AAIB
Air Accidents Investigation Branch

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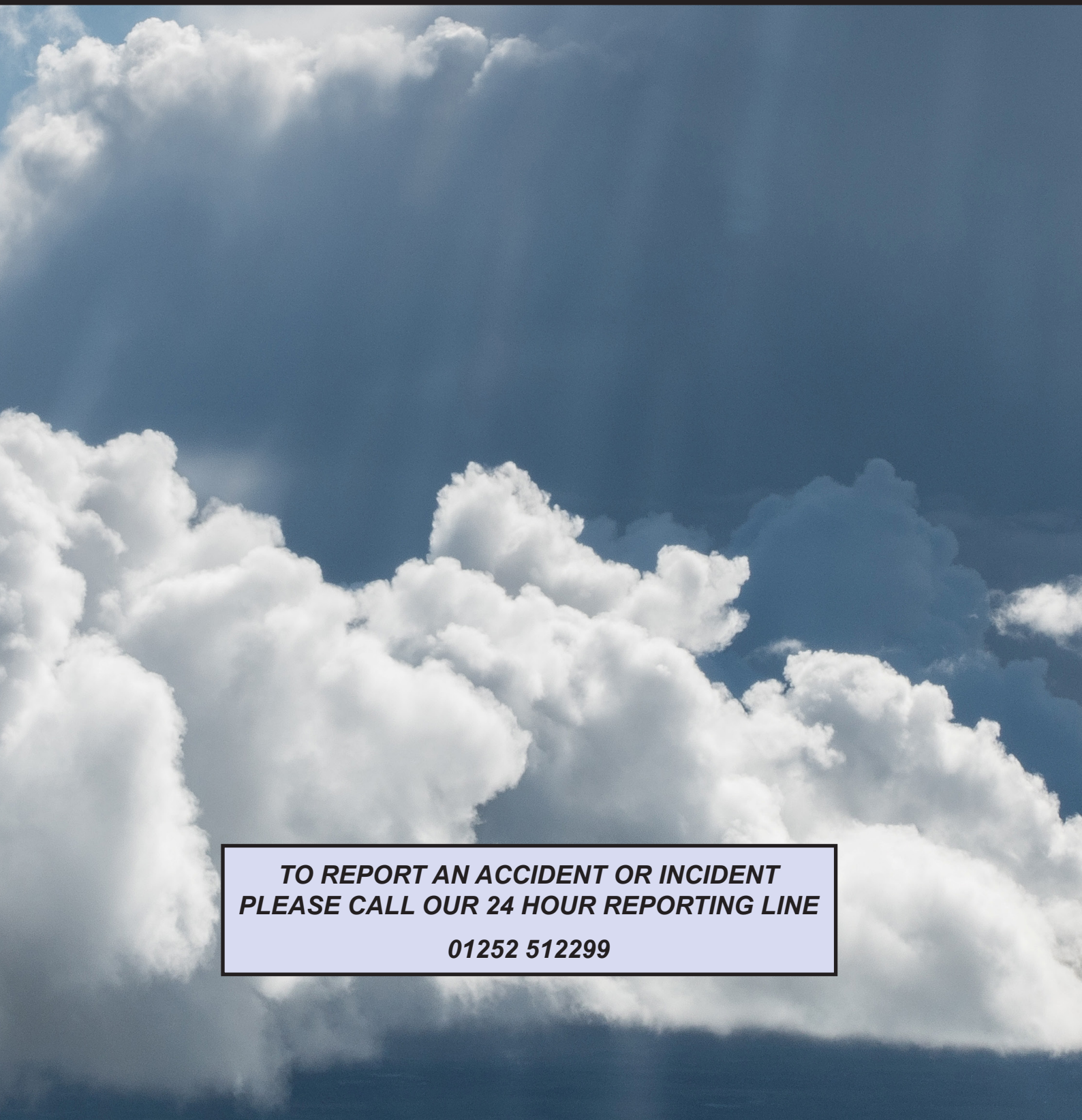

TO REPORT AN ACCIDENT OR INCIDENT PLEASE CALL OUR 24 HOUR REPORTING LINE

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AAIB CORRESPONDENCE INVESTIGATIONS Cont

