

AAIB Bulletin

3/2023



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Published 9 March 2023

Cover picture courtesy of Marcus Cook

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ISSN 0309-4278

Published by the Air Accidents Investigation Branch, Department for Transport
Printed in the UK on paper containing at least 75% recycled fibre

CONTENTS

SPECIAL BULLETINS / INTERIM REPORTS

None

SUMMARIES OF AIRCRAFT ACCIDENT ('FORMAL') REPORTS

None

AAIB FIELD INVESTIGATIONS

COMMERCIAL AIR TRANSPORT

FIXED WING

None

ROTORCRAFT

None

GENERAL AVIATION

FIXED WING

None

ROTORCRAFT

None

SPORT AVIATION / BALLOONS

None

UNMANNED AIRCRAFT SYSTEMS

None

AAIB CORRESPONDENCE INVESTIGATIONS

COMMERCIAL AIR TRANSPORT

None

GENERAL AVIATION

Europa XS	G-CHAH	18-Mar-22	3
Lancair 320	G-PJMT	7-Oct-22	5
Nord NC856A	G-CGWR	23-Sep-22	9
Piper PA-34-200T	G-RVNO	14-Jun-22	11
Zenair CH 601HD	G-BVVM	29-Jul-22	13

CONTENTS Cont

AAIB CORRESPONDENCE INVESTIGATIONS Cont

SPORT AVIATION / BALLOONS

Grob G103 Twin Astir II	G-CKRH	15-Oct-22	15
-------------------------	--------	-----------	----

UNMANNED AIRCRAFT SYSTEMS

DJI Inspire 2	n/a	19-Jul-22	17
---------------	-----	-----------	----

RECORD-ONLY INVESTIGATIONS

Record-Only UAS Investigations reviewed:	December 2022 / January 2023	23
--	------------------------------	----

MISCELLANEOUS

ADDENDA and CORRECTIONS

Jabiru UL-430	G-RUFS	13-Aug-22	27
---------------	--------	-----------	----

Thruster T600N 450	G-CBIR	10-Aug-22	28
--------------------	--------	-----------	----

List of recent aircraft accident reports issued by the AAIB			29
---	--	--	----

(ALL TIMES IN THIS BULLETIN ARE UTC)

AAIB Correspondence Reports

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

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

The accuracy of the information provided cannot be assured.

ACCIDENT

Aircraft Type and Registration:	Europa XS, G-CHAH
No & Type of Engines:	1 Jabiru 3300A piston engine
Year of Manufacture:	2005 (Serial no: PFA 247-12949)
Date & Time (UTC):	18 March 2022 at 1530 hrs
Location:	Welshpool Airport, Powys
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Damage to propeller, engine cowl and wing tip
Commander's Licence:	Private Pilot's Licence
Commander's Age:	74 years
Commander's Flying Experience:	617 hours (of which 523 were on type) Last 90 days - 3 hours Last 28 days - 2 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and enquiries made by the AAIB

Synopsis

Immediately after takeoff, the engine lost power but it continued to run roughly. The pilot pushed the nose down, closed the throttle in case the engine recovered, and landed on the remainder of the runway. The propeller, engine cowl and right wingtip were damaged during the landing. The loss of power was due to a displaced O-ring seal which caused a leakage in the induction system.

History of the flight

Immediately after takeoff, at approximately 60 ft agl and 60 kt, and just as the pilot was retracting the landing gear and flaps, the engine lost power. The engine continued to run roughly. The pilot pushed the nose down and closed the throttle, in case the engine recovered, and landed on the remainder of the runway. On touchdown the partially retracted main wheel was pushed into its well and the aircraft came to a stop on the right side of the runway. The propeller, nose cowl and right wingtip were damaged during the landing. The pilot made the aircraft safe and vacated the cockpit uninjured.

