

## Accident

<b>Aircraft Type and Registration:</b>	Cessna FRA150L, G-PPFS
<b>No &amp; Type of Engines:</b>	1 Continental Motors Corp O-240-A piston engine
<b>Year of Manufacture:</b>	1972 (Serial no: 0126)
<b>Date &amp; Time (UTC):</b>	28 July 2024 at 0845 hrs
<b>Location:</b>	Near Thorganby, North Yorkshire
<b>Type of Flight:</b>	Private
<b>Persons on Board:</b>	Crew - 1                      Passengers - 1
<b>Injuries:</b>	Crew - 1 (Fatal)              Passengers - 1 (Fatal)
<b>Nature of Damage:</b>	Aircraft destroyed
<b>Commander's Licence:</b>	Private Pilot's Licence
<b>Commander's Age:</b>	21 years
<b>Commander's Flying Experience:</b>	153 hours (of which 131 were on type) Last 90 days - 53 hours Last 28 days - 13 hours
<b>Information Source:</b>	AAIB Field Investigation

## Synopsis

The aircraft entered a fully developed spin to the left but, when recovery actions were commenced, the control column was not pushed far enough forward to un-stall the wing. The aircraft therefore remained in a spin until it struck the ground.

The pilot was newly rated for aerobatic flying, and it was likely that the spin recovery technique had not yet become a skill-based response that he could apply effectively even when surprised.

The accident highlighted how unexpectedly challenging it can be to recover from multiple-turn spins.

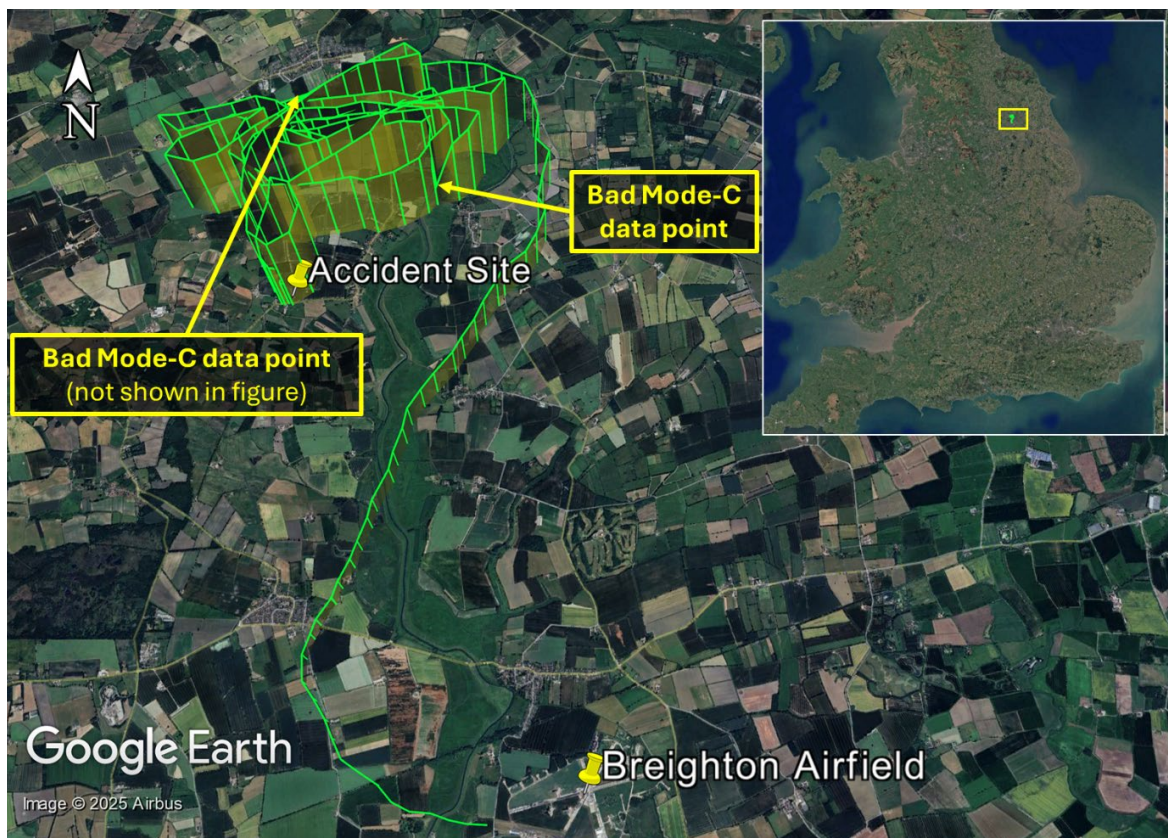
## History of the flight

The aircraft departed from Brighton Airfield (Brighton) at around 0815 hrs in fine weather. The pilot, who had a friend on board, flew northbound and informed Humberside radar control of his intent to perform aerobatic manoeuvres between 3,000 and 6,000 ft<sup>1</sup> amsl (Figure 1).

