Accident

Aircraft Type and Registration:	Hoffmann H36 Dimona, G-CIMC	
No & Type of Engines:	1 Limbach L 2000-EB1C piston engine	
Year of Manufacture:	1988 (Serial no: 36269)	
Date & Time (UTC):	8 April 2025 at 1025 hrs	
Location:	Darley Moor Airfield, Derbyshire	
Type of Flight:	Introductory flight	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - 1 (Fatal)	Passengers - 1 (Fatal)
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	Airline Transport Pilot's Licence (Aeroplanes)	
Commander's Age:	66 years	
Commander's Flying Experience:	17,185 hours (of which 9 were on type) Last 90 days - 74 hours Last 28 days - 16 hours	
Information Source:	AAIB Field Investigation	

Synopsis

The accident occurred on an introductory flight experience bought for the passenger by a family member. At very low level in the moments after takeoff, the aircraft was seen to start "wallowing" before it rolled rapidly right and fell to the ground in a steep nose-down attitude from approximately 100-150 ft agl. The impact forces were unsurvivable for both pilot and passenger.

Recorded data showed that G-CIMC's lift off from the runway was as expected, but the aircraft then began yawing to the right and was subsequently unable to maintain a safe climbing speed or trajectory. The "wallowing" observed by several eyewitnesses was suggestive of an aircraft at or close to the aerodynamic stall. The investigation was unable to determine why the aircraft did not climb normally or what factors contributed to the pilot not being able to carry out a successful forced landing when the achieved climb performance was not as expected. The investigation did not find evidence of any technical issue that might have limited engine performance. An anthropometric study found the potential for fouling of the controls meant that an inadvertent throttle reduction was a possibility and that inadvertent movement of the trim was possible but not likely.

The investigation did not find an auditable record of weight and balance (WB) calculations made by the pilot on the day and, although the pilot had been observed preparing the aircraft for flight, the Daily Inspection (DI) book had not been signed. The aircraft had a relatively limited maximum payload of 170.6 kg, although an error in the aircraft's most

recent weighing report stated the payload limit was 184 kg. The investigation calculated that G-CIMC's payload on the accident flight was approximately 206 kg. While the aircraft took off above its maximum approved mass, the investigation considered that to be a contributory, rather than causal, factor.

The operating club has taken safety action to amend its flight booking processes to require the completion of an online data capture and flight waiver form by customers before any flight experience is scheduled. Boarding weights declared on those forms would then be checked at the airfield before a passenger's first flight.

The British Gliding Association (BGA) wrote to its member clubs reiterating guidance on introductory flights and highlighting the importance of flight preparation. It also plans to issue a notice to all its inspectors highlighting the need to identify all relevant information, including a non-lifting parts limitation, when producing aircraft weighing reports.

History of the flight

The accident occurred shortly after takeoff on a passenger introductory flight from Darley Moor Airfield, Derbyshire (Darley Moor) in a Hoffmann H36 Dimona (Dimona) touring motor glider (TMG).

The pilot arrived at the airfield at approximately 0800 hrs on 8 April 2025, after which, he began preparing G-CIMC for flight. At some point after 0800 hrs, a witness reported seeing the pilot carrying two 20 litre jerrycans to the aircraft before later returning them to their storage location. The jerrycans had been filled to full with Super Unleaded 98 RON[1] Mogas at a local petrol station on the morning of 7 April 2025, and some of that Mogas was used to refuel G-CIMC for its two flights that day. The witness reported that, from the ease with which the pilot was carrying the jerrycans, they appeared to be empty when he returned them to the storage point. Neither the quantity of fuel uplifted nor the total fuel onboard for the accident flight was recorded.

The passenger arrived at the airfield about an hour after the pilot and was greeted outside the clubhouse by one of the club's officers who was busy briefing their own student pilot at the time. The pilot then met and escorted the passenger directly to the aircraft. The passenger did not enter the clubhouse. The club officer later helped the passenger strap into G-CIMC's left seat. The officer reported the pilot and passenger were in good spirits, there was no obvious time pressure, and the pilot did not appear to be rushing.

After engine start, the aircraft taxied to Runway 01 (Hard)[2] for takeoff. A witness familiar with flying G-CIMC, reported the takeoff appeared to start as expected and that the aircraft's ground roll was of a "normal" length. Shortly after lifting off, the aircraft began to yaw right and track east of the runway extended centreline. The composite image at Figure 1 shows G-CIMC's heading change after lift off and is compiled from the final 13 seconds of a video recording of the takeoff.

Footnote

[1] Research Octane Number.
[2] See *Airfield details* section.

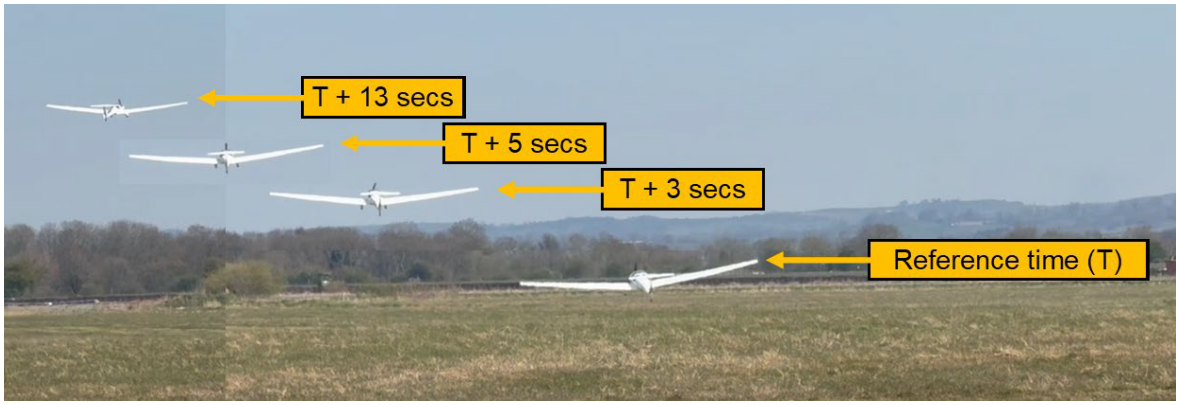

Figure 1

Composite image showing initial yaw and heading change after lift off
(Reference time (T) is close to, but not precisely coincident with, lift off)

Witnesses reported that shortly after the initial climb away from the runway the aircraft began "wallowing", with the nose pitching up and then down as if it was repeatedly approaching the aerodynamic stall. After two or three such pitch oscillations, the aircraft rolled rapidly right and fell "vertically" to the ground in a nose-down attitude, from a visually estimated maximum height of 100-150 ft agl. Eyewitnesses reported the engine sounded "normal" during the early stages of the takeoff run. They were not able to say whether the engine note later changed because by the time the aircraft was seen to be in obvious difficulty it was out of earshot.

Both occupants were fatally injured at impact. There was no post-crash fire.

Accident site

The aircraft struck the ground in a steep nose-down pitch attitude, with the aircraft coming to rest on top of the main ground impact marks. All parts of the aircraft were present at the accident site. The tailplane detached in the impact. The fuselage was broken behind the cockpit, but this section remained attached by the rudder cables. Both occupants remained in their seats with the seat harnesses fastened. No significant fuel leak had occurred and 25 litres of fuel, with the appearance and odour of Mogas, was recovered from the aircraft fuel tank.

Onsite examination of the engine was restricted to removal of both carburettor float bowls. Both float bowls contained clean fuel, and no water contamination or excessive debris was present in the bottom of the bowls.

Recorded information

The initial takeoff was videoed from the airfield, the recording stopped shortly after lift off. Visual propeller rotation analysis and doppler compensated audio analysis of the recording, indicated the engine rpm was approximately 2,910 rpm, in line with normal expectations.

The pilot used an aviation app on a tablet during the accident flight which recorded the flight path. The flight path and associated data is shown in Figure 2.