Engine examination and causal factors

An engineer examined the engine after the accident and found that an O-ring seal in the induction system appeared to have been displaced. The induction system consists of a plenum chamber with six induction pipes branching out to the inlet ports on each cylinder. The pipes are held and sealed into the outlet orifices of the plenum chamber with an O-ring

seal and a bead of gasket sealant. In this case one of the four O-ring seals had become displaced and was no longer able to provide an airtight seal. This allowed air to be drawn into the induction system which adversely affected the fuel air ratio. It is possible that the displacement of the O-ring seal had been caused by a slight movement or shrinkage over time of one of the neoprene flexible joints on the induction pipes.

The organisation that maintained the engine has encountered similar problems on other Jabiru engines and considers that the method of assembly detailed in the manual, although correct, can be misinterpreted. Accordingly, the maintenance organisation is producing some illustrated guidance to owners.

AAIB comment

In many cases a partial power loss in General Aviation aircraft results in a forced landing and this often, but not always, leads to damage to the aircraft.

Often when pilots are faced with a loss of power, the temptation is to carry on in the hope the engine recovers. On numerous occasions there is a decision to turn back after takeoff or to 'nurse' an aircraft with low or decreasing power back to the airfield. With an unpredictable engine at low power, this often leads to a loss of control in flight which results in a more serious or even fatal outcome.

The AAIB has recently reported on partial power loss on takeoff events¹ which have highlighted concerns that some GA pilots may not be specifically trained to manage partial power loss immediately after takeoff. The AAIB has therefore issued Safety Recommendations to the UK Civil Aviation Authority to address training for ab initio pilots, as well as instructors and examiners, to undergo training in the management of partial power loss situations in single-engine fixed-wing aeroplanes. The recommendations also address promotion of partial power loss techniques to GA pilots.

The pilot in this case took appropriate action to land the aircraft and not to turn back. In closing the throttle, he also removed the risk of the engine suddenly recovering and causing the aircraft to either unexpectedly climb or re-accelerate after touch down.

Footnote

¹ https://assets.publishing.service.gov.uk/media/629f53c1d3bf7f036a31c70a/Grumman_AA-5_G-BBSA_07-22.pdf and https://assets.publishing.service.gov.uk/media/629f5bbf8fa8f5039617322c/Rogers_Sky_Prince_G-CJZU_07-22.pdf [both accessed October 2022].

ACCIDENT

Aircraft Type and Registration:	Lancair 320, G-PJMT	
No & Type of Engines:	1 Lycoming IO-320-D1B piston engine	
Year of Manufacture:	1998 (Serial no: PFA 191-12348)	
Date & Time (UTC):	7 October 2022 at 1025 hrs	
Location:	Little Snoring Airfield, Norfolk	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Shock loading to engine, front caster wheel detached, destroyed propeller, scratching to starboard flap and wingtip	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	45 years	
Commander's Flying Experience:	2,964 hours (of which 17 were on type) Last 90 days - 30 hours Last 28 days - 3 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquires made by the AAIB	

Synopsis

During pre-landing checks the pilot observed that the right main landing gear had not locked down. Despite the use of emergency procedures, it remained retracted, and the pilot landed the aircraft on the nose and left landing gear. As the aircraft slowed, it slewed off the runway and sustained damage to the wing tip, propeller and nose landing gear. The pilot and passenger were uninjured. Examination of the aircraft found the right landing gear shock absorber had discharged and prevented the strut from extending as its wheel left the ground. In this condition the tyre caught on the edge of the wheel bay and prevented the gear from lowering.

History of the flight

The aircraft was completing an uneventful flight and was being configured for landing during approach to Little Snoring Airfield. The pilot selected landing gear down and during his prelanding checks saw that only two of the three green down-and-locked indicator lights were illuminated. The right main landing gear was not indicating down and locked. The in-built filament test confirmed that it was not just an indication problem, so the pilot recycled the landing gear up and down. As before, the right main landing gear did not indicate down and locked. He requested a visual check via his radio to a nearby aircraft which reported that the right landing gear had not lowered. The pilot attempted several high energy

manoeuvres to free the gear but to no avail. He also used the emergency lowering feature to release pressure in the hydraulic system and repeated the high energy manoeuvres. The right main gear did not move throughout.