MISCELLANEOUS

(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:	AW109SP Grand New, G-IWFC	
No & Type of Engines:	2 Pratt & Whitney Canada PW207C turboshaft engines	
Year of Manufacture:	2015 (Serial no: 22331)	
Date & Time (UTC):	27 November 2017 at 1530 hrs	
Location:	Sywell Aerodrome, Northamptonshire	
Type of Flight:	Private	
Persons on Board:	Crew - 3	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Impact damage to two rotor blades and engine cowl	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	45 years	
Commander's Flying Experience:	4,490 hours (of which 1,150 were on type) Last 90 days - 41 hours Last 28 days - 13 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

The pilot and an engineer had been performing flight maintenance checks that had been intermittently interrupted by heavy rain showers. Whilst performing a rotor blade check in the hover during a period of clear weather, the No 1 engine OIL HOT caption illuminated. After landing, a second engineer opened the engine cowl to conduct an inspection of the engine. Following this inspection, the helicopter took off again for a further maintenance check flight. During the flight, a small but unusual vibration was felt by the occupants. The pilot elected to return to land at the airfield, but during his approach a sudden very heavy vibration started. The pilot performed a run-on landing, with no further issues. Subsequently, the engine cowl was found to have contacted the main rotor blades due to it not having been correctly latched shut during the earlier inspection.

SERIOUS INCIDENT

Aircraft Type and Registration:	1) Boeing 737, 9H-BBJ 2) Embraer 145LR, G-CISK
No & Type of Engines:	1) 2 CFM 56-7 turbofan engines 2) 2 Rolls-Royce AE3007A1 turbofan engines
Year of Manufacture:	1) 2000 (Serial no: 30791) 2) 2002 (Serial no: 145570)
Date & Time (UTC):	10 January 2018 at 1238 hrs
Location:	Bristol Airport
Type of Flight:	1) Private 2) N/A
Persons on Board:	1) Crew - 6 Passengers - None 2) Crew - None Passengers - N/A
Injuries:	1) Crew - None Passengers - None 2) Crew - N/A Passengers - N/A
Nature of Damage:	1) Minor damage to left winglet 2) Damage to tail section
Commander's Licence:	1) Airline Transport Pilot Licence 2) N/A
Commander's Age:	1) 54 years 2) N/A
Commander's Flying Experience:	1) 11,700 hours (of which 5,200 were on type) Last 90 days - 111 hours Last 28 days - 55 hours 2) N/A
Information Source:	Aircraft Accident Report Form submitted by the pilot and investigation reports from the operator and airport authority

Synopsis

Whilst taxiing under guidance from a marshaller and wingman, the winglet of a Boeing 737 struck the tail of a parked Embraer 145. The airport authority and operator conducted separate investigations which identified several contributory factors that had combined to cause the accident.

History of the flight

A Boeing 737, registration 9H-BBJ, took off from Luton Airport at 1211 hrs for a positioning flight with six crew on board and no passengers; it landed at Bristol Airport approximately 30 minutes later. The aircraft commander was the handling pilot and the co-pilot was monitoring during the sector. After landing, the aircraft taxied towards the Southern parking area. The operator had subcontracted ground handling to an external company

who provided a marshalling service. The commander reported that after crossing the Juliet X-Ray holding point (Figure 1), the aircraft was met by a wingman who stood on the left of the aircraft behind the tail of a parked Embraer 145 and a marshaller located just in front of the grass verge where the aircraft was to be parked (Figure 2). The marshaller then signalled to the flight crew to continue to move forward.