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### Footnote

<sup>1</sup> Brighton's elevation is 20 ft.



**Figure 1**

Aircraft's flight path from Claxby radar data

Video recordings from inside the cockpit showed the pilot performing aerobatic manoeuvres<sup>2</sup> from over 5,000 ft amsl. He performed lookout turns and regained altitude between each manoeuvre.

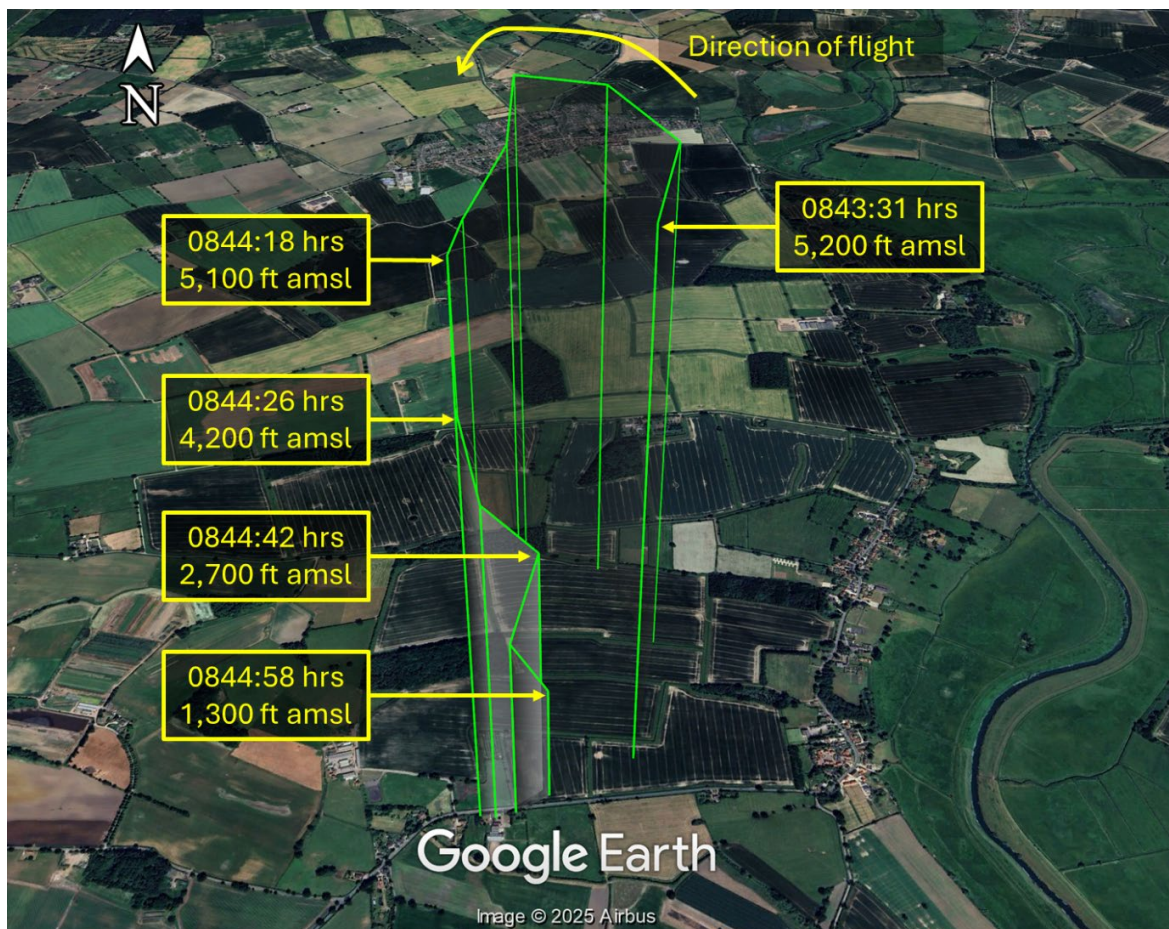
At 0844 hrs, the pilot entered the aircraft into a power off stall then a spin to the left<sup>3</sup>. While descending below 1,300 ft amsl (Figure 2), according to radar data, he transmitted a MAYDAY call saying the aircraft was "IN AN UNCONTROLLED SPIN". The ATCO replied but there were no further transmissions from the aircraft. The aircraft's average descent rate was about 5,700 ft/min. It disappeared from radar when it was below 600 ft amsl and struck the ground in a field near Thorganby at 0845 hrs. The ATCO alerted the emergency services.