He briefed his passenger on the situation and that he would be carrying out a landing with the left main and nose landing gear locked down only. He made a stable approach and landed and used the right aileron to hold the wing off the ground during the landing rollout and maintained directional control using differential braking. Eventually, as the aircraft slowed, it slewed off the paved surface. The nose gear collapsed as it entered a rut at the edge of a field alongside (Figure 1). He made the aircraft safe and vacated the cockpit. The pilot and passenger were uninjured.



Figure 1

Aircraft accident site

Aircraft examination and cause

The aircraft was fitted with tricycle landing gear with hydraulic extension and retraction. Fairings are attached to the landing gear struts to ensure an aerodynamic surface on the underside of the wing when the gear is retracted. The main landing gear lifts and folds inwards towards the fuselage. Figure 2 shows the general arrangement of the main landing gear assembly.

During the lifting process as the aircraft was recovered, the right main gear lowered of its own accord. Later examination by the aircraft maintenance organisation found the right main air-shock absorber was discharged. This had resulted in the landing gear strut articulated link not fully extending as the weight came off the wheel after takeoff. In this position the tyre had caught on the edge of the wheel well and prevented the gear from lowering (Figure 3). With the tyre impinging on the edge of the wheel well, the hydraulic actuator does not have a mechanical advantage and could not overcome the restriction.



Figure 2
Main landing gear general arrangement

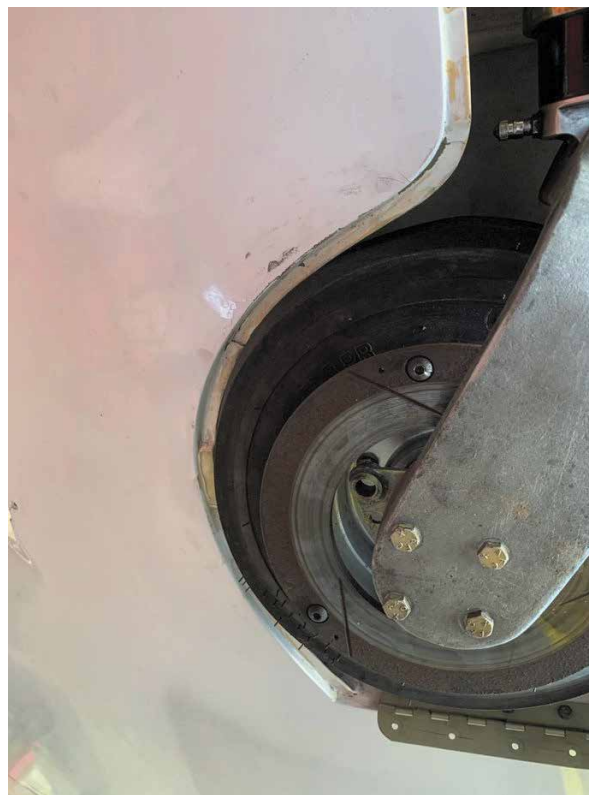


Figure 3
Landing gear tyre and wheel well impingement (fairings removed)

Discussion

Further examination found the left main landing gear shock absorber was also partially discharged, although to a lesser extent. When the pilot did his pre-flight checks the discharged state of both shock absorbers caused minimal difference between the height above ground of each wing tip, so went unnoticed. The cause of the discharged condition of the shock absorbers is not known but the pilot is of the opinion they gradually discharged over time and therefore had not drawn attention to the problem.

ACCIDENT

Aircraft Type and Registration:	Nord NC856A, G-CGWR	
No & Type of Engines:	1 Snecma Regnier 4L08 piston engine	
Year of Manufacture:	1955 (Serial no: 54)	
Date & Time (UTC):	23 September 2022 at 1625 hrs	
Location:	Field near Spanhoe Airfield, Laxton, Northamptonshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Aircraft caught fire and was destroyed	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	54 years	
Commander's Flying Experience:	1,175 hours (of which 23 were on type) Last 90 days - 27 hours Last 28 days - 13 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Following a routine takeoff and initial climb the engine misfired and suddenly lost power. Smelling fuel, the pilot immediately executed a successful emergency landing stopping just off the runway and within the airfield boundary. As the aircraft came to a halt there was a flash fire on the port side of the aircraft and the pilot evacuated the aircraft without injury. Despite the efforts of airport staff with fire extinguishers, the aircraft was rapidly destroyed by the fire.