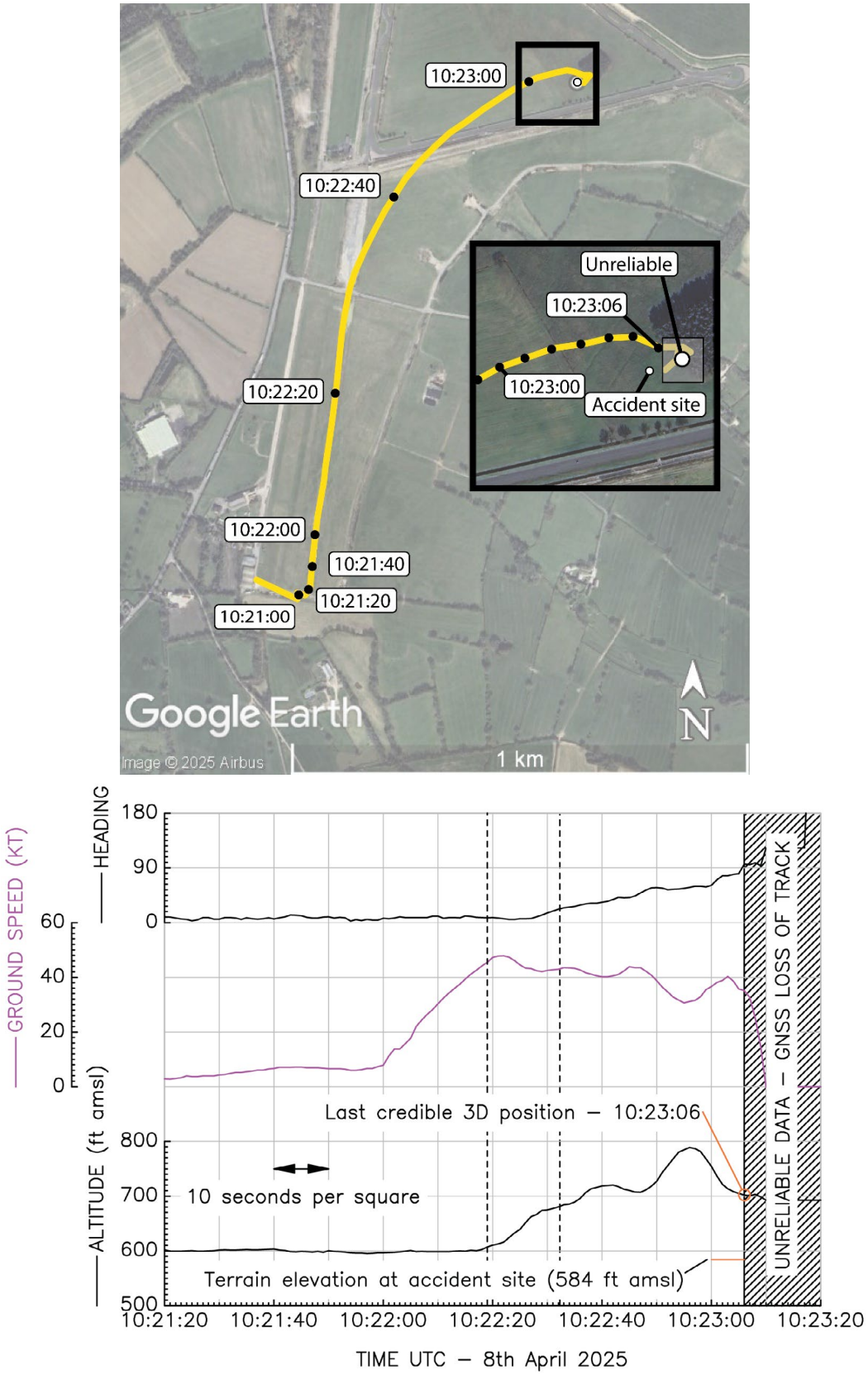

Figure 2

Flight path and data. The left dashed line in the data plot is the rotation point captured by the video and the right dashed line marks the end of the video

The aircraft position was sensed using GNSS technology, which is not designed for accurately tracking dynamic flight. The data associated with the final seconds of the accident flight were found to be unreliable. This is indicative of the GNSS antenna no longer being able to detect satellite signals, either because it moved to an unfavourable place in the cockpit (if for example using the tablet's GNSS sensing capability) or the attitude of the aircraft itself changed significantly, pointing the antenna away from the sky.

Without accurate local wind data, it was not possible to derive a meaningful airspeed plot from the recorded groundspeed. While the investigation did not find a recording of the local surface wind velocity at the time of the accident, it was likely from an easterly direction at less than 10 kt[3].

Aircraft information

The Dimona is a two-seat TMG powered by a Limbach L2000 EB1C four-cylinder piston engine. The engine is equipped with two Solex carburettors, one supplying the right cylinders with a fuel-air mixture and the second supplying the left cylinders. The seats are arranged side-by-side, with dual flying controls. The primary flight instruments are positioned on the left side of the instrument panel and the Dimona Aircraft Flight Manual (AFM)[4] includes a limitation that '*solo flights may be conducted from the left seat only*.'

The engine directly drives a propeller that may be set in one of three pitch positions during flight; fine pitch for takeoff and landing, coarse pitch for cruising, and feather during soaring flight with the engine switched off. The AFM states that a minimum engine rpm of 2,700 is required for takeoff, achieving this requires the propeller to be set to fine pitch. In some sections of the AFM, the terms START and CRUISE are used respectively for the fine/takeoff and coarse pitch settings.

The aircraft is constructed primarily from glass fibre composite materials and has a fixed main landing gear and tailwheel. Its fuel tank has a capacity of 83 litres and is approved to use either Avgas 100LL fuel or Mogas fuel with a minimum 98 RON octane rating.

The aircraft was maintained under the BGA's Combined Airworthiness Organisation (CAO). An annual maintenance inspection was completed on 7 March 2025, with the aircraft records stating that the aircraft had flown 1,142 hours and the engine had 165 hours in service since overhaul, at that date. The aircraft's Airworthiness Review Certificate was also renewed on 7 March 2025. The aircraft had flown 5.2 hours since the annual maintenance inspection.

The aircraft was last weighed on 22 September 2024 and this aircraft weighing report was present in the aircraft's technical records.

Footnote

[3] See *Meteorology* section.
[4] H36-AFM-GB-Int_through_SN36220 and H36-FHB-Ausgabe-1987-01-26 (German language version).

Aircraft examination

Examination of the aircraft's engine did not reveal any pre-accident mechanical or electrical defect that could cause the engine to run roughly or lose power. The engine's ignition system was examined in detail and found to function correctly.

The aircraft's flying controls, engine controls and propeller controls were examined and no pre-accident defect or discontinuity was identified. It was not possible to determine the pre-impact positions of the engine or propeller controls due to accident-related disruption.

The airframe fuel filter was free from debris and the electric fuel boost pump operated when connected to 12 Volt power. No pre-accident restriction in the fuel lines between the fuel tank and the fuel selector valve was identified. The fuel lines forward of the fuel selector valve to the engine were crushed due to the accident impact, preventing assessment of their pre-accident condition.

The aircraft's DI book did not contain an entry for the date of the accident. It did contain previous entries with the last entry dated 7 April 2025, stating that no minor defects were present.

Weight and balance (WB)

Section 2 *'Limitations'* of the AFM specifies a maximum gross weight limit for the aircraft type of 770 kg. In addition to that limit, section 1.8 of the AFM specifies a maximum weight limit for non-lifting parts of 560 kg. The maximum permissible payload is the lesser of:

(1) The maximum gross weight limit minus aircraft empty weight; or

(2) The maximum weight limit for non-lifting parts minus the weight of the aircraft's non-lifting parts.