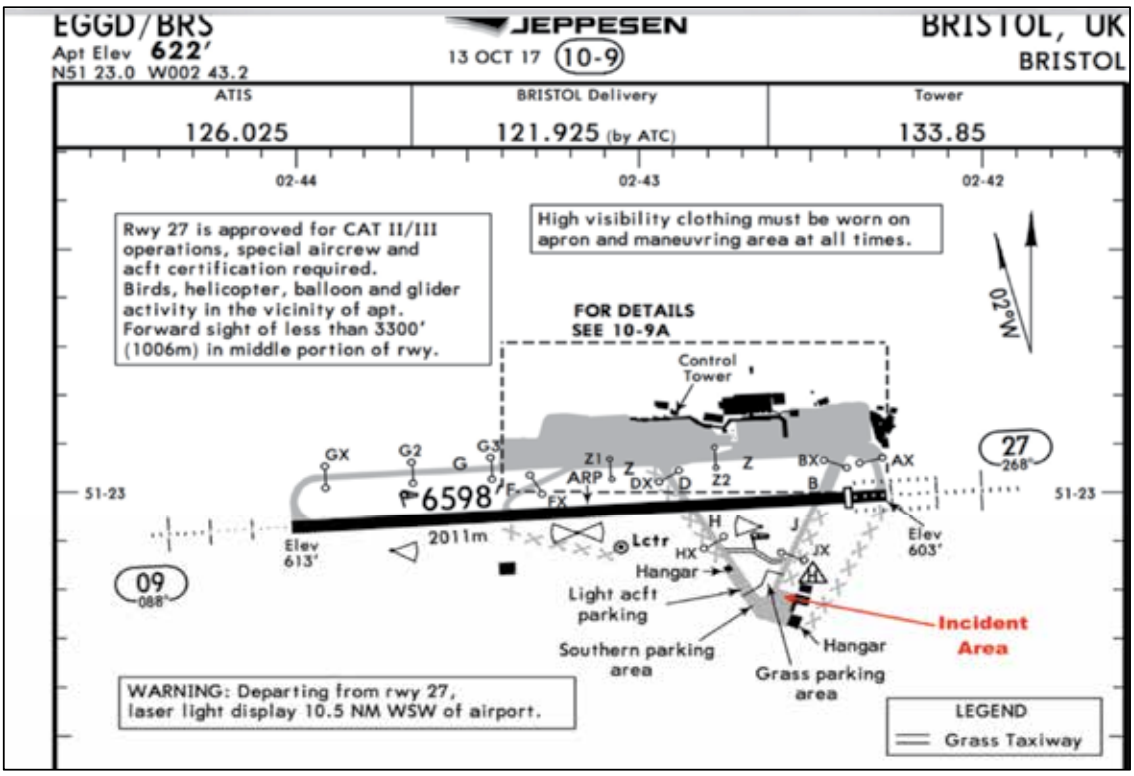

Figure 1

Layout of the airport showing the JX hold point and the Southern parking area

The wingman suddenly signalled for the aircraft to stop; however, braking the aircraft to a standstill took a few seconds, by which time the left winglet of the aircraft had made contact with the rear strobe housing of the Embraer 145, registration G-CISK, which was parked nose-in to the hangers on the left of the taxiway. Following the impact, the marshaller in front signalled to the flight crew to resume taxiing until the aircraft was parked at the Southern parking area.

Accident location

Figure 2

Image showing the taxiway and a parked aircraft in the same position as the accident aircraft in front of the hangar

Recorded data

The accident was recorded by one of the airport's CCTV cameras located on the southern corner of the large silver building shown in Figure 2, looking north towards the taxiway.

Human factors

The operator's internal investigation identified the following issues:

- It was highly possible that the line of sight between the marshaller in front and to the right side of the taxiing aircraft and the wingman on the left side, was not clear at all times;
- A lack of situational awareness by the wingman;
- Calculations regarding clearance between the taxiing Boeing 737 and the parked Embraer 145 carried out by the ground handling organisation were not correct;
- It was not confirmed whether the Embraer 145 aircraft was correctly parked in position;

- Based on the CCTV footage it was observed that there was no aviation orange cone placed at the rear tip of the parked Embraer 145 to indicate caution to the marshaller;
- It was not confirmed whether the marshaller and the wingman were current in their training.

The airport authority identified the following factors in their investigation:

- The marshaller initially continued to signal the aircraft forward despite the wingman's signal to stop;
- The wingman's position under the tail of the parked aircraft did not allow him to identify the lack of clearance until it was too late to avoid a collision;
- The aircraft was being taxied too fast given the pilot's unfamiliarity with the airport;
- The Embraer 145 was parked short of the designated stop, placing it closer to the taxiway;
- The marshaller was located too far away from the aircraft under his control on a different taxiway to the one the aircraft was moving down.

Analysis

The independent investigations conducted by the operator and the airport authority highlighted a number of contributory factors which led to the collision. It is likely that these factors combined to reduce the normal margin for error, such that the taxiing aircraft ended up on a collision course with the parked aircraft and the lack of clearance was not identified in sufficient time to prevent a collision.