Figure 1

G-CGWR post-fire damage (used with permission)

All the pre-takeoff engine oil, temperature and power checks had been normal. On previous flights fuel consumption and performance were also as expected. There had been no disturbance of the engine or fuel system since the last annual Permit to Fly checks were undertaken. Whilst the investigation could not definitively establish the cause of the fire it is likely a failure of the fuel system in the engine bay enabled Avgas to be ignited on hot engine surfaces, causing a fuel fed fire which then rapidly consumed the aircraft.

ACCIDENT

Aircraft Type and Registration:	Piper PA-34-200T, G-RVNO	
No & Type of Engines:	2 Teledyne Continental TSIO-360-EB1B piston engines	
Year of Manufacture:	1975 (Serial no: 34-7570303)	
Date & Time (UTC):	14 June 2022 at 1610 hrs	
Location:	Hawarden Airport, Chester	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Right main landing gear collapse, distortion to wing and fuselage	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	33 years	
Commander's Flying Experience:	280 hours (of which 52 were on type) Last 90 days - 80 hours Last 28 days - 45 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and enquiries made by the AAIB	

Synopsis

The pilot lost directional control following a bounced landing, which resulted in the aircraft leaving the side of the runway and the collapse of the right landing gear.

History of the flight

The aircraft made a normal approach to Runway 04 at Hawarden with a crosswind of 14 kt. The pilot reduced the power and flared the aircraft to land, but on touchdown, bounced and eventually landed about 30 m further along the runway. The pilot reported that the aircraft then '*violently swung to the right*'. He made a left rudder input to correct this movement but realised the aircraft was about to leave the runway and, therefore, increased the left rudder input '*to guide it away from the lights and signs*'. At this point, the pilot '*cut the mixtures and props and fuel*'. Soon afterwards, the right landing gear leg collapsed, and the aircraft came to a stop. The aircraft sustained damage to the landing gear, wing, and fuselage. The pilot was uninjured.

Pilot's comments

The pilot reported that he was content that the aircraft was correctly configured for landing and described the approach as good, until about 50 ft agl, when everything appeared to be '*a bit fast*'. With hindsight he felt that he should have considered a go-around. He believed

that his lack of crosswind technique caused the accident, and a more coordinated use of the ailerons and rudder would have led to a more controlled and directionally stable landing.

Aircraft examination

The aircraft operator recovered and examined the aircraft after the accident. The right main landing gear side brace had failed in overload and allowed the landing gear to collapse. A picture of the aircraft taken immediately after the accident, showed the left propeller feathered. It is likely this was done inadvertently whilst the pilot moved the power levers during the accident sequence.

SERIOUS INCIDENT

Aircraft Type and Registration:	Zenair CH 601HD, G-BVVM	
No & Type of Engines:	1 Rotax 912-UL piston engine	
Year of Manufacture:	1996 (Serial no: PFA 162-12539)	
Date & Time (UTC):	29 July 2022 at 1700 hrs	
Location:	Perranporth Airfield, Cornwall	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	None	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	38 years	
Commander's Flying Experience:	455 hours (of which 322 were on type) Last 90 days - 48 hours Last 28 days - 11 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Shortly after takeoff, the aircraft rolled to the right and required greater than normal control input to maintain a climb. The pilot declared a PAN. A joining aircraft acknowledged the call and remained clear. The pilot observed that the right-wing locker door had opened and was protruding up at an approximate angle of 45° to the top surface of the wing, disrupting the airflow (Figure 1). They were able to control the aircraft, using significant left rudder, and positioned the aircraft to land. The aircraft landed without further incident.

Pilot's comments

The pilot commented that they were aware that a parachute aircraft was inbound to overhead the airfield and had rushed to prepare the aircraft for departure. In the end they decided to wait for the parachutists to land before departing but had forgotten to check the wing locker was securely closed.

