1,000 and 2,000 ft. The wind was 280° at approximately 8 kt so the balloon flew to the east. The flight path, recorded by GPS, is shown at Figure 1.

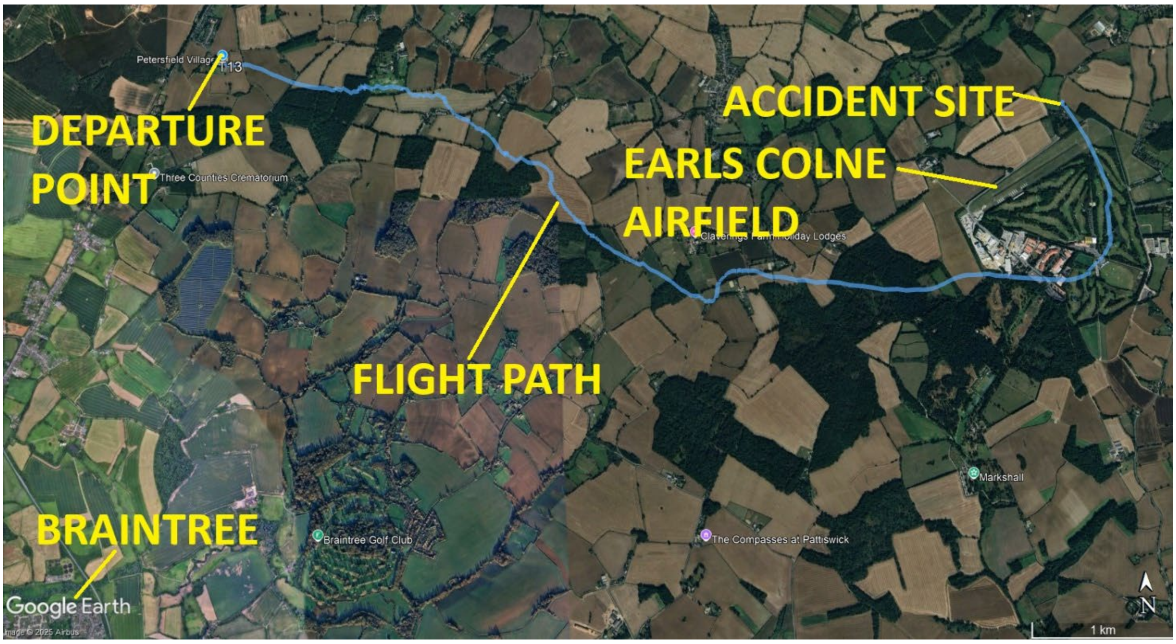

Figure 1

GPS flight path of G-VBFT

After flying for approximately 40 minutes the pilot commenced a descent and began to look for somewhere to land. The balloon was in the vicinity of Earls Colne airfield and although the airfield was closed, the pilot of G-VBFT was in radio contact with other aircraft in the vicinity. As the balloon descended the wind direction backed by approximately 90°, and the balloon flew North over Earls Colne. The pilot identified a suitable field for landing just to the north of Earls Colne and made an approach. The landing area is shown in Figure 2.