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#### Footnote

<sup>2</sup> None of those resulted in the aircraft spinning.

<sup>3</sup> See later section: Spinning – general information.



**Figure 2**

Aircraft's flight path during the descent

## Recorded information

### *Introduction*

An action camera and mobile phone were recovered from the accident site and downloaded by the AAIB. They contained video recordings made in the cockpit on the accident flight, including during the accident sequence.

ATC radar and R/T recordings from the day of the accident were obtained from NATS and Humberside Airport, as well as from the day before, covering the times when G-PPFS flew.

### *Cockpit video recordings*

The video recordings gave a good view of the pilot's actions and captured several aerobatic manoeuvres performed during the flight, including the spin<sup>4</sup>. In some of the recordings, the pilot made a series of hand gestures before entering a manoeuvre, which appeared to indicate the manoeuvre he was intending to perform.

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### Foonote

<sup>4</sup> Relevant aspects are included in the 'History of the flight' and 'Spin manoeuvre and descent' sections of this report.

The action camera's video quality was sufficient to infer approximate airspeed readings from the ASI. The Altimeter and Vertical Speed Indicator (VSI) could also be read. Videos from the passenger's phone were of a higher resolution, enabling the altimeter setting to be read: It showed a QNH setting of 1025 hPa, as provided by the Humberside radar controller.

The video captured the pilot making an emergency RTF call to Humberside ATC as the altitude indicator read 900 ft QNH, and the VSI showed negative full-scale deflection (-2,000 ft/min). Timestamp metadata from the video recording indicated that G-PPFS struck the ground at 0845:13 hrs. The video recording showed that the engine was running throughout the flight, and that the pilots were not wearing parachutes.

#### *Radar control position recordings*

ATC recordings captured all radio communications between the pilot and the Humberside Radar controller, synchronised with recordings of the controller's radar display.

Mode-C altitude information was presented to the controller next to the aircraft's radar return and updated once every eight seconds. Displayed Mode-C reports were consistent with those from the Claxby Radar recordings. At 0845:05 hrs, the pilot made a MAYDAY call at a point where the ATC display indicated a Mode-C altitude of 1,300 ft amsl.

#### *NATS radar data*

G-PPFS was detected by the Claxby and Great Dun Fell radars for almost the whole accident flight, including Mode-C pressure altitude information at  $\pm 100$  ft resolution. The flight path derived from the Claxby radar recordings is shown in Figure 1, with invalid data points removed based on comparison with other sources. The final portion of the flight is shown in Figure 2 with altitude corrected for local QNH.

Recordings of the Mode-C returns by Claxby radar indicated that G-PPFS began its final descent from about 5,100 ft amsl. The last detection was 40 seconds later, with a reported altitude of 1,300 ft amsl, corresponding to an average descent rate of about 5,700 ft/min. Based on this data, G-PPFS was estimated to have struck the ground at 0845:12 hrs, consistent with time-stamp metadata from the action camera video (which was 0845:13 hrs).

### **The spin manoeuvre and descent**

#### *The initial manoeuvre*

Radar data showed the aircraft at around 5,100 ft amsl, (while the altimeter in the cockpit video showed 5,300 ft amsl), when the pilot reduced engine power to idle, allowed the airspeed to decrease, and entered a spin to the left at approximately 40 kt IAS. During the first turn, the IAS increased briefly to approximately 60 kt before dropping to less than 35 kt, the lowest airspeed marking on the airspeed indicator. Both occupants could be heard on the video counting to three – apparently referencing the number of spin rotations – before the pilot attempted to recover from the manoeuvre.