After reflecting on the circumstances that led up to the event the pilot made the following suggestions to prevent a similar occurrence:

- Do not rush to expedite takeoff, the self-imposed time pressure is likely to have been the root cause of not checking the wing locker.
- Add 'wing lockers' to the '*hatches and harness*' check to the pre-flight check list.



Figure 1

Open wing baggage lockers on a similar aircraft
(Image used with permission)

AAIB comment

Taking the time to ensure all hatches and external panels are properly secure before departure is equally important on all types of aircraft. In this case, once airborne, the pilot rightly focused on maintaining control of the aircraft to ensure a safe landing.

ACCIDENT

Aircraft Type and Registration:	Grob G103 Twin Astir II, G-CKRH
No & Type of Engines:	No engines
Year of Manufacture:	1981 (Serial no: 3596)
Date & Time (UTC):	15 October 2022 at 1217 hrs
Location:	Seighford Airfield, Staffordshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - 1 (Serious) Passengers - N/A
Nature of Damage:	Fin detached from fuselage, damage to nose and forward cockpit
Commander's Licence:	Sailplane Pilot Licence
Commander's Age:	60 years
Commander's Flying Experience:	181 hours (of which 45 were on type) Last 90 days - 9 hours Last 28 days - 1 hour
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

Shortly after the pilot abandoned a winch launch he reported suffering an impairment which prevented him from controlling the glider's flight path. The glider struck the ground in a series of heavy impacts, in which the pilot sustained a serious back injury and the glider was significantly damaged. The cause of the pilot's impairment was not established.

History of the flight

The pilot was flying the glider solo from the front seat. The winch launch began normally with the glider pitching into a nose-up attitude, however at approximately 200 ft agl the pilot heard a "loud bang" and assumed that the winch cable's weak link had broken. He lowered the nose and, observing dust from the cockpit floor rising into his vision due to the negative 'g', considered that his pitch-down was excessive. The winch cable released from the belly hook. The pilot recalled then becoming impaired, although he remained conscious throughout the remainder of the flight. The glider was observed to oscillate in pitch, with the airbrakes retracted, before it then struck the ground in a level attitude. The glider's speed was such that it then bounced into the air, followed by two further ground impacts during which the fin and tailplane broke away from the fuselage at the base of the fin. The pilot was seriously injured, sustaining compression fractures to two vertebrae in his spine.

Aircraft information

The glider and winch equipment were examined after the accident. The glider's flying controls were observed to have been properly connected prior to the accident. The glider had recently been refurbished with new energy-absorbing seat cushions and seat harnesses, which remained intact. The winch cable assembly was in good condition with the correct strength weak link fitted and this was intact, indicating that the cable had either back-released¹ from the belly hook or been released by the pilot.

Other information

The pilot reported falling ill with flu-like symptoms on 7 October, remaining unwell for the next four days. He felt well on the day of the accident, without any loss of balance or dizziness. The accident flight was his first since his recent illness. He reported that the paramedics who provided treatment at the accident site noted that his blood oxygen level was low, and he was given breathing oxygen for the next two days during his initial recovery in hospital.

The CAA Medical Department commented to the AAIB that the short time duration and low level of negative 'g' during the abandoned winch launch was insufficient to cause incapacitation. As the pilot had not reported any loss of balance or dizziness, it was considered unlikely that his vestibular system had been affected by his recent illness. The cause of the pilot's impairment during the accident flight was not established.

Analysis

The accident occurred because the pilot became briefly impaired following his decision to abandon the winch launch. The impairment prevented the pilot from successfully controlling the glider's pitch attitude and speed, or from opening the airbrakes, leading to a series of heavy ground impacts which caused a serious back injury. The reason for the pilot's brief impairment was not established.

The noise from the winch cable may have been caused by the cable's ring moving under load within the jaw of the hook as the glider climbed through the wind gradient during the launch, as no abnormality was identified in the cable assembly.