The most recent weighing report obtained by the AAIB was dated 22 September 2024 and recorded G-CIMC's empty weight as 585.6 kg and that of its non-lifting parts as 389.4 kg. Based on those figures, the limiting factor for payload was the weight of non-lifting parts:

- 560 kg (limit) – 389.4 kg (actual weight of non-lifting parts) = 170.6 kg

The weighing report incorrectly stated the maximum payload available was 184 kg which equated to condition (1), maximum gross weight limit minus the empty weight[5] (Figure 3). This incorrect available payload figure had been transposed by a handwritten amendment onto blank '*weight & balance calculation sheets*' found with the aircraft (Figure 4). The WB sheets were inside a '*General Info*' folder produced by the previous owners of the aircraft who had also commissioned the weighing report. These WB sheets did not include reference to the weight of the aircraft's non-lifting parts or the related AFM limit. Applying the non-lifting parts limit, the maximum allowable takeoff mass for G-CIMC was 756.2 kg[6].

Footnote

[5] Approved maximum takeoff mass 770 kg – Aircraft empty weight 585.6 kg = 184.4 kg.
[6] Empty aircraft weight 585.6 kg + limiting payload 170.6 kg = 756.2 kg.

Empty Weight & C of G Position:

Weight on Front Right Hand Wheel	260.5 kg	Displacement of Front Support (Xf:	235 mm Fwd
Weight on Front Left Hand Wheel	253.1 kg	Displacement of Front Support (Xf:	235 mm Fwd
Total Weight on Main Wheels (Wf):	513.6 kg		
Weight on Rear Support (Wr):	72.0 kg	Displacement of Rear Support (Xrs	4700 mm Aft
		Weight of Port Wing (Wp):	97.3 kg
		Weight of Starboard Wing (Ws):	98.9 kg
		Weight of Non-Lifting Parts (Wnl):	389.4 kg
Empty aircraft C of G position (Xe):	**371.8 mm AOD**	**Empty aircraft Weight (We):**	**585.6 kg**
Empty aircraft Total Moment:	**217704 kg mm**	**Maximum Payload Available:**	**184 kg**

Figure 3

Extract from G-CIMC weighing report dated 22 September 2024

DIMONA H36 Mk 2; G-CIMC

WEIGHT & BALANCE CALCULATION SHEET

Current empty weight is:	(May 2016) SEPT 2024 586 kgs
Maximum all-up weight is:	770 kgs
Available payload is:	184 kgs
Avgas 100LL weight per litre: (specific gravity = 0.72)	
Mogas weight per litre: (specific gravity = 0.73)	
1 Litre weighs:	0.73 kgs
10 Litre weighs:	7.3 kgs
20 Litre weighs:	14.6 kgs
30 Litre weighs:	21.9 kgs
40 Litre weighs:	29.2 kgs

Calculation Examples:

Pilot 1:	80.0 kgs	Pilot 1:	75.0 kgs
Pilot 2:	70.0 kgs	Pilot 2:	85.0 kgs
Fuel to gauge white line:	14.6 kgs	+ 10 litres =	21.9 kgs
Total All-Up Weights:	164.6 kgs		181.9 kgs
Available loading in the above examples are:			
	770.0 kgs		770.0 kgs
584 + 164.6 =	748.6 kgs	584 + 181.9 =	765.9 kgs
Gives spare capacity of:	21.4 kgs		4.1 kgs

OR:

Available payload:	184.0 kgs
Less total calculated all-up weight:	164.6 kgs
This gives spare capacity of (about 30 litres extra fuel):	21.4 kgs

Actual Calculation for Flight – COMPLETE THE WEIGHT DETAILS	
Pilot 1 weight	kgs
Pilot 2 weight	kgs
Luggage (Max. 12kg)	kgs
Fuel weight (insert figure from above fuel weights)	kgs
Current empty weight of a/c (as of ~~May 2016~~) SEPT 2024	586.0 kgs
TOTAL All-Up Weight (must not exceed 770 kgs):	kgs

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Figure 4

Scanned blank WB sheet recovered from the '*General Info*' folder found in G-CIMC

It was not a regulatory or club requirement for pilots to complete WB forms for each flight, and the investigation did not find completed WB forms for any of G-CIMC's flights flown from Darley Moor.

The club reported it possessed a readily available set of scales which could be used to check the boarding weights of pilots and passengers. Rather than following a formalised routine or procedure for weighing introductory flight passengers, the scales were used on an ad hoc basis when somebody's weight was judged by visual assessment to be a potential issue.

Prior to the accident flight, the passenger was escorted directly to the aircraft after arriving at the airfield, this meant his boarding weight was not measured at the club before the flight.

Postmortem examinations found the pilot's boarding weight to be 75 kg, and that of the passenger to be 113 kg. Each seat in the aircraft has a maximum mass limit of 110 kg. While the investigation was unable to determine the exact fuel load, 25 litres (18 kg) of Mogas were recovered from the aircraft. Based on the payload weights above, G-CIMC's gross weight at takeoff was at least 791.6 kg[7], approximately 35 kg above the maximum allowable takeoff weight for non-lifting parts. The investigation calculated that the aircraft's longitudinal centre of gravity (CG) position would have been between the fore and aft datum limits, but the aircraft's takeoff weight being above the maximum gross weight limit placed the aircraft outside the approved CG envelope (Figure 5).

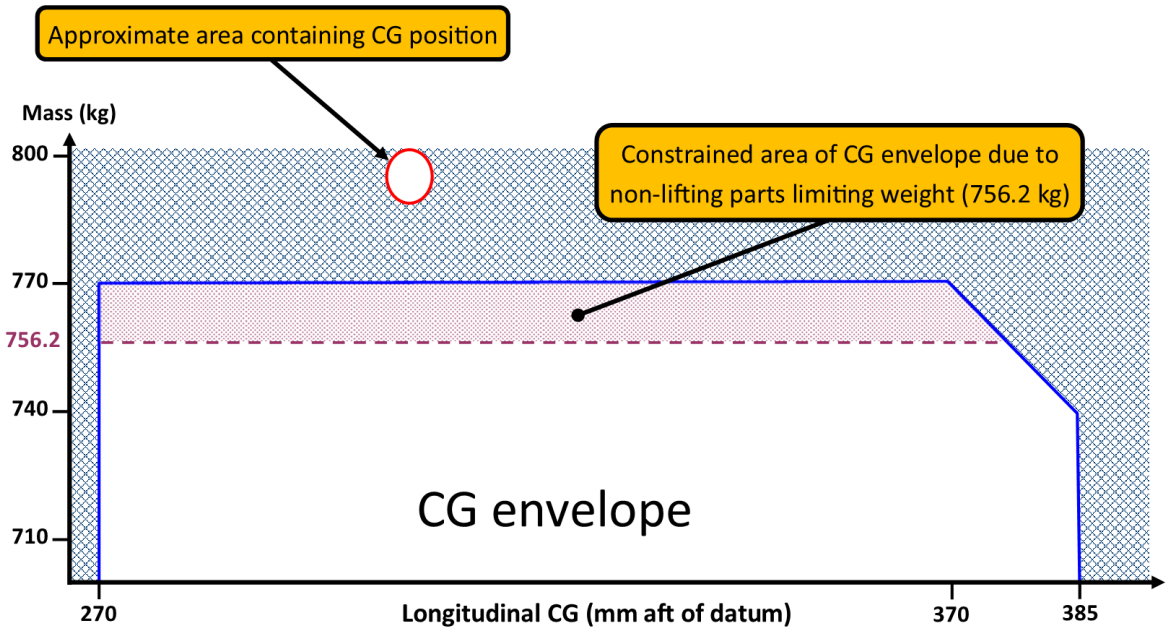

Figure 5

Dimona CG envelope showing the approximate longitudinal CG position for G-CIMC on the accident flight

Footnote

[7] Aircraft empty weight 585.6 kg + pilot 75 kg + passenger 113 kg + recovered fuel 18 kg = 791.6 kg.