Conclusion

A number of factors, which individually may not have been significant, combined to position the taxiing Boeing 737 on a collision course with a parked Embraer 145 and prevented the lack of clearance between the aircraft from being identified early enough to avoid an accident. The organisations involved have identified where the process can be improved to help prevent reoccurrence.

ACCIDENT

Aircraft Type and Registration:	Boeing 737-8AS, EI-DCH	
No & Type of Engines:	2 CFM CFM56-7B26 turbojet engines	
Year of Manufacture:	2004 (Serial no: 33566)	
Date & Time (UTC):	2 December 2017 at 1643 hrs	
Location:	London Stansted Airport	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 6	Passengers - None
Injuries:	Crew - 1 (Serious)	Passengers - N/A
Nature of Damage:	None	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	32 years	
Commander's Flying Experience:	5,500 hours (of which 5,300 were on type) Last 90 days - 236 hours Last 28 days - 67 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

A catering cart became dislodged from its stowage in the aft galley when the aircraft landed. It travelled down the centre aisle and seriously injured one of the cabin crew, who was sitting in an aft-facing jumpseat by the forward left door.

History of the flight

The aircraft was being positioned without passengers from Cologne Airport to London Stansted Airport by a crew that consisted of two pilots and four cabin crew. Earlier that day they had operated a passenger flight from Stansted to Eindhoven on the same aircraft but, due to poor weather, they had diverted to Cologne where the passengers had disembarked.

The commander expected the cabin crew to occupy their assigned jumpseats in the cabin for the takeoff but, during the flight, he allowed the Number 2 crew member (No 2) to move to a jumpseat in the flight deck, to observe the descent and landing. He believed the cabin would be secured for landing in accordance with the aircraft operator's procedure for flights with three cabin crew and that the No 1, the No 3 and the No 4 would then sit in their assigned jumpseats, in accordance with the operator's guidance (see *Organisational information*).

With the flight deck door closed, the passenger address system was used to inform the cabin crew that 10 minutes remained before landing and the No 1 subsequently advised

the pilots that the cabin was secure. Following a normal touchdown, the brakes were applied and the commander then heard a scream from the cabin, so he slowed the aircraft, and the No 2 left the flight deck to investigate and assist. Soon after this the pilots were told that one of the No 3's legs might be fractured and, therefore, they asked ATC to arrange for medical assistance to attend the aircraft on arrival at its parking stand.

After the aircraft had been shut down, the commander found that the No 3, whose assigned jumpseat is on the right side of the aft galley, was lying on the cabin floor, blocking the main access door at the front of the cabin. During the landing, a catering cart had dislodged from its stowage in the aft galley and had travelled down the aisle until it struck the No 3, who was sitting in the aft-facing jumpseat assigned to the No 4, at the front of the cabin on the left side.

Having seen the cart heading towards him, the No 3 had tried to protect himself by raising his knees towards his chest but when the cart struck him it fractured his left femur and caused a minor hand injury. Being unaware his leg was broken, he had attempted to stand up but collapsed onto the floor.

Because the main door was blocked, the Rescue and Fire Fighting Service (RFFS) personnel were delayed from providing first aid for several minutes. Later, after liaison with the local ambulance service, the RFFS disembarked the casualty on a stretcher and he was taken temporarily to the aircraft operator's offices before being transported to a local hospital.

An engineering check found no fault with the catering cart's latching system.

Cabin crew actions

After the flight, the cabin crew reported that the No 2 sat on the forward left jumpseat for the takeoff but the other crew members sat in passenger seats, believing this to be allowed for a flight without passengers.

During the flight, the No 3 had moved the catering carts in the aft galley in order to place new bar seals on them. The No 1 reported that, after hearing that 10 minutes remained until landing, she had checked the security of these carts and believed they were all correctly stowed. She then moved forward and opened the flight deck door for a short time, to inform the pilots the cabin was secure for landing, despite being aware that the No 3 was still standing in the aft galley. After the flight, it emerged that no pre-landing security checks were actioned in cabin areas for which the No 2 was normally responsible, because procedures for flights with only three cabin crew were not used when the No 2 was in the flight deck.