Conclusion

The accident occurred after the pilot became briefly impaired following abandonment of a winch launch. The impairment prevented him from controlling the glider's flight path, leading to a series of heavy ground impacts. The reason for the impairment was not established.

Footnote

¹ Glider winch launch hooks are fitted with a back-release safety mechanism to ensure the release of a winch cable from the glider, without any pilot command, when a significant rearward load acts on the cable. In the event of an abandoned winch launch, aerodynamic drag acting on the cable assembly is sufficient to cause the cable to back-release from the glider.

SERIOUS INCIDENT

Aircraft Type and Registration:	DJI Inspire 2	
No & Type of Engines:	4 Electric Motors	
Year of Manufacture:	2020 (Serial no: 0003)	
Date & Time (UTC):	19 July 2022 at 1030 hrs	
Location:	Morlais Quarry, Mid Glamorgan	
Type of Flight:	Commercial Operations (UAS)	
Persons on Board:	Crew - None	Passengers - None
Injuries:	Crew - N/A	Passengers - N/A
Nature of Damage:	None	
Commander's Licence:	Other	
Commander's Age:	53 years	
Commander's Flying Experience:	6,000 hours (of which 2,000 were on type) Last 90 days - 12 hours Last 28 days - 6 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

Synopsis

During a film shoot involving a large group of actors performing in close proximity to an Unmanned Aircraft (UA), an actor deviated from the briefed path and ran into one of the UA's propellers. The propeller struck him on the back of the neck, but the injuries were superficial.

The CAA's CAP722 document provides guidance for operating Unmanned Aircraft Systems (UAS) in UK airspace but is ambiguous about the UAS operator gaining explicit consent from involved third parties for operating in close proximity to a UA. The CAA has taken action to review and amend the guidance.

The UAS operator and film director have put additional safety measures in place to prevent a recurrence.

History of the flight

Prior to the start of the day's filming, the remote pilot gathered the operating crew, film crew, production staff and actors together to conduct a safety briefing. After two "shoots" were completed successfully there was a quick transition to a third shoot. The task was to conduct a front tracking shot of actors and horses running past the UA which was to hover at low head height. The UA was to be flown slowly backwards as the group of actors ran towards it, before the group split into two streams to avoid the aircraft. The remote pilot plus

the payload operator and observer positioned the UA where its presence was acknowledged by the assistant director. The remote pilot had decided there would be no sudden or erratic movement of the UA because he believed this would enable the actors to see the UA as it flew slowly backwards. As filming started, up to 50 actors and horses appeared on scene and ran towards the UA before splitting into the two streams around the aircraft. As one of the actors moved to the side and drew level with the UA, he suddenly cut across its flight path towards the other stream of actors. The actor ran into one of the UA's propellers which hit the back of his neck causing superficial injuries. The UA was immediately flown out of harm's way and filming was stopped while the actor received medical treatment.

CAA CAP722 guidance¹

The CAA guidance for this type of activity was, at the time, contained in CAP722 (edition 8) Section 2.1.3 '*Protection of 3rd parties*', which provides guidance on the measures to be taken whilst flying UA close to third parties, particularly should a loss of control of the aircraft occur. Section 2.1.3.1 defines a further third-party category of an 'involved person' as follows:

'A person may be considered involved if they:

- *have given explicit consent to the UAS operator or to the remote pilot to be part of the UAS operation (even indirectly as a spectator or just accepting to be overflown by the UAS); and*
- *have received from the UAS operator or from the remote pilot clear instructions and safety precautions to follow in case the UAS exhibits any unplanned behaviour. Such persons could include building-site or other industrial workers, film and TV production staff and any other pre-briefed, nominated individuals with an essential task to perform in relation to the event.*

In principle, this means that an involved person must:

- *be able to decide whether or not to participate in the UAS operation;*
- *broadly understand the risks involved;*
- *have reasonable safeguards introduced for them, introduced by the site manager, the UAS operator or the remote pilot during any UAS operation; and*
- *be expected to follow the directions and safety precautions provided.*

Footnote

¹ The CAA has published a new Acceptable Means of Compliance and Guidance Material (AMC&GM) for Regulation (EU) 2019/947 as retained (and amended in UK domestic law) Under the European (Withdrawal) Act 2018. Its publication aims to provide the regulated community with greater clarity on what is required of them in meeting the regulations and gives this guidance a legal basis. The CAP 722 series documents now reflect this AMC&GM.