### *The rest of the descent*

The video showed that the aircraft remained in a spin throughout the descent. The throttle remained at the idle position, and the aileron control stayed around the neutral position.

The pilot verbally indicated he was applying right rudder a number of times. Occasional views of the rudder pedals and sounds on the videos confirmed right rudder was applied. At times he appeared to momentarily relax his foot pressure on the pedal, then re-apply it, and there was a level of surprise<sup>5</sup> in his voice.

As part of the recovery actions, the elevator control was moved forward from the fully aft position it had been in as the spin was entered. Shortly afterwards, the control was moved aft by approximately half the distance it had previously moved forward. As the pilot transmitted his MAYDAY call, the control moved further aft to a position close to its position at spin entry. The IAS remained below 35 kt throughout the descent.

### **Accident site**

The aircraft came to rest upright in a field having struck the ground in a nose-down attitude with a high rate of descent. The engine and wings remained attached, but the upper section of the rear fuselage had broken aft of the cockpit section. This was a consequence of the accident, and there was no evidence of an in-flight structural failure. The left aileron had been bent down at a 90° angle by the individuals who first attended the scene; this was to stabilise the aircraft to aid their attempts to rescue the pilot and passenger. The flaps were in the retracted position, and distortion along the longitudinal axis of the wreckage indicated that the aircraft was probably rotating to the left at impact. The propeller was still attached and one of its blades had cut into the ground indicating that the engine was running when the aircraft struck the ground.

Examination of the flying controls that were immediately accessible at the accident site showed no evidence of a pre-existing anomaly. The aircraft was recovered to the AAIB for further examination.

### **Aircraft examination**

Examination of the aircraft at the AAIB confirmed that it suffered extensive damage in the accident, but examination of the structure and flying controls revealed no pre-existing failures that would have prevented normal operation.

### **Aircraft information**

The Cessna 150 is a two-seat, high-wing monoplane with fixed tricycle landing gear. G-PPFS was a FRA150L Aerobat, manufactured by Reims in France and based on the Cessna 150 but with a more powerful engine.

The Airworthiness Review Certificate (ARC) was valid until 5 February 2025, and the aircraft had accrued approximately 6,500 flying hours.

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### **Footnote**

<sup>5</sup> A cognitive-emotional response caused by a mismatch between a person's mental model and reality.

## The pilot's training and experience

### *The pilot's logbook*

The pilot started flying in January 2021, following a modular training route<sup>6</sup> for gaining a CPL with IR. He flew frequently, mainly from a school at Brighton in Cessna 150 aircraft, including G-PPFS.

The pilot's logbook indicated that after initially undertaking a Light Aircraft Pilot's Licence (LAPL) course, he completed his PPL course in October 2022. He was working towards his CPL and had completed his ATPL ground school exams.

During the period from April 2024 until the accident, the pilot flew frequently – mainly as PIC for navigation and handling practice. One flight on 10 May 2024 was logged as '*Aerobatics practice*'. He completed an IR (Restricted)<sup>7</sup> between 24 May and 3 July 2024 in a DA40 aircraft at a different flying school, based at Sherburn-in-Elmet Airfield (Sherburn). That course included upset prevention and recovery training (UPRT)<sup>8</sup>.

In June 2024, the pilot began an aerobatics rating at a point when he had flown approximately 36 hours as PIC since his PPL was issued (approximately 59 hours since his LAPL was issued). The training consisted of five flights – totalling 5.3 hours – with an instructor over two dates, 13 and 20 June 2024, and separate ground school training. Three flights occurred on the first day of training and two flights on the second day. The pilot's logbook noted that '*spinning*', and '*spin entry and recovery*' were performed on the first, fourth and fifth flights of that course, and his instructor commented that the fifth flight was purely focussed on practising spins.

The pilot went on to complete a Multi-Engine Piston (MEP) rating in a DA42 aircraft at Sherburn between 10 and 15 July 2024. His logbook recorded three more solo flights, including a land away trip to another airfield, and one of those flights reportedly included aerobatics. On 27 July 2024 – the day before the accident – he flew with a different friend in G-PPFS. He described that flight in his logbook as '*Nav [and] aeros*'. Radar data indicated he did not perform any spinning during that flight.