A few minutes before landing, the No 3 moved forward to the front left side of the cabin and sat on the inboard jumpseat, near the main access door, while the No 1 and the No 4 sat in the front row of passenger seats. The No 3 stated that the aft catering carts had appeared to be secure when he left the aft galley to move forward.

Organisational information

The Aircraft Operator's Manual Part A, '*Safety and Emergency Procedures*' (SEP), states that all cabin crew are to be in their seats before the No 1 informs the flight deck, using the interphone system, that the cabin is secure. According to the SEP manual, the cabin crew are assigned aft-facing seats as follows: for the No 1 and the No 4, two jumpseats adjacent to the front left door, for the No 2, a jumpseat near the aft left door, and for the No 3, a jumpseat near the aft right door. In addition, the manual states that cabin crew must sit in their assigned seats for takeoff and landing and also that cabin secure checks are to be actioned during positioning flights.

Aircraft Operator's Report

An internal investigation by the aircraft operator assessed that deceleration forces during the landing were normal and it was not possible to explain how the catering cart unlatched. However, had the No 3 cabin crew been seated in his assigned jumpseat in the aft galley, he might have seen the catering cart become insecure and been able to prevent it from moving.

The cabin crew participated in an accident debrief, during which they were reminded of the seating requirements for positioning flights and the cabin security procedures. Following this debrief the No 1 cabin crew received additional training, and the aircraft operator included the procedures for positioning flights in its recurrent training sessions for all cabin crew.

The aircraft operator has circulated a memorandum to all its crews reminding them of the cabin procedures which are to be followed during a positioning flight.

SERIOUS INCIDENT

Aircraft Type and Registration:	DHC-8-402 Dash 8, G-JECI	
No & Type of Engines:	2 Pratt & Whitney Canada PW150A turboprop engines	
Year of Manufacture:	2005 (Serial no: 4105)	
Date & Time (UTC):	5 August 2017 at 1115 hrs	
Location:	En route Inverness to Jersey, diverted to Manchester	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 4	Passengers - 43
Injuries:	Crew - 1 (Minor)	Passengers - None
Nature of Damage:	None reported	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	29 years	
Commander's Flying Experience:	5,752 hours (of which 5,593 were on type) Last 90 days - 209 hours Last 28 days - 64 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further information from the operator	

Synopsis

While in the cruise at FL250, the co-pilot suffered a seizure during which he made inadvertent rudder inputs which caused the autopilot (AP) to disconnect. The aircraft commander, who was the pilot monitoring (PM), was able to control the aircraft while the Senior Cabin Crew Member (SCCM) attempted to restrain the co-pilot. A diversion was made to Manchester Airport where a safe landing was carried out and where the co-pilot received prompt medical assistance.

History of the flight

The aircraft was en route from Inverness Airport (INV) to Jersey Airport (JER) and was established in the cruise at Flight Level (FL) 250. The workload was light and while the aircraft commander, who was the PM, was routinely looking around the flight deck, he noticed that the co-pilot was shaking, his hands and arms were tensed and that he was leaning back in his seat with his head and eyes looking up towards the ceiling. The PM called the co-pilot's name three times but there was no response. On realising that the co-pilot was incapacitated, the PM tried to make the public address (PA) "*This is the Captain, Cabin Crew on Station*" but he selected the intercom inadvertently and not the PA system. The SCCM took the subsequent intercom call and, although she was towards the rear of the cabin conducting service at the time, went immediately to the flight deck. While making her way forward, the aircraft slewed and she had to hold on to a seat to stop

falling over. At the same time, cabin attendant three (CA3) fell over at the rear of the cabin and was helped to her feet by a passenger after which she carried on with her duties.

The PM, who had taken control and was then the PF informed the SCCM that the co-pilot was having a seizure. The SCCM could see that the co-pilot was grey in the face, had blue lips and a rigid body but was still breathing. She moved his seat back, took his legs away from the controls and tried to tuck his arms inside the harness but it was impractical as his arms were so stiff. It also proved impossible to wind the rudder pedals away from the co-pilot using the adjustment handle.

At that point, the co-pilot had a second, more violent seizure. It was physically demanding trying to restrain him as his limbs were flailing and going stiff. The seizure resulted in multiple un-demanded rudder pedal inputs and the AP disconnected. The PF counteracted these inputs but was conscious about applying too large an input on the opposite rudder in case the pressure released suddenly causing a loss of control through control input reversal.