Aircraft performance

The Dimona type was approved in accordance with the German airworthiness certification requirements for gliders and motor gliders (LFMS[8]). LFMS certification standards require motor gliders to be capable of climbing to 300 m agl within 4 minutes of takeoff, but detailed performance data does not need to be published.

The Dimona AFM quotes expected climb rates at 15°C and sea level of:

- 2.7 m/s[9] while climbing at 95 km/h (60 mph/51.3 kt) with the propeller in the START position, and
- 2.0 m/s while climbing at 120 km/h (75 mph/64.8 kt) with the propeller in the CRUISE position.

The AFM-prescribed takeoff and climb speeds for the Dimona are 80 km/h (50mph/43.2 kt) and 85 km/h (53 mph/45.9 kt) respectively. The investigation was unable to obtain data relating to how the amount of aerodynamic drag acting on a Dimona might vary with airspeed reductions below the AFM climb speed.

The Dimona AFM quotes a power-off stall speed, with air brakes retracted, of 70 km/h (44 mph/38 kt). An indicative airspeed for a power-on stall is not given but the characteristics are described as follows:

> *'On coming [sic] stall warning can be recognised by buffeting on the aircraft and a loss of positive control in the stick and pedals. If permitted to continue the aircraft will stall and roll over on the stalled wing. A spin may result. When buffeting is encountered relax back pressure on the stick, and if available, add power. Recovery from a clean stall will result in an altitude loss of about 40 meters (130 feet).'*

Meteorology

The weather conditions at the time of the accident were generally fine and stable, with light and variable winds, and no low cloud. Local weather stations reported temperatures of around 8°C at 0800 hrs, rising to 13°C by 1200 hrs.

Figure 6 reproduces the UK low-level spot wind forecast (Form 214) for 1200 hrs on 8 April 2025 which was published by the Met Office and valid for the period 0900-1500 hrs. Darley Moor Airfield's location is approximately 53°N/001°45'W. Interpolation using the spot wind tables around that latitude and longitude indicated that below 5,000 ft the mean wind speed was forecast to be 5 kt. The wind direction would have been variable, most likely trending from an easterly, rather than westerly, direction. At 1020 hrs East Midlands Airport, 17 nm south-east of Darley Moor, reported their surface wind as 080°(variable between 030° and 170°)/5 kt. An automatic weather recording station 18 miles east of Darley Moor recorded wind velocities of 110°/5 kt at 1000 hrs and 080°/6 kt 1100 hrs.

Footnote

[8] Lufttüchtigkeitsforderungen für Segelflugzeuge und Motorsegler (LFMS).
[9] Shown as 2.8 m/s in H36-AFM-GB-Int through SN36220 (English version of the AFM).

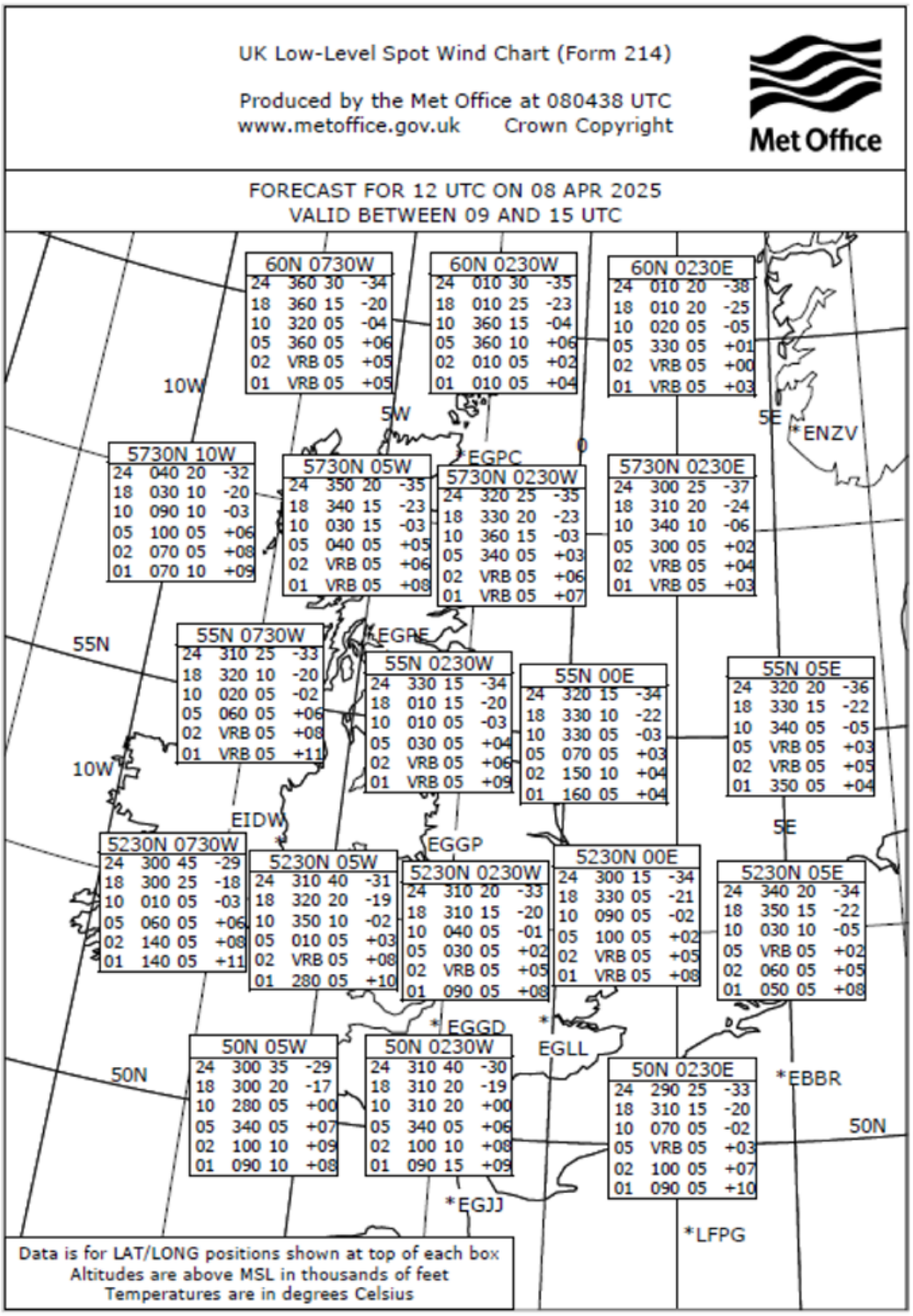

Figure 6

Met Office Form 214 valid between 0900 and 1500 on 8 April 2025

Local wind effects for individual airfields are not reflected in the UK-wide forecast on Form 214 but the operator reported that '*easterly winds are accentuated at Darley Moor with altitude due to the venturi influence of its geographical position with respect to the Peak District hills*.' The investigation did not find accurate surface or low-level wind data measured

in the immediate vicinity of the airfield but was provided with video evidence of the local environmental conditions, filmed approximately 10 minutes after the accident. Figure 7 is a screenshot from that video, captured when the camera was facing in a south-south-westerly direction towards the airfield windsock. Referencing the fence in the foreground which is aligned approximately east-west, this image indicates the surface wind was easterly at around 5 kt when the video was taken.

Figure 7

Screenshot showing airfield windsock at approximately 1035 hrs on 8 April 2025

Airfield information

Darley Moor is an unlicensed airfield approximately 2 nm south of Ashbourne in Derbyshire. The active airfield area occupies the southern section of a disused wartime aerodrome. The northern section of the disused aerodrome is used as a vehicle racing circuit (Figure 8). Runway 01 (Hard) is formed from the southern end one of the wartime aerodrome's original concrete runways. In recent years the deteriorating concrete was overlaid with matting re-purposed from artificial sports pitches to make it smoother and more weatherproof.