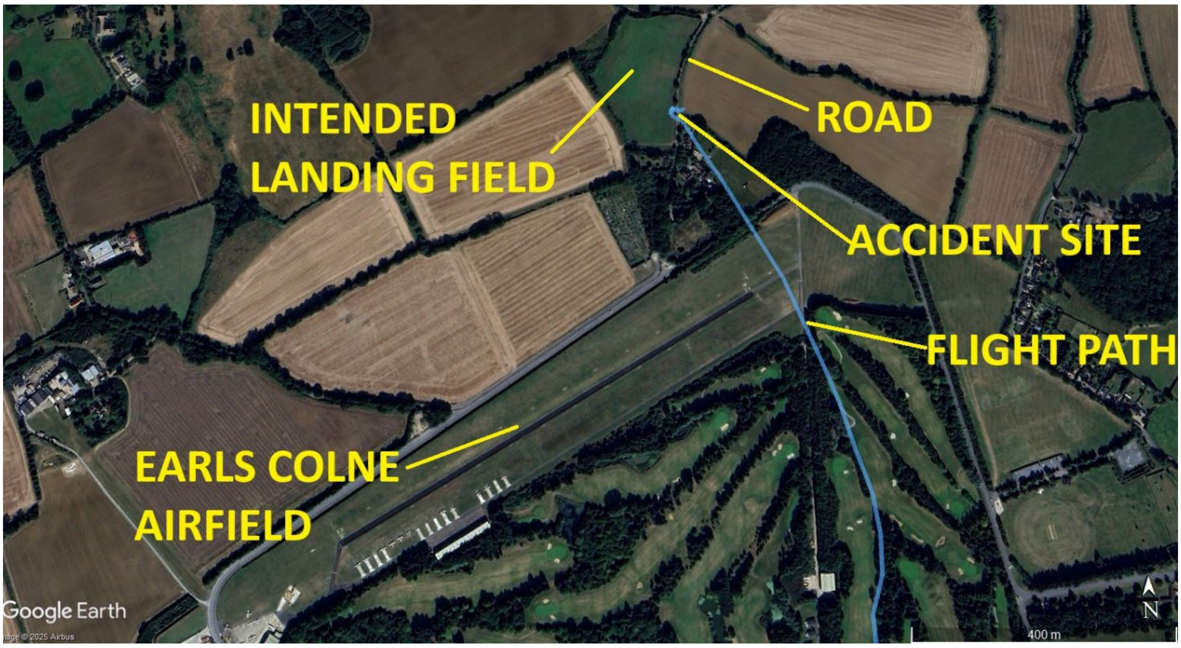

Figure 2

Landing area

The pilot observed a set of wires running along the road on the eastern edge of the intended landing field. He directed the passengers to take up their landing positions in the basket. The pilot described the approach as "normal". The balloon crossed the road and the wires, landing with the basket upright, just inside the chosen field, at 1757 hrs. The pilot intended to touch down as soon as possible after the field's perimeter, and the wires he had observed, to give maximum room for the envelope[1] to collapse downwind of the basket. Having the basket as close as possible to the perimeter would ease its subsequent recovery. The pilot's intent was to land keeping the basket and envelope upright for the passengers to disembark. After touchdown the pilot realised there was another set of wires approximately 30 ft into the field (Figure 3).