The PF declared a PAN with Air Traffic Control (ATC) and requested an immediate diversion to Manchester Airport (MAN), which was the nearest appropriate aerodrome. ATC offered a direct routing but the PF elected to execute a Standard Terminal Arrival Routing (STAR) which would keep his workload at manageable levels and ensure a stabilised final approach. However, he reported having difficulty entering the required data into the Flight Management System (FMS) due to the distractions in the flight deck.

Having carried out their initial actions, and with the approach to MAN in progress, the PF and SCCM discussed their concerns about the possibility of another violent seizure during the latter stages of the flight. They considered trying to remove the co-pilot from the flight deck but this option was quickly discounted as physically impractical. The SCCM was having continued difficulty restraining the co-pilot, so the PF asked if she would like further assistance from an 'Able-Bodied Passenger' (ABP). They followed this course of action, the CA3 selected an ABP and he was briefed to remain at the flight deck door and provide the SCCM with assistance if necessary. When the PF deemed it would be necessary to do so, he would instruct the ABP to go to the nearest available seat in the cabin.

During the final approach, the co-pilot's condition seemed to improve slightly and he recognised MAN ahead of him. However, he was clearly still unwell and the SCCM continued to restrain him. The final approach and landing were carried out without any further incident, and MAN ATC provided a 'Follow Me' vehicle to assist in the taxi route to a remote Stand where Paramedics boarded the aircraft and took the co-pilot to hospital.

The CA3 sustained minor injuries and bruising due to her fall. The co-pilot was released from hospital after three hours. He had not previously shown any symptoms which might have alerted him or his colleagues in advance to the seizure which occurred on the flight. No other crew or passengers suffered any ill effects during the flight.

Recorded information

The recorded data from the Flight Data Recorder and the Quick Access Recorder were downloaded. From this information it was possible to confirm that the rudder pedal inputs were the initiating event which caused the AP to disconnect.

Incapacitation procedures

The operator's Operations Manual Part A, '*Flight Procedures*', contains the following procedures for dealing with pilot incapacitation:

> ***'Incapacitation of Flight Crew Members***
>
> *Incapacitation is defined as any condition affecting the physical or mental health of a crew member during the performance of his duties which renders him incapable of properly performing those duties. While the remedial action which can be taken within an aeroplane in the event of flight crew incapacitation varies according to cockpit design and size, as well as to the overall crew compliment of the aeroplane, the general principles are as follows.*
>
> ***Recognition***
>
> *'Incapacitation falls into two categories, obvious and subtle, and of these subtle is by far the most potentially dangerous. Early recognition of subtle incapacitation will greatly enhance the preservation of a safe and calm operation. Aids to recognition of subtle incapacitation are:*
>
> *(a) Alertness to crew member's mistakes. A mistake is not necessarily caused by incapacitation but may be and, in any event, requires correction;*
>
> *(b) Any unbriefed deviation from Standard Operating Procedures (SOPs). SOPs provide a yardstick of what is accepted as normal operating practice which can be used to measure crew members' performance. They are not absolute but any deviation from or variation to SOPs should be pre-briefed. If not then deviation or variation must be challenged, the deviation or variation may be entirely justifiable but confirmation is necessary;*
>
> *(c) Compliance with (i) and (ii) above allows the trigger for the **'Two Communication Rule'** which states that crew members shall have a very high index of suspicion of a subtle incapacitation at:*
>
> - *Any time a crew member does not respond appropriately to two verbal communications; or*
> - *Any time a crew member does not respond to a verbal communication associated with a significant deviation from a standard flight profile.*

Action Following Recognition

'If in visual contact with the runway, prepared in all respects for a safe landing with the aeroplane in full control, and control unaffected by the incapacitated crew member then the other pilot should continue the approach and land. When this is not the case:

(a) The other pilot should control the aeroplane and when control is assured engage the autopilot (if fitted).

(b) He should care for the incapacitated crew member by summoning the assistance of other crew members – or passengers if no other crew are available to:

- *Administer oxygen 100%;*
- *Consider enquiring if there is a medical doctor amongst the passengers.*

(c) He should declare an emergency and fully inform ATC of the situation and proceed to the nearest suitable aerodrome at which medical assistance can be provided. Radar vectors from ATC can significantly reduce workload.