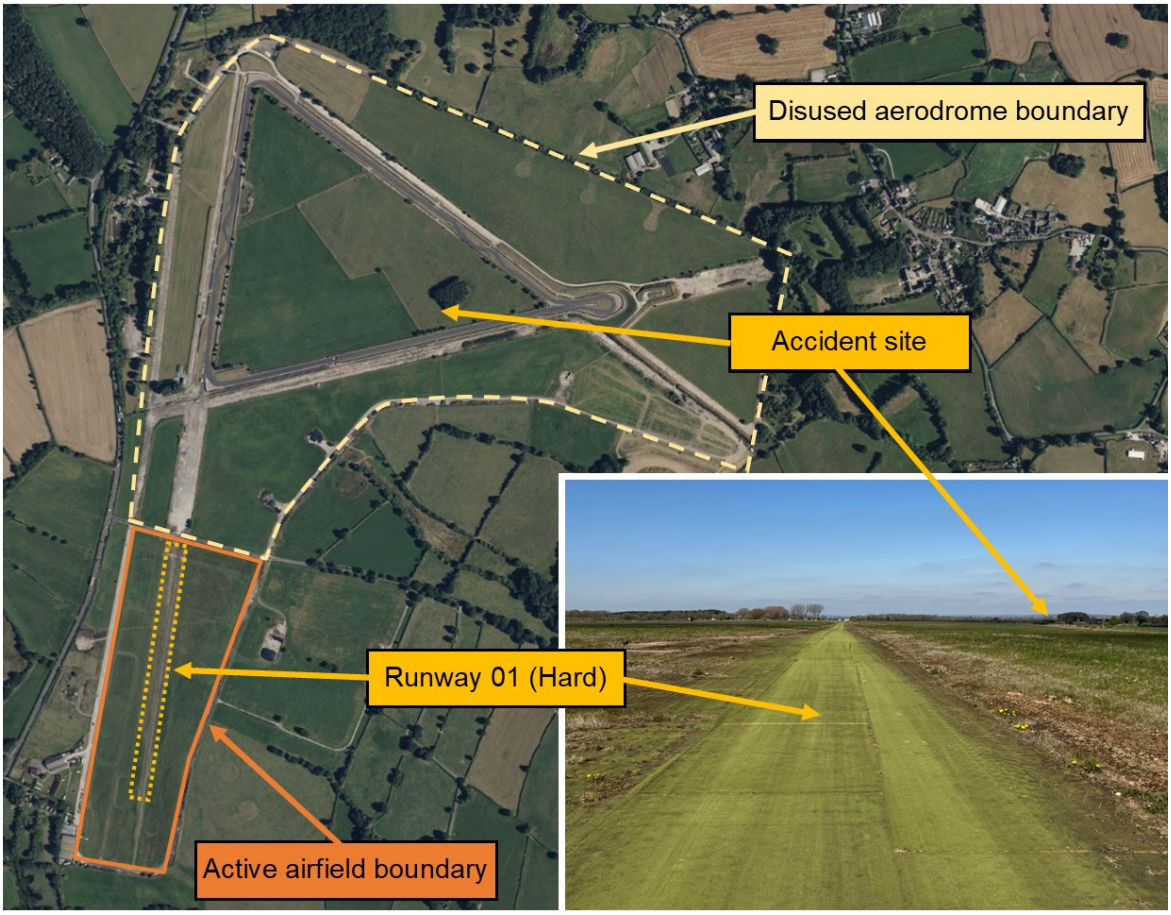

Figure 8

Overview of Darley Moor Airfield with inset view from threshold of Runway 01 (Hard)
(Satellite imagery ©Vexcel Imaging)

The active track of the racing circuit is bounded on both sides by barriers made from used vehicle tyres. These tyres form contiguous semi-solid structures which a pilot would ideally need to avoid during any forced landing attempt (Figure 9). Nonetheless, taking off in the Runway 01 direction there are several open grass areas within the bounds of the disused aerodrome suitable for emergency landings (Figure 10).

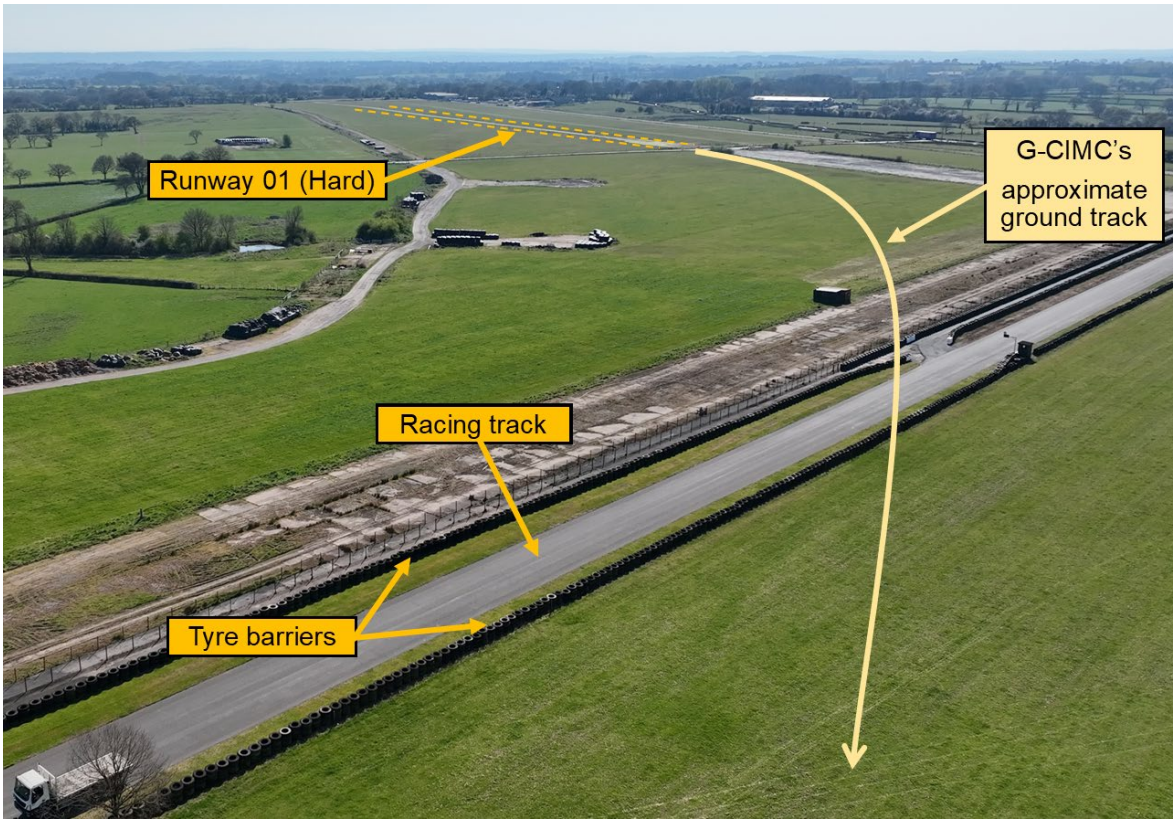

Figure 9

View towards airfield from above the accident site

Figure 10

View looking north-east past the accident site

Personnel

Pilot

The pilot was a former commercial airline pilot with over 17,000 flying hours experience. He was certified as a Flying Instructor (Aeroplanes) and had regularly instructed on light aircraft at a club near to Darley Moor. In August 2024, the pilot renewed his TMG class rating after it had been lapsed for several years. The investigation did not establish how many total TMG hours he had flown prior to that time. From August 2024 onwards he flew 12 hours 35 minutes in TMGs, 9 hours of those in G-CIMC. The operator stated the "pilot passed an assessment of his ability to conduct Introductory Flights at the Club" in January 2025. He did not receive any remuneration for flights conducted in G-CIMC.