### *Other information*

A number of witnesses mentioned the pilot's enthusiasm for aerobatics as a way to learn more about aircraft handling, and to serve as a break from his professional flying training programme. One witness said he had spoken to them of taking a cautious attitude towards spinning.

The pilot's flying instructors described him as a particularly competent pilot with an enthusiastic and conscientious attitude to flying. He was scheduled to begin IR training at Sherburn on the day after the accident.

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### Footnote

<sup>6</sup> Modular training comprises self-contained courses and qualifications, as opposed to a single integrated course.

<sup>7</sup> IR(R) – allows flight in IMC but with more restrictions than an IR.

<sup>8</sup> UPRT – teaches pilots to recognise and recover from unusual aircraft attitudes.

## Spinning – general information

An aircraft may spin if there is sufficient yaw present as the wing stalls. The wing stalls when the angle at which the airflow meets the wing (angle of attack (AOA)) exceeds a critical angle. Above this critical (stalling) AOA, lift on the wing reduces sharply. A typical way of increasing the AOA as part of the entry into a stall or spin is to reduce power and raise the nose attitude of the aircraft to maintain altitude while the speed reduces.

Yaw refers to the aircraft rotating about its vertical axis. When sufficient yaw is present at the stall, it can lead to a self-sustaining motion whereby the aircraft yaws about its vertical axis and rolls about its longitudinal axis. When this happens, the aircraft enters a sustained spiral descent with the AOA above the stalling angle.

The general recovery technique (subject to aircraft-specific guidance) is to reduce power to IDLE and use full rudder to oppose the yaw and break the self-sustaining roll-yaw coupling. The control column must be moved centrally forwards far enough to reduce the AOA below the stalling angle and un-stall the wing. When the spin stops, the controls must be centred, leaving the aircraft in a steep, nose-down attitude from which it can be recovered to level flight if there is sufficient height available.

## Information from reference manuals

### *Aircraft Flight Manual*

The Aircraft Flight Manual (AFM) for G-PPFS states '*Parachutes must be worn during aerobatic flight*' but contains no further guidance on their use. The manual states:

*'Spins should be practiced at altitudes of 3000 feet... or more above the surface. The normal entry is made from a power-off stall.'*

As the aircraft approaches the stall:

*'the elevator control should be pulled to the full aft position' and 'full rudder deflection [should be] reached almost simultaneously with reaching full aft elevator'.*

The normal spin recovery technique given in the AFM is:

- '(1) Apply full opposite rudder against the direction of rotation.*
- (2) Move the elevator control forward of neutral in a brisk motion.*
- (3) Neutralize aileron control.*

*These three manoeuvres should be done simultaneously.*

- (4) As the rotation stops, neutralize rudder, and make a smooth recovery from the resulting dive. Power should not be reapplied until the airplane is near a level flight attitude.'*

The AFM gave the aircraft stall speed as 48.5 kt CAS at maximum gross weight and with flaps up. The speed was given as CAS because *'indicated airspeeds are unreliable near the stall'*.

Note: CAS is IAS corrected for instrument errors and position errors, which are errors caused by disrupted airflow near the static port (which senses static pressure in the atmosphere). This typically causes the IAS to be less than CAS by 1 to 3 kt near the stall in light aircraft, such as the Cessna 150.

#### *Cessna spin characteristics manual*

The Cessna spin characteristics manual offers further information relevant to spinning. The section *'Basic guidelines for intentional spins'* included the following:

*'Limit yourself to 2-turn spins until completely familiar with the characteristics of your airplane...'*

Describing the *'fully developed "steady" spin phase'* (which typically begins after about two turns), the manual stated:

*'Because of the strong gyroscopic influences in the spin, improper aerodynamic control inputs can have an adverse effect on the spin motion... it is important, particularly in this steady spin phase, in addition to using the correct control application and proper sequence of control application, to HOLD THIS APPLICATION UNTIL THE RECOVERIES OCCUR. In extreme cases, this may require a full turn or more with full down elevator deflection...'*

*The emphasis added to these steps<sup>9</sup> differentiates the steady phase from the incipient phase. The most important difference in the steady phase is an increase in length of recoveries in this phase for some airplanes, and to a lesser extent the amount of control input needed.'*

#### **Information from the flying school**

##### *The school*

The flying school was a Declared Training Organisation (DTO), and its *'Flying Order Book'* (FOB) section on *'Aerobatics and spinning'* stated:

*'Any flight with the intention of performing aerobatics or spinning has to be specifically authorised and only those manoeuvres as approved shall be flown.'*

The FOB did not require the use of parachutes during aerobatics and spinning, and the school did not offer parachutes to pilots or offer training in their use.