(d) Removal of the incapacitated crew member from the flight deck area is rarely practical but can now be considered if the process will not endanger safe operation of the flight.

(e) He should revise crew duties and where cabin crew, or travelling crew are available they should be asked to read the relevant checklists.

(f) He should pass as much medical detail to ATC and request an ambulance to meet the aeroplane on arrival.

(g) If the passengers are aware of the problem or notice the aeroplane deviating from its planned route, he should make a PA to inform and reassure if time and duties permit.

(h) He should not allow the incapacitated crew member to take any further part in the conduct of the flight, even if they feel fully fit.

(i) After landing he should taxi to a normal, but nearest practical, ramp position if able. This is where facilities will exist to best remove the incapacitated crew member quickly.

(j) After the flight, medical advice must be sought before remaining crew members continue further flying.'

Emergency Procedures

The Operations Manual Part A includes Safety and Emergency Procedures and, under the section that includes the Emergency Procedures, gives the following instructions:

> ***'Pilot Incapacitation***
>
> *'If either pilot becomes ill in flight, the other pilot may require cabin crew assistance. The pilot in control will use the Alert Call to gain the attention of the cabin crew.*
>
> ***Action***
>
> *PA from pilot in control:*
>
> ***"This is the Captain/First Officer: Cabin crew on station."***
>
> *SCCM goes to nearest station and contacts the Captain/First Officer via the interphone to receive instructions.*
>
> *SCCM will be called to the flight deck.*
>
> - *Pull incapacitated pilot upright and support.*
> - *Pull seat and pilot rearward.*
> - *Lock seat.*
> - *Fasten the harness, securing pilot's arms inside harness, and lock the inertia reel.*
> - *Move pilot's feet away from the pedals.*
> - *Be prepared to administer oxygen and read from the checklist.*
>
> ***Note:*** ***The pilot oxygen mask may be used to deliver immediate 100% oxygen first aid to the incapacitated flight crew member (default setting is 100%), then if available, substitute with a spare portable oxygen bottle and mask as soon as possible. Cabin crew should never use the emergency flow on the pilot oxygen mask on an unconscious pilot.***
>
> *The SCCM will normally be the first to respond, if a cabin crew member is required to remain on the flight deck for landing it should be the No. 3 to assist the pilot flying with the pilot incapacitation drill. The SCCM must be seated at their station for landing so that they can continue with the cabin management and on landing their doors are covered in case of emergency.*
>
> *Part of the Pilot Incapacitation Drill may be the requirement of the cabin crew member to read from the checklist. The pilot flying may require you to use the headset to communicate with him.'*

Analysis

The co-pilot's seizure condition was identified by the aircraft commander as part of his routine scan of the flight deck and not as the result of any unexpected control inputs or non-compliance with procedures by the co-pilot.

The operator had provided detailed guidance and actions to be taken in the event of pilot incapacitation. The commander, who was initially the PM but took control becoming the PF, and SCCM adapted that guidance based on their circumstances and delivered a safe and successful outcome to what was, potentially, a hazardous incident.

The sharing of the response to the incapacitation meant that the commander could concentrate on flying the aircraft while the SCCM restrained and monitored the co-pilot. By anticipating the areas of potential hazard such as overstressing the rudder, navigating the descent and the approach, and having an ABP ready to assist, particularly close to the ground in the final stages of the approach, the commander and SCCM had solutions to manage the problems.

Conclusion

This serious incident was the result of the co-pilot suffering a medical incapacitation which was professionally managed by the aircraft commander supported by the SCCM on the flight deck and the CA3 in the passenger cabin.

ACCIDENT

Aircraft Type and Registration:	Cessna 152, G-WACF	
No & Type of Engines:	1 Lycoming O-235-L2C piston engine	
Year of Manufacture:	1980 (Serial no: 152-84852)	
Date & Time (UTC):	4 July 2017 at 0900 hrs	
Location:	Wycombe Air Park, Buckinghamshire	
Type of Flight:	Training	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Damage to nose landing gear, propeller and engine mounting	
Commander's Licence:	Student	
Commander's Age:	23 years	
Commander's Flying Experience:	38 hours (of which 38 were on type) Last 90 days - 18 hours Last 28 days - 7 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The aircraft's nose landing gear partially collapsed and the propeller struck the runway surface, following a bounced landing by a student pilot.