The pilot's stature was approximately 175 cm (5 ft 9 in).

Passenger

The investigation was unable to find evidence the passenger had been asked to complete a health declaration before the flight at Darley Moor. The family member who purchased the flight for the passenger stated they were not aware of any medical or weight limitations.

The passenger's stature was approximately 187 cm (6 ft 1.4 in).

Postmortem findings

Neither of the occupants' postmortem examinations found evidence of medical factors that could potentially have been causal or contributory to the accident.

Organisational information

UK regulatory framework and guidance for introductory flights and trial lessons

The Air Operations Regulations (UK Reg No.965/2012)[10] for non-commercial operations (NCO)[11] includes a derogation for introductory flights to be flown in accordance with the operating rules for NCO flights subject to specific conditions. For ease of reference, those conditions are repeated in Civil Aviation Publication (CAP) 1653[12] '*Introductory Flights – Guidance to Operators,*' published by the CAA to provide guidance for organisations wishing to conduct introductory flights in the UK.

CAP 1653 defines the term introductory flight as:

> *'…any flight against remuneration or other valuable consideration consisting of an air tour of short duration, offered by an approved training organisation[13] or an organisation created with the aim of promoting aerial sport or leisure aviation, for the purpose of attracting new trainees or new members.'*

Footnote

10 Available at Air Operations [accessed 20 October 2025].
11 UK Reg No.965/2012 NCO.GEN.105 Pilot-in-command responsibilities and authority.
12 Available at CAP1653: Introductory Flights – Guidance to Operators | UK Civil Aviation Authority [accessed 18 September 2025].
13 Including Declared Training Organisations (DTO).

It further states that such flights are to be conducted:

> *'…on the condition that the aircraft is operated by the organisation on the basis of ownership or dry lease, that the flight does not generate profits distributed outside of the organisation, and that whenever non-members of the organisation are involved, such flights represent only a marginal activity of the organisation.'*

Organisations should inform potential passengers that introductory flights are not required to conform to the same safety regulations as commercial or public transport operations.

Selected additional CAP 1653 guidance is as follows:

- The aim of the introductory flight scheme is '*to attract new trainees or new members*.' They are not designed to replace any Light Aircraft Pilot's Licence or PPL syllabus flights, and the flight time cannot count as training towards the grant of a pilot's licence.
- Introductory flights '*should consist of an air tour of short duration*.'
- If the customer wishes to handle the controls of the aircraft, it must be booked as a trial lesson with an appropriately qualified instructor.

The operator and the pilot in command (PIC) are expected to assess the risk to the occupants of the aircraft by considering various factors, including '*aircraft weight and balance and performance calculations*.'

The Air Operations Regulations place specific responsibility on the PIC for the safe conduct of a flight, including compliance with airworthiness, WB and aircraft operating limitations detailed in the AFM and associated documentation. These regulations do not explicitly specify how a PIC should satisfy themselves that WB limits are observed. The CAA publication *'Safety Sense Leaflet 09 - Weight, Balance and Performance'*[14] provides guidance on the topic of weight, balance and aircraft performance for pilots conducting NCO flights. For the flight being undertaken, there was no regulatory requirement to generate an auditable record of WB calculations made by the pilot.

Flight training, including trial lessons which cover Exercises 1 to 4 of the syllabus for the issue of a Part-FCL licence, is conducted in accordance with Annex 1 (Part-FCL) of Aircrew Regulations (UK Reg No.1178/2011)[15].

Aircraft operator

While the operator held BGA Declared Training Organisation (DTO) status at the time of the accident, the nature of the flight was outside the scope of the BGA delegation, and, therefore, operated under the regulations for NCO flights.

Footnote

[14] Available at CAA Safety Sense Weight, Balance and Performance [accessed 14 November 2025].
[15] Available at Aircrew [accessed 20 October 2025].

The club sold introductory flights to the public through an online voucher scheme. The passenger's voucher was purchased directly from the club's website which described the flight as a first flying lesson which would include a 100 km *'motor glider tour'* of four lakes and four Second World War airfields in the local area. Flight vouchers could also be bought via a third-party 'experiences' company. The club explained that, while the flight was generically marketed as a trial lesson, the accident flight was being undertaken as an introductory flight rather than a flying lesson.

The '*Vouchers*' link on the club's website directed users to a page containing brief descriptions of each of the available flight packages with associated '*Buy Now*' buttons. The vouchers landing page did not contain information regarding age or medical restrictions and clicking the '*Buy Now*' button took customers directly to the payment platform. Nonetheless, the age and medical restrictions reproduced below could be found on the club's '*Terms and Conditions*' webpage which was accessible through an '*Airfield Info*' dropdown menu.

> *'…There is no upper age limit although in the interest of your own safety you must give details of any medical condition that may affect your ability in the air... The weight limit for tandem hang gliding, tandem paragliding and all microlight flights is 14.5 stone [92 kg]. Your weight should be in proportion to your height. If you fail to meet any of these requirements please call the office on [redacted] immediately.'*

These restrictions were largely reproduced on the fourth page of the electronic voucher emailed to the family member who booked the trial lesson, albeit the weight limit for glider flights was set at 90 kg.

The third-party experiences website quoted a weight limit of 14 stone [89 kg] and a maximum height of 6 ft 4 in for all flights. This information was accessible through a dropdown menu on the website rather than being included in the description of the experience being booked.

The flight vouchers included day membership of the club, and the operator explained that normal procedure was for students/passengers to complete a '*membership enrolment*' form before their first flight (Figure 11). The enrolment form requested personal details and contained various statements, in the form of a memorandum of understanding (MoU), for the applicant to initial. One of these statements was a medical declaration. The form did not capture passengers' weight, next of kin information or emergency contact details. The first MoU disclaimer had not been updated to include TMG flying. Prior to 8 April, the operator had only conducted two other introductory flights using G-CIMC, both were flown by the accident pilot on the preceding day. The club were unable to provide the investigation with a completed membership enrolment form for the accident flight passenger or for the other two voucher holders who flew in G-CIMC on 7 April 2025.

MEMBER DETAILS *(please use block capitals)*			
First Name:		Surname:	
Contact Tel 1:		Contact Tel 2:	
E-mail:			
Address:			
		Postcode:	
Date Of Birth *(if under 18 Yrs)*:		Parent/ Guardian Name:	
Occupation	*Can you help the club?...*		
Where did you hear about us?:			

MEMBERSHIP TYPE *(office use only)*		
DAY	PG TANDEM	( )
	PG DAY TASTER	( )
	HG TANDEM	( )
	ML AIR EXPERIENCE	( )
	PILOT	( )
MONTHLY	SOCIAL	( )
	GLIDING	( )
	POWER	( )
	GOLD	( )
	ANNUAL	( )

MEMORANDUM OF UNDERSTANDING *(initials)*	
• I fully appreciate that Hang-gliding, Paragliding, Microlighting and Foot Launched Powered Aircraft are potentially hazardous sports and in that knowledge I accept the risk that I could suffer personal injury or damage as a result of taking part in these sports.	___
• I also understand that I have no right to claim compensation from [redacted] its representatives, or instructors, in respect of any such accident causing damage or personal injury to me. This does not affect my statutory rights.	___
• I confirm that I have declared any mental, or physical condition, past or present, which may render me unfit to participate in the activity I am about to undertake and that I have also declared all medication I am receiving.	___
• I understand that it is a mandatory requirement for ALL students/ pilots undertaking flying activities from Darley Moor Airfield to hold third party insurance cover. I have discussed insurance options with my instructor and am aware that no provision for personal accident insurance may be available for specified disciplines.	___
• **I confirm that I have read and agree to abide by the [redacted] 'Airside Safety Rules'** ***(see reverse)***	___
• I accept that if I act at any time in a manner that endangers my safety, or that of others, I will be indefinitely stopped from flying at Darley Moor Airfield.	___
• I accept that the Chief Flying Instructor's decision is final and binding in all matters relating to flying and airside conduct.	___

I have read, understood and initialled the Memorandum of Understanding and agree to abide by the Airside Safety Rules			
Signature of Applicant *(Parent/ Guardian if under 18 Yrs)*:		Date:	

Figure 11

Gliding club membership enrolment form

Assessment of the risk of obscuration, obstruction or inadvertent control movement

A basic assessment of the potential for visual obscuration, obstruction or inadvertent operation of any control relevant to the takeoff was conducted using an exemplar aircraft and two males of a similar stature and weight to the aircraft occupants. The person simulating the passenger was 188 cm tall and weighed 112.6 kg. The person simulating the pilot was 177 cm tall and weighed 79.5 kg.