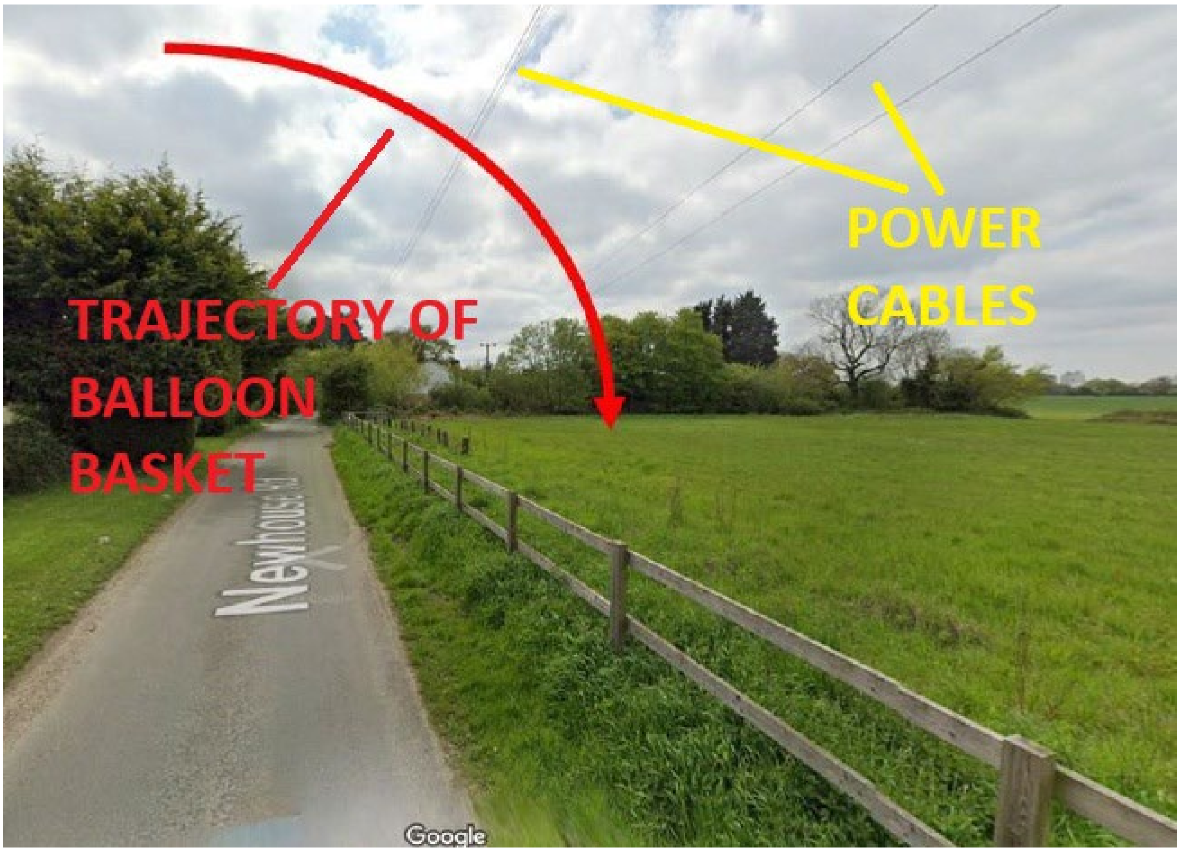

Figure 3

Landing site looking south along road

The balloon basket touched down and dragged a few feet. As the envelope began to deflate, the balloon hit the second set of wires, which were heard to break. The pilot turned off the fuel cylinders and the mouth of the balloon envelope descended over the burners (Figure 4). The pilot was uncertain where the wires had fallen and, being concerned about any threat of electrocution from the metal frame holding the burners, he elected not to extinguish the pilot flames.

Footnote

1 The balloon envelope contains the heated air and provides lift. It is typically made of nylon, which is lightweight and durable, and is coated with materials like Nomex for flame resistance.

Figure 4
General arrangement of basket

The falling wires ignited the grass near the balloon (Figure 5) at around 1757 hrs and, shortly after, smoke began emanating from under the basket (Figure 6). The pilot told the passengers to get out and move clear of the basket.