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#### **Footnote**

<sup>9</sup> The 'emphasis' refers to the underlined text in the procedure.

The school's owner (who was also the Head of Training) did not hold a qualification to instruct for the aerobatic rating, and so the responsibility for this training was delegated to suitably qualified instructors within the organisation.

### *The pilot's aerobatic training*

The pilot's instructor reported that he had delivered ground briefings before each flight as part of the aerobatics course, "talking through the manoeuvres, what the pilot could expect to see and feel", and how to link manoeuvres together. He would also discuss what "not to do", and relevant "emergency exit" techniques.

He said they covered a reasonable amount of spinning during the course, focussing on it completely at the end. His training method was to count aloud the first three spin rotations, to get past the incipient stage, before initiating the recovery manoeuvre. For the recovery, he taught that opposite rudder should be applied while pushing the control column forward (with the ailerons neutral), as though the two controls were linked. He described the pilot as very capable and quick to recover the aircraft.

The head of training stated that he discussed the pilot's training with the pilot's instructor, and they were satisfied that all elements of the aerobatic syllabus had been completed satisfactorily, including recovery from spins.

### **Weight and balance**

A weight and balance calculation for the flight showed the aircraft to be within specified limits.

### **Regulatory information**

#### *Flight crew licensing*

The CAA's '*FCL.800 Aerobatic rating*'<sup>10</sup> stated:

*'Applicants for an aerobatic rating shall have completed: (1) after the issue of the licence, at least 30 hours of flight time as PIC in aeroplanes... (2) a training course at a DTO or at an ATO, including... theoretical knowledge instruction appropriate for the rating [and] at least 5 hours of aerobatic instruction in aeroplanes...'*

The related Acceptable Means of Compliance (AMC)<sup>11</sup> document specified that the theoretical knowledge syllabus should cover aspects of human factors and body limitations; technical and legislative subjects; aerobatic manoeuvres and recovery; and emergency procedures, for example, '*use of parachutes (if worn) and aircraft abandonment*'.

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#### **Footnote**

<sup>10</sup> UK Regulation (EU) No. 1178/2011, Annex I PART-FCL, FCL.800 Aerobatic Rating, available at [https://regulatorylibrary.caa.co.uk/1178-2011/Content/Regs/03620\\_FCL.800\\_Aerobatic\\_rating.htm](https://regulatorylibrary.caa.co.uk/1178-2011/Content/Regs/03620_FCL.800_Aerobatic_rating.htm) <https://www.legislation.gov.uk/eur/2011/1178/annex/I> [accessed 11 September 2025].

<sup>11</sup> Acceptable Means of Compliance to UK Regulation (EU) No. 1178/2011 FCL.800 Aerobatic Rating, available at <https://regulatorylibrary.caa.co.uk/1178-2011/Content/AMC%20GM%202%20Subparts%20EtoK%20pls%20Annex/AMC1%20FCL%20800%20Aerobatic%20rating.htm> [accessed 29 August 2025].

The human factors and body limitations section included spatial disorientation, airsickness, body stress and G forces, and grey- and black-outs. The aerobatic manoeuvres and recovery section included *'planning systems and sequencing of manoeuvres'* and *'entry and recovery from developed spins, flat, accelerated and inverted'*.

#### *CAA Safety sense leaflet*

In the *'Human factors'* section of the CAA's Safety Sense leaflet on *'Aerobatics in light aircraft'*<sup>12</sup>, guidance is provided on certain *'Attitudes and behaviours'*. It discusses setting personal limitations, and how people can behave differently in dynamic situations compared to those where they have more opportunity to analyse, and/or when other people are present. The section also discusses physical effects, including spatial disorientation and the effects of G-loading.

It is not a CAA requirement to wear a parachute while performing aerobatics, but the *'Protective equipment'* section of the leaflet states that *'If a parachute is worn, be familiar with its operation and regularly rehearse how to abandon the aircraft safely.'*

The leaflet encourages pilots to maintain skills and knowledge, advising them to *'Mentally rehearse the spin recovery, both erect and inverted'*.