The physical match between the aircraft occupants and the males taking part in the assessment in terms of other body dimensions such as individual limb lengths and circumferences was not determined.

The aircraft seat position could not be adjusted. The pedal position was adjustable and both participants in the assessment adjusted their pedals to the best position for their size within the aircraft's limitations which was fully forward for the left seat (simulating the passenger).

No instruments, switches or controls on the main cockpit panels were visually or physically obscured including the propeller pitch control, rpm indicator, air speed indicator and the choke (Figure 12).

When the participants were seated in a relaxed posture, all controls on the lower centre console were fully or partially visually obscured and the controls on the left side of the centre console were partially physically obstructed by the right leg of the person in the left seat. Moving their right leg to the left to avoid obstructing these controls, resulted in fouling of the control column.

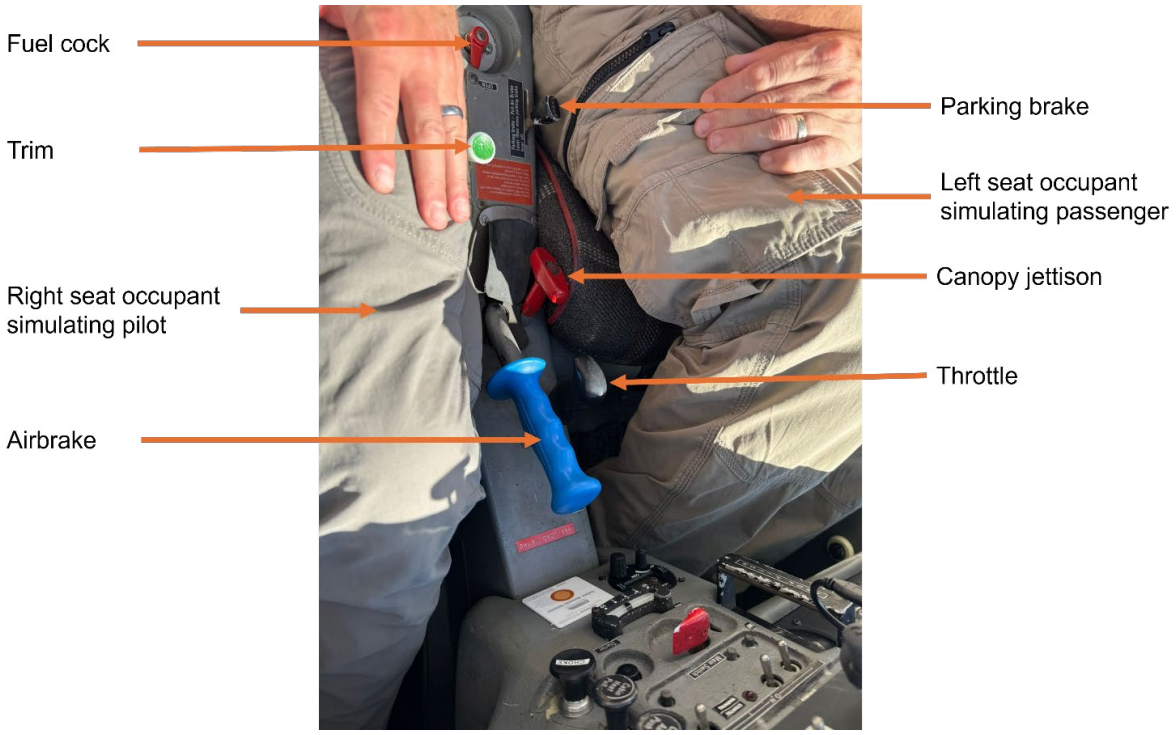

Figure 12

Position of controls on the centre console (picture taken from above instrument panel looking towards the rear of the aircraft)

In particular, the throttle control was positioned in the crook of the left seat occupant's knee and inadvertent movement was possible, for example if moving the legs to avoid obstructing the rudder pedals (Figure 13). The airbrake control was not obstructed or at risk of inadvertent operation due to its length and direction of movement.

Figure 13

Obstruction of controls on the centre console

The design of the trim lever meant that if the aircraft was trimmed nose-down and the lever was knocked out of the detent when the control column was being pulled aft beyond the trimmed position, it would suddenly jump to a new more nose-up position. Inadvertent trim lever movement of this kind was possible but not likely, unless the right seat occupant had items in a left thigh pocket. The accident pilot's clothing did not have any thigh pockets.

Analysis

Technical aspects

Examination of the aircraft wreckage did not identify a technical defect that could have either caused or contributed to the loss of control or an uncommanded reduction of engine power. The aircraft's engine was producing sufficient power during the takeoff roll, with the recorded propeller rpm greater than 2,700, the minimum required for takeoff. While it was not possible to determine the propeller blade pitch setting at impact, the recorded takeoff rpm is only achievable with the propeller set to fine pitch, as required by the AFM.

Accident flight

A family member had used the club's online voucher system to purchase the flight as a gift for the passenger and was unaware of any applicable weight or medical limitations. Although marketed as a trial lesson and with the PIC occupying the right seat, the club categorised the flight being undertaken as an introductory flight subject to UK Air Operations NCO regulations. Pilots occupying the right seat need to fly with their right hand, operate throttle and airbrake with their left hand, and look across the cockpit to read the primary flight instruments which are in front of the left seat occupant. The accident pilot was familiar with flying G-CIMC from either seat.

Witnesses described the takeoff as proceeding normally until the aircraft reached approximately 50-100 ft, at which point it started "wallowing." These pitch oscillations were suggestive of an aircraft close to the aerodynamic stall during the final few seconds before it departed from controlled flight. By the time the aircraft was in obvious difficulty it was out of earshot to the witnesses, none of whom reported hearing anything untoward related to the engine. The investigation was unable to determine why the aircraft appears to have been flying slower than expected, seemingly unable to climb or accelerate. The observed lack of performance is corroborated by the data traces in Figure 2.

The aircraft briefly achieved a maximum groundspeed of approximately 48 kt at 10:22:20 hrs before this reduced and remained below 44 kt from 10:22:26 hrs onwards. At one point the groundspeed reached as low as 30 kt. The LFMS performance expectation for the Dimona's average rate of climb from liftoff to 300 m was 2.7 m/s. G-CIMC's initial rate of climb for 10 seconds after lift off averaged approximately 2.14 m/s. The rate of climb then further reduced for 20 seconds as the groundspeed plateaued. It then increased to approximately 2.8 m/s as the groundspeed reduced toward 30 kt, after which the aircraft descended for the remainder of the flight.

While the investigation did not find a recording of the local surface wind, it was likely from an easterly direction at less than 10 kt, with little or no speed variation between the surface and 200 ft. With a wind speed at or below 10 kt, even if heading directly into wind, the aircraft was close to or below its clean, power-off stalling speed leading up to the point when the right wing dropped. The AFM did not give a figure for the power-on stalling speed, but the described symptoms were similar to the observed behaviour of G-CIMC.