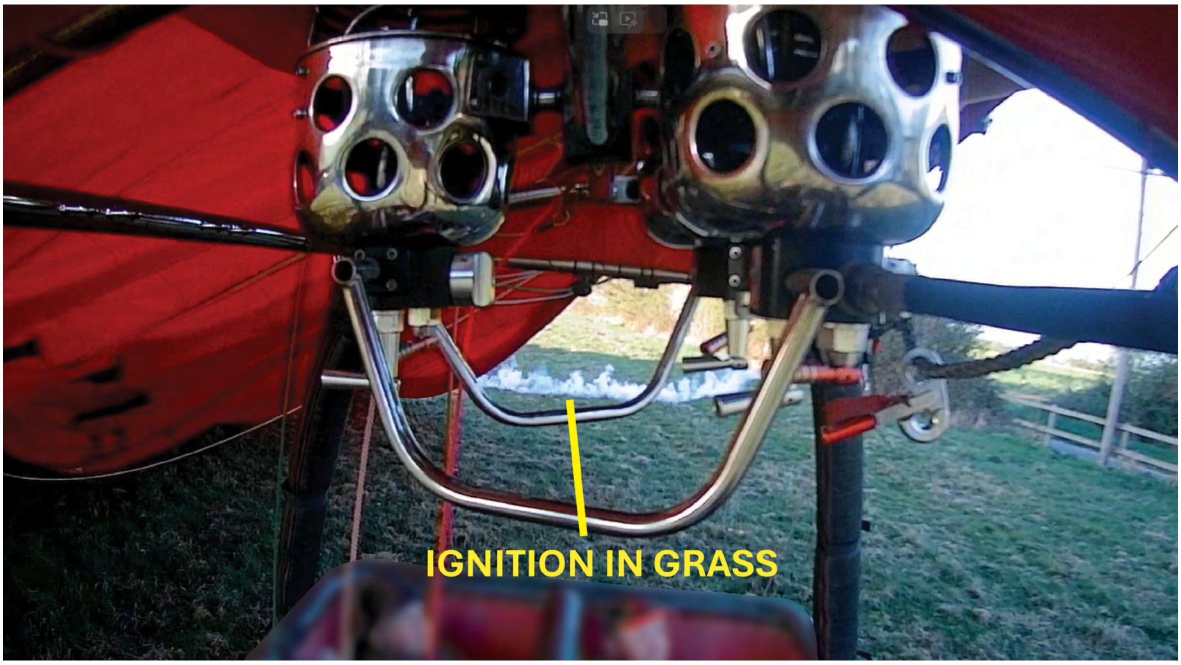

Figure 5
Ignition in grass

Figure 6
Evacuation

The pilot gathered the passengers together near the road and checked everyone was accounted for. He then moved everyone further away in case the fire led to a fuel tank rupture.

Both a passing motorist and the pilot called the emergency services. One passenger (Pax 1) received an electric shock because he was still touching the basket structure when he touched the ground, and another passenger (Pax 2) sustained an ankle injury, both while climbing out of the basket. The fire service extinguished the fire on the balloon and Pax 1 was taken to hospital by ambulance. The scene was made safe by the electricity network provider and the balloon was retrieved.

Pax 1 sustained minor burn injuries, a sprained ankle and suffered chest pains following the event. Pax 2 was diagnosed with a secondary headache from his other injuries.

Aircraft information

The balloon manufacturer's Flight manual contains the emergency procedure *'Contact with electric power lines'* which stated:

> *'Contact with electric power wires is extremely dangerous and can result in serious or fatal injuries. It should be avoided at all costs. If contact with power wires cannot be avoided, initiate a rapid descent so that contact with the wires will be made by the envelope instead of the basket assembly.*
>
> *Shut off all the fuel supplies at the cylinder valves and vent the fuel hoses before contact.*
>
> *If the balloon is caught in the power wires, do not touch any metallic parts.*
> *If the basket is not in contact with the ground remain in it, if possible, until the electrical power is shut off.*
>
> *If it is necessary to leave the basket, do not place the body in contact with the ground and any part of the balloon at the same time.*
>
> *Do not attempt to recover the balloon until the electricity authority has been contacted, and has indicated that it is safe to do so.'*

The manual's *'Fire on the ground'* procedure stated:

> *'Shut off the fuel supply at the cylinder valve and send all persons not directly fighting the fire to a safe distance.*
>
> *Put out fire with extinguisher.*
>
> ***WARNING: If the fire is not extinguished immediately, ensure that all remaining persons retreat to a safe distance, as an explosion will occur if the fire continues and causes the cylinders to rupture.***
>
> *If the balloon is inflated the pilot must pull the parachute operating / rip line to prevent the balloon becoming airborne while the passengers exit. The pilot should exit the balloon last with the parachute operating / rip line in hand to ensure that the balloon does not become airborne.'*

Survivability

The operator has safety briefing cards available for passengers. The safety briefing, which is delivered verbally, addresses the issues of evacuation in an emergency.

The injured passengers in this event reported that the safety brief was given and that it was clear and easy to understand. The passengers understood they should remain in the basket until told to leave or evacuate by the pilot.