#### *Spin recovery video and safety action*

The CAA produced a video, *Loss of Control – Stall and Spin Awareness*<sup>13</sup>, in response to an incident during which a student and instructor experienced difficulty in recovering from an *'out of control'* spin. The video discusses the importance of pilots knowing and being able to confidently apply spin recovery techniques.

In response to this accident, the CAA said it was considering adding behaviour and attitude aspects to the human factors section of the *'AMC 1 FCL.800 Aerobatic rating'* syllabus. It also intended to publicise the spin recovery video and *'Aerobatics in light aircraft'* Safety Sense leaflet in its ongoing safety promotion work with flying schools. On 11 March 2026, the CAA re-publicised the Safety Sense leaflet through a notification on CAA Skywise<sup>14</sup>.

### **Discussions with other aerobatic flying schools on spin recovery**

Discussions with other aerobatic instructors reinforced messages from the Cessna spin characteristics manual, such as the importance of decisive elevator control movement during spin recovery and the importance of seeing a multiple turn spin during training. The Cessna 150 spin recovery was viewed as relatively straightforward but, like other types, a harder push force would be required on the elevator control during a steady spin than during an incipient one. Also, the various forces and "weight of the air" could lead pilots to believe they were pushing further forward than they actually were.

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#### **Footnote**

<sup>12</sup> [https://www.caa.co.uk/media/jkxlnrvv/caa9396\\_safetysense\\_aerobatics-v5.pdf](https://www.caa.co.uk/media/jkxlnrvv/caa9396_safetysense_aerobatics-v5.pdf) [accessed 18 March 2026].

<sup>13</sup> <https://www.bing.com/videos/riverview/relatedvideo?q=caa+video+loss+of+control+-+stall+and+spin+awareness&mid=F24F39D1D4880A353A25F24F39D1D4880A353A25&FORM=VIRE> [accessed 18 March 2026].

<sup>14</sup> <https://skywise.caa.co.uk/> [accessed 17 April 2026].

A common issue mentioned was that the high descent rates during spinning could cause pilots to feel uncertain about pushing (and holding) the control column forward. Pilots could become startled<sup>15</sup> when an aircraft did not recover as expected, causing doubt and leading to inaccurate control inputs.

### Human factors

Human responses can be described in a hierarchy of 'knowledge', 'rule', or 'skill' based<sup>16</sup> in order of decreasing conscious thought. As someone learns and practices a given response, it moves from being 'knowledge based' (requiring relatively more conscious thought) to becoming 'skill based' (more automatic in nature).

### Survivability

The occupants were not wearing parachutes, and the impact with the ground was unlikely to have been survivable.

### Analysis

#### *The accident flight*

The pilot departed from Brighton with a friend to perform aerobatics in good weather, and he flew to a rural location and reasonable height before commencing manoeuvres. He performed lookout turns and regained altitude between manoeuvres, which was in accordance with his training.

Using the specified power-off stall technique, when the aircraft slowed to approximately 40 kt the pilot entered the aircraft into a spin to the left. As in his instructional flights he counted to three in reference to the aircraft's rotations before attempting to recover. After the first turn the IAS settled at a value below 35 kt. The AFM gave the aircraft's stalling speed as 48.5 kt CAS, and so it was clear that the wing remained stalled during the descent, even allowing for the fact that the airspeed indicator would show a slightly lower IAS at the stall than 48.5 kt. Consistent with the manufacturer's spin guidance, the aircraft's power remained at IDLE and the ailerons remained close to neutral during the descent. The pilot correctly applied right rudder but it did not appear from the video to have been held consistently in the full right position, and evidence from the video and accident site showed that the aircraft was still rotating (yawing) to the left as it struck the ground.

Guidance on the aircraft's spinning characteristics emphasised that proper recovery control inputs should be held until recovery occurred and that this may require full down (control column forward) elevator deflection for a full turn or more. In this case, as the aircraft descended the elevator control was moved forward initially before moving aft again. In the latter stages of the descent, the control was only slightly forward of the position it had been in as the aircraft entered the spin, which was almost fully aft. At no point was it moved to, or held in, a position that could be described as fully forward. This meant that the AOA

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#### Footnote

<sup>15</sup> Startle – an automatic response to a sudden, intense or unexpected stimulus which can impair a person's ability to react appropriately.