Unable to climb and being close to the stall, an option open to the pilot should have been to commit to a forced landing. There were several grassed areas close to the accident site where an immediate landing might have been possible. In considering why the pilot was unable to execute an emergency landing, the investigation considered the right yaw experienced after lift off could have left the aircraft pointing between fields in the centre of the racetrack and a longer field east of the circuit. Turning left to land on a northerly heading might have risked colliding with the tyre barriers bordering the track. Turning right would have aligned the aircraft with a suitable landing area east of the circuit if the pilot had been able to fly beyond the tyre barriers. Tragically, the aircraft departed from controlled flight before a safe approach path could be established in either direction.

Neither of the occupants' postmortem examinations found evidence of medical factors that could potentially have been causal or contributory to the accident, but not all acute medical changes are pathologically detectable. Therefore, the investigation could not confirm or discount medical incapacitation as a possible causal or contributory factor. There was no evidence that the passenger or pilot were at any greater risk of incapacitation that any other pilot and passenger for this type of flight.

A basic assessment of the fit of similarly sized occupants in the aircraft showed that it may have been difficult for the passenger in the left seat to avoid fouling some of the controls. Visual obscuration of any relevant instruments was unlikely to be contributory. Inadvertent

operation of the airbrakes, choke or propellor pitch controls was unlikely due to their design and position in the cockpit. Inadvertent movement of the throttle by the passenger's leg was identified as a possibility. Inadvertent movement of the control column by the passenger, for example when attempting to avoid the throttle, was considered unlikely because this would result in left roll which was not witnessed during the accident. Inadvertent movement of the trim by the pilot's left leg was possible but is not likely because there were no thigh pockets whose contents could push against it. *'CAA Safety Sense Leaflet 02 - Care of Passengers'*[16] contains guidance for the management of passenger safety and includes reference to the potential for control obstruction.

Personnel

The pilot was appropriately licensed and held a valid medical certificate for the flight to be undertaken. He was in recent flying practice, familiar with G-CIMC and had flown it twice the previous day. He was reported to be in good spirits and looking forward to flying on the day of the accident.

Flight documentation

Although the club was unable to provide the investigation with completed membership enrolment forms for any of the three trial flights flown in G-CIMC, day membership was included in the cost of the flight voucher. The enrolment forms did not require pilots or passengers to declare their weight, nor did they include space to record next of kin or emergency contact details.

While the pilot had been observed preparing the aircraft in the hour before the passenger arrived, the DI book was not signed before the flight.

The flight was not conducted under its DTO delegation however, the BGA elected to take the following safety action:

The British Gliding Association wrote to all its member clubs:

- Highlighting where relevant guidance for the oversight of introductory flights can be found.
- Stressing the importance of ensuring flight preparation, including mandatory documentation, is completed fully and without distraction before flight.
- Asking them to consider the potential for 'duty teams' to feel under pressure when environmental conditions or the suitability of a passenger for the intended flight may pose a heightened risk to the operation.

Footnote

[16] Available at Safety Sense 02 Care of Passengers [accessed 14 November 2025].

Weight and balance

The aircraft took off above its maximum allowable takeoff weight and the passenger's mass exceeded the weight limit for the aircraft seat. Even working to the incorrect limit of 184 kg, G-CIMC's limited available payload was a risk factor for the operation, one requiring proactive management to ensure compliance with AFM limits. The investigation considered four potential barriers which might reasonably have prevented the overload condition from occurring. Some were not present, others were breached.

- Barrier 1: booking system weight limit information – Present/Breached.

The online booking platforms for both the club and the experiences company specified boarding weight limits but enabled and/or allowed customers to pay for flights before being presented with that information. Explicitly alerting customers to the limit before they proceed to payment and requiring customers to declare their boarding weight as part of the checkout process would ensure appropriate visibility for customer and operator. Body weight is a potentially embarrassing topic for people. Informing customers that an accurate boarding weight declaration was required for safety purposes and that it would be checked at the airfield before flight could avoid awkwardness at the Barrier 3 stage below.

- Barrier 2: voucher wording – Present/Breached.

While the terms and conditions listed on the voucher sent by the club included the weight limit of 90 kg, this was on the last page of the document in a general paragraph on age and medical restrictions. Many customers do not read terms and conditions in their entirety. Placing safety critical conditions at the start of such documents would make them more likely to be noticed.

- Barrier 3: formal weighing of new pilots and passengers – Not present.

While the club possessed a set of scales for the sole purpose of weighing pilots and passengers, its use was ad hoc rather than formalised. Requiring accurate boarding weights to be measured as part of the membership enrolment process would remove the element of subjectivity employed at the time of the accident flight.

- Barrier 4: mandatory WB paperwork – Not present.

In conjunction with Barrier 3, requiring PICs to formally calculate and record WB for initial flights would have acted as a barrier by highlighting the aircraft seat and weight limit exceedances from the outset. Even with pilots who meet the 90 kg limit, the payload limit could easily be exceeded if the maximum available fuel load is not calculated using accurate boarding weights. For this reason, WB calculations should be carried out during the planning stage, and before refuelling takes place. For pilots who regularly fly together, provided one auditable WB calculation is on record, an ongoing requirement for every flight would be potentially nugatory although body mass changes over time would need to be taken into consideration.

With all four of these potential barriers bypassed, the operation was unaware the combined weight of the occupants alone was too heavy for the intended flight. The investigation did not find evidence of what pre-flight planning or WB calculations might have been conducted by the pilot and no completed pre-flight documentation was discovered. The passenger was with the club officer when the pilot met him, so it is possible the pilot assumed pre-flight documentation had already been completed.

While not considered causal, the aircraft being overweight could have been an exacerbating factor when the aircraft was operating at the edge of its flight envelope, close to the stall. Extrapolation beyond an aircraft's CG envelope falls outside certification criteria, but the investigation considered it reasonable to conclude the longitudinal CG position of G-CIMC was unlikely to have been a causal factor.

Following this accident the club has taken the following safety actions to ensure pre-flight data capture, including customers' boarding weights, is completed before any experience flight can be scheduled:

The operating club has:

- Amended its flight booking processes to require the completion of an online data capture and flight waiver form by customers before any flight experience is scheduled.
- Instigated a requirement that declared boarding weights are verified at the airfield before a passenger's first flight.

Incorrect calculation of the maximum payload

The aircraft's weight and balance report incorrectly identified the maximum payload because the limitation on maximum weight of non-lifting parts was overlooked. The maximum payload was recorded as 184 kg; the correct figure was 170.6 kg. As a result of this accident the BGA plans to issue a notice to all BGA Inspectors highlighting the need to identify all relevant information, including a non-lifting parts limitation, when producing aircraft weighing reports for aircraft maintained within the BGA CAO.

Conclusion

The accident occurred because the aircraft was unable to maintain a safe climb profile after takeoff. The investigation was unable to determine why the aircraft did not climb as expected or what factors contributed to the pilot not being able to carry out a successful forced landing. The engineering investigation did not find evidence of any technical issue that might have limited engine performance. An anthropometric study found the potential for fouling of the controls meant that an inadvertent throttle reduction was a possibility and that inadvertent movement of the trim was possible but not likely.

While the aircraft took off approximately 35 kg above the maximum approved mass, the investigation considered that to be a contributory rather than causal factor.

Safety actions

The British Gliding Association took the following safety action:

The British Gliding Association wrote to all its member clubs:

- Highlighting where relevant guidance for the oversight of introductory flights can be found.
- Stressing the importance of ensuring flight preparation, including mandatory documentation, is completed fully and without distraction before flight.
- Asking them to consider the potential for duty teams to feel under pressure when environmental conditions or the suitability of a passenger for the intended flight may pose a heightened risk to the operation.

The following safety actions have been taken by the operating club:

The operating club has:

- Amended its flight booking processes to require the completion of an online data capture and flight waiver form by customers before any flight experience is scheduled.
- Instigated a requirement that declared boarding weights are verified at the airfield before a passenger's first flight.

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