Organisational information

The operator provides each pilot with a CAA 1:500,000 aeronautical chart. Such charts are not intended for low level navigation, and do not depict low level power lines. The operator's Operations manual states:

> *'The pilot in command must ensure that he carries current topographical maps and aeronautical charts covering the planned route.'*

The operator stated that pilots have access to Ordnance Survey 1:50,000 maps which depict main power lines but not the low-level pylons in the vicinity of Earls Colne. The operator does not provide such maps or have any requirements for the standard of mapping carried by the pilots. The mapping app used by the pilot had an overlay of Sensitive Areas (SA). SAs are published by the British Balloon and Airship Club (BBAC) and cover areas which balloonists should avoid, such as anti-balloon landowners, livestock sensitive areas, and high charges for landing. The SAs have a requested minimum height for overflight to minimise nuisance. The database of SAs from the BBAC can be overlaid on maps via a variety of mapping applications.

Analysis

The pilot made an approach to what he believed to be an appropriate landing area, recognising that a set of power cables ran along the road bordering his chosen field. He successfully landed just beyond those wires. Only when the balloon basket had touched down, did the pilot recognise there was a second set of wires in the field. As the balloon basket dragged along the ground, the envelope broke the wires. The wires contacted parts of the basket structure and fell to the ground.

Consistent with the Flight manual, the pilot informed his passengers they had struck wires and directed them to remain in their landing positions. A fire then broke out, so the pilot ordered the passengers to evacuate the basket. There was insufficient time for the pilot to explain that parts of the basket structure might be electrically live, or that people should not touch the ground and the basket simultaneously. Pax 1, who was touching the basket as he reached the ground, received an electric shock and other injuries. Pax 2 also sustained injuries from the evacuation.

The operator supplied the pilot with a 1:500,000 aeronautical chart. On this chart the flight of the balloon was depicted by a 4 cm line with limited ground detail. The pilot supplied his own 1:50,000 Ordnance Survey maps which offered much greater detail, but not the power lines which were struck.

Conclusion

Just after touchdown the balloon struck a set of low level power cables which the pilot did not see during the approach, and which were not depicted on the maps he was using.

He evacuated the passengers according to the Flight manual advice but did not have time to warn them of the risk of electric shock.

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 UAS investigations reviewed: October - November 2025

2 Aug 2025 **DJI M30T** Sheerness, Kent

To assist with an emergency response, a UA was deployed. While taking off, the UA struck a telegraph cable and subsequently collided with a member of the public, causing a hand injury that required hospital treatment. The remote pilot noted that the cable hazard had not been identified during the rapid deployment of the UA.

20 Aug 2025 **Ultra Mk2** Llanbedr Airfield, Gwynedd

After observing the UA fly circuits in auto mode, the pilot took manual control to fly familiarisation circuits. On the second approach, during a turn to final for Runway 05, the pilot made a corrective input, after which the left wing dropped sharply and the UA entered a spiral turn. The UA was unresponsive to further control inputs; it struck the ground in an unoccupied area to the south-west of Runway 05 and caught fire.

30 Sep 2025 **FX2.6** Hollym Airfield, Yorkshire

The UA had flown a Beyond Visual Range flight from a private airfield to an oil and gas platform, and back. The UA was on final approach to the airfield, with its engine at low idle, when the engine failed. It landed hard, causing the landing gear to collapse, and the propeller to strike the ground.

14 Oct 2025 **DJI Matrice 350 RTK** Chertsey, Surrey

The UA was inadvertently flown into an obstacle at a theme park. There were no people in the vicinity, and the UA fell to the ground and was destroyed.

16 Oct 2025 **DJI M30T** Kettering, Northamptonshire

The UA was being flown back to the Takeoff/Landing Area at low level when it initiated the Return to Home (RTH) procedure due to low battery. The UA climbed and, before the RTH was cancelled, it struck overhead power lines, fell to the ground, and suffered substantial damage.

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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