History of the flight

This was the student pilot's third solo flight and it was undertaken immediately after a dual check with a flight instructor, during which the student had completed two circuits that were assessed as "above average". Weather conditions were good and instructor watched from a position nearby, as the student completed her first circuit and approached to land on the asphalt Runway 24, with a slight crosswind from the left.

The approach appeared stable until, at approximately 100 ft aal, the student started to make over-corrections to the aircraft's pitch attitude, while trying to achieve the correct airspeed. The instructor observed the aircraft pitching up and down and saw the mainwheels touchdown before the aircraft bounced, in a nose-up attitude, to approximately 15 ft aal. However, the nose then dropped, the aircraft landed nosewheel-first and it porpoised along the runway while the groundspeed reduced.

The student was aware that, after bouncing, she pulled the control column back, without increasing power, but is unsure what action she took next. Her recollection is of the aircraft

descending and that, once on the ground, it porpoised before she applied the brakes and moved clear of the runway. On instruction from air traffic control, she subsequently stopped the aircraft and shut it down (Figure 1).

Figure 1

G-WACF, with damage to the propeller and to the nose landing gear apparent

Student's assessment

In retrospect the pilot believes she was unable to control the airspeed adequately during the last part of the approach and, when the aircraft bounced, she panicked slightly. She had been trained to go around in such circumstances, and she realises that this is what she ought to have done.

ACCIDENT

Aircraft Type and Registration:	Jodel D117, G-BBPS	
No & Type of Engines:	1 Continental Motors Corp C90-14F piston engine	
Year of Manufacture:	1957 (Serial no: 597)	
Date & Time (UTC):	25 February 2018 at 1230 hrs	
Location:	Shempstons Farm, Lossiemouth	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - 1 (Minor)	Passengers - N/A
Nature of Damage:	Damaged beyond economic repair.	
Commander's Licence:	Light Aircraft Pilots Licence	
Commander's Age:	68 years	
Commander's Flying Experience:	284 hours (of which 31 were on type) Last 90 days - 2 hours Last 28 days - 2 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Whilst landing on an uphill grass runway with a tailwind component, the aircraft overran the runway into a ploughed field causing the aircraft to come to rest inverted.

History of the flight

The aircraft had taken off from Shempstons Field, near Lossiemouth on Runway 17 at approximately 1200 hrs with winds of 150° at 10 kt for a local flight of approximately 30 minutes. Normal operating procedure is to use the inclined Runway 35 for landing regardless of wind direction, with a late touchdown point due to soft ground and overhead power lines near the threshold.

During the flight the wind increased to about 13 kt and the pilot made three approaches followed by go-arounds. The touchdown on the fourth approach was later than normal (Figure 1) and at 60 KIAS which, combined with the tailwind component, resulted in a high ground-speed. The aircraft wheel brakes are not normally used for landing deceleration and the pilot was unable to stop before running off the end of the runway. The aircraft entered a rough ploughed field causing the main landing gear to dig in and it came to rest inverted. The pilot required assistance to vacate the aircraft and suffered a minor back injury. The engine and propeller suffered shock loading and the structure of the canopy, upper fuselage and right main landing gear was damaged.

Figure 1

Accident site - Shempstons Field, near Lossiemouth

SERIOUS INCIDENT

Aircraft Type and Registration:	Piper PA-28-161 Cherokee Warrior II, G-BTAW	
No & Type of Engines:	1 Lycoming O-320-D3G piston engine	
Year of Manufacture:	1986 (Serial no: 28-8616031)	
Date & Time (UTC):	13 March 2018 at 1215 hrs	
Location:	Castle Kennedy Airfield, Dumfries and Galloway	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	None	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	40 years	
Commander's Flying Experience:	256 hours (of which 236 were on type) Last 90 days - 1 hour Last 28 days - 1 hour	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Having changed the route of his flight due to weather, the pilot did not check NOTAMs or gain PPR[1] for the new destination. As a result, the aircraft landed on the closed runway at Castle Kennedy Airfield.

The airfield

Castle Kennedy Airfield is unlicensed and all operations are PPR except for aircraft based at the airfield. The owner of the airfield was, at the time of this incident, working with a company in developing technology for the generation of power from large tethered kites. As a result of