The UAS operator or remote pilot should check by asking simple questions to make sure that the directions and safety precautions have been properly understood.

In order to be considered an 'involved person', each person should be asked for their explicit permission and be made aware of the possible risk(s).'

Operator's risk assessment

Whilst the UAS operator's risk assessment documented many of the hazards and risks that were likely to exist during filming, the possibility of actors diverting from agreed routes and running into the path of the UA was unexpected and, therefore, had not been considered. One of the factors in the incident was the speed at which filming transitioned from one shoot to the next which did not allow sufficient time to land the aircraft and fit safety bumpers to the propeller rotors. This would have prevented the blades from making contact with the actors or the horses. Given that each film scene was potentially different to the previous scene, the operator's safety brief could only cover the generic safety risks from flying the UA in close proximity to people during filming.

Safety Actions

How a UAS operator obtains explicit consent or permission from a large group of involved persons, 50 plus in this event, is not defined in CAP722. Nor does it appear practicable to ask each involved person simple questions to check their understanding when such a large group is involved.

As a result of this serious incident the following Safety Actions have been taken:

The CAA has taken action to review and amend CAP722 guidance to clarify the definition of an uninvolved person.²

The UAS operator and film director have agreed to do complete walk throughs of each scene with the actors and film crew before filming starts. More time has now been allocated for set up prior to close proximity shots so those involved can understand the location and flight path of the UA. This also allows time to fit the propeller bumpers when necessary.

The operator has updated their risk assessment to include guidance and mitigation measures for future work of this nature.

Footnote

² This Safety Action will be superseded by the publication of the new AMC&GM.

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: December 2022 - January 2023

- 18 Aug 2022** **MA Hanger 9 Ultra Stick** Wymondham, Norfolk
- The remote pilot was flying the model aircraft with an instructor when it veered off course, losing connection to the controller. Control could not be regained, and the aircraft struck the ground approximately 1.5 m from another person. There were no injuries.
- 9 Oct 2022** **DJI M300 RTK** Hastings, East Sussex
- Whilst operating the 6.3 kg UA in a built-up area at night, a loud crack was heard, and the UA began to spin to the ground from a height of 9 m. The operator examined the wreckage after the event and suspected that a rotor blade had failed in flight.
- 12 Nov 2022** **DJI Phantom 4 RTK** Fox Milne, Buckinghamshire
- During descent to land the UA inverted and landed upside down causing damage to the camera and frame.
- 19 Dec 2022** **DJI Mavic 2 Enterprise Advanced** Chertsey, Surrey
- The UA was flying over a patch of fenced-off woodland 40 - 50 m away from and in full view of the remote pilot when there was a 'Magnetic Interference' warning on the controller. The pilot attempted to return the UA back to his location but it descended rapidly into the woodland.
- 25 Dec 2022** **DJI M300 Matrice RTK** Halesowen, West Midlands
- The UA was returning to a secured landing site following a flight at night in windy conditions. The remote pilot misjudged the proximity of a tree to the UA's flightpath and, having struck a branch of the tree, the UA fell to the ground and suffered substantial damage.
- 6 Jan 2023** **DJI** Spilsby, Lincolnshire
- During approach to land, the UA was blown off course by a gust of wind and struck a tree.
- 6 Jan 2023** **DJI Mavic** Wakefield, West Yorkshire
- In a controlled area with no uninjured persons nearby, the UA was launched before the system had acquired full satellite connectivity and hence had no GPS stabilisation. The pilot was unable to control the UA which suffered damage when it drifted into a 4 ft post near the takeoff point.