<sup>16</sup> Rasmussen's 'Skills, Rules, Knowledge' (SRK) model.

would not have reduced below the critical angle and the wing would have remained stalled, which was confirmed by the airspeed indicator needle remaining below 35 kt. With the yaw continuing and the wing stalled, the aircraft remained in a spin to the left until it struck the ground. This was consistent with the video footage, and evidence from the accident site, which was that the aircraft struck the ground in a nose-down attitude, yawing left and with a high rate of descent.

The pilot's aerobatic instructor reported that during spin training, the pilot had been quick to recover the aircraft on the count of "three". In this case, however, the pilot appeared surprised and startled when the aircraft did not recover quickly from the spin, and he did not realise that the control column remained aft of neutral, thereby preventing recovery.

#### *The use of parachutes*

The AFM required pilots to wear a parachute during aerobatic flight. However, wearing parachutes is not a regulatory requirement, it was not required in the FOB, and discussion with aerobatic training providers suggested that it was not common practice during aerobatic training. In this accident, neither occupant was wearing a parachute, and no evidence was found to suggest the pilot had received any training in their use.

#### *Training for spin recovery*

Applicants for an aerobatic rating must have flown at least 30 hours as PIC since their licence was issued and, at the end of his aerobatic training, the pilot had flown approximately 36 hours since his PPL was issued and 59 hours as PIC since his LAPL was issued. He had a total time flying of 153 hours. The pilot's aerobatic training consisted of theoretical instruction, and 5.3 hours of flying over two (non-consecutive) days. He therefore met the requirements for the issue of an aerobatic rating but at the time of the accident was still relatively inexperienced in aerobatic flight and spinning.

Spin recovery training is a mitigation against inadvertent spinning during aerobatic manoeuvres, and inadvertent loss of control will probably cause some surprise. When surprised, it is helpful to be able to respond with a well-rehearsed, skill-based recovery procedure requiring little conscious thought, and it is in this context that pilots practise spin entry and recovery techniques. Although the pilot entered the spin deliberately, he appeared surprised when his recovery actions did not lead to the outcome he expected. He had flown for 5.3 hours during his aerobatic rating training, but this had included aerobatic manoeuvres in addition to spin recovery actions, and also included transiting to and from the training area. There was no evidence that he had conducted any spinning in the four flights following his MEP training, although it is possible that he did. Nevertheless, it appeared likely that there had been insufficient spin recovery practice for the recovery technique to move from a knowledge-based response to a skill-based (more automatic) response. It also appeared likely that, once the spin became established, the issues highlighted by the instructors consulted during the investigation became significant in explaining the unsuccessful recovery: a harder push force on the elevator may be required in a fully developed spin; pilots may consider they have pushed the elevator control further forward than they actually have; and the aircraft not recovering as expected may lead to doubt and inaccurate control inputs.

The pilot was known to be sensible and conscientious and there was nothing to suggest that this was not the case in this flight. However, this accident and the CAA 'Loss of control' video highlight how unexpectedly challenging multiple turn spins can be. The CAA's safety sense leaflet advises pilots to mentally rehearse spin recovery, which helps embed a skill-based response that may be effective even when pilots behave differently to how they might expect in dynamic situations and when surprised.

#### *CAA action*

The CAA said it was considering adding behaviour and attitude aspects to the human factors section of the AMC syllabus, consistent with guidance in the aerobatics safety sense leaflet.

The CAA's video discussed the importance of pilots being able to confidently apply spin recovery techniques and of using parachutes. In response to this accident, the CAA said it intended to publicise the video and safety sense leaflet during its safety promotion work with flying schools.

#### **Conclusion**

The pilot intentionally stalled the aircraft in level flight, applied full left rudder and the aircraft entered a fully developed spin to the left. After three turns, the pilot applied recovery controls but did not move the control column far enough forward to un-stall the wing. The wing remained stalled and the aircraft continued to spin until it struck the ground.

The pilot had qualified for his aerobatic rating after 5.3 hours of flying against a minimum requirement of 5 hours, and he appeared surprised that his recovery actions were not proving effective. It was likely that the spin recovery technique had not yet become a skill-based response that the pilot could apply effectively even when surprised and in a dynamic situation.

Following this accident, the CAA intended to promote to flying schools its safety sense leaflet and video about spin awareness and the use of parachutes. It was also considering expanding its AMC syllabus to include psychological factors.

*Published: 30 April 2026.*