Record-only UAS investigations reviewed: December 2022 - January 2023 cont

- 10 Jan 2023** **DJI Matrice 210 RTK** Lythe, Northumberland
During a training flight, the remote pilot lost control of the UA, which hit a metal cage.
- 11 Jan 2023** **DJI Mavic 2** Near Bridgwater, Somerset
Enterprise Dual
The control link to the UA was lost. It continued to fly and was subsequently lost.
- 17 Jan 2023** **Evolve Skymantis** Eastbourne, East Sussex
Shortly after takeoff, the pilot observed a momentary 'Yaw Alignment' error displayed on the controller. The pilot was subsequently unable to control the UA which drifted into a nearby wall, fell to the ground and suffered extensive 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).

BULLETIN CORRECTION

Aircraft Type and Registration:	Jabiru UL-430, G-RUFS
Date & Time (UTC):	13 August 2022 at 1350 hrs
Location:	Lower Upham Airfield, Wiltshire
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB

AAIB Bulletin No 12/2022, page 86 refers

Following publication it was noted that the incorrect county was included in the report header. The accident occurred at Lower Upham Airfield in Wiltshire, not Hampshire.

The online report was corrected on 9 February 2023.

BULLETIN ADDENDUM

Aircraft Type and Registration:	G-CBIR
Date & Time (UTC):	10 August 2022 at 1620 hrs
Location:	Causeway Airfield, County Londonderry
Information Source:	Aircraft Accident Report Form

AAIB Bulletin No 1/2023, page 38 and 39 refer

Since publication the following additional information has become available.

On landing after a flight in the local area the student assumed the flight was complete, but a circuit was then flown. After touchdown from this circuit the instructor applied takeoff power and the aircraft became airborne again.

Shortly after this takeoff the instructor closed the throttle and may have asked, “what are you going to do now?” or “what are you going to do if the engine fails?” The available evidence indicates that the speed at this point was between 50 and 55 kt and that the aircraft was between 100 ft and 200 ft above the ground. The stalling speed of the aircraft as loaded on this flight was reported to be approximately 44 kt. The student recalled that when the throttle was closed he felt that the aircraft had stalled and immediately pushed the stick forward. The aircraft landed heavily as described in Bulletin 1/2023, and the student required medical attention the following day.

The additional information indicates that it was not the original purpose of the flight to conduct circuits, that the intention to practice engine failures was not shared by both occupants, and that only one practice engine failure was conducted, not two as previously reported.

Where this information differs from that reported previously, it has not been established which is more accurate.

Comment

Whilst it is important to prepare students to cope with an unexpected loss of power, demonstrations or practice should be conducted when the aircraft has sufficient performance to enable a safe recovery. Bulletin 1/2023 records the instructor’s comments to this effect.

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

- | | |
|---|---|
| 1/2015 Airbus A319-131, G-EUOE
London Heathrow Airport
on 24 May 2013.
Published July 2015. | 1/2017 Hawker Hunter T7, G-BXFI
near Shoreham Airport
on 22 August 2015.
Published March 2017. |
| 2/2015 Boeing B787-8, ET-AOP
London Heathrow Airport
on 12 July 2013.
Published August 2015. | 1/2018 Sikorsky S-92A, G-WNSR
West Franklin wellhead platform,
North Sea
on 28 December 2016.
Published March 2018. |
| 3/2015 Eurocopter (Deutschland)
EC135 T2+, G-SPAO
Glasgow City Centre, Scotland
on 29 November 2013.
Published October 2015. | 2/2018 Boeing 737-86J, C-FWGH
Belfast International Airport
on 21 July 2017.
Published November 2018. |
| 1/2016 AS332 L2 Super Puma, G-WNSB
on approach to Sumburgh Airport
on 23 August 2013.
Published March 2016. | 1/2020 Piper PA-46-310P Malibu, N264DB
22 nm north-north-west of Guernsey
on 21 January 2019.
Published March 2020. |
| 2/2016 Saab 2000, G-LGNO
approximately 7 nm east of
Sumburgh Airport, Shetland
on 15 December 2014.
Published September 2016. | 1/2021 Airbus A321-211, G-POWN
London Gatwick Airport
on 26 February 2020.
Published May 2021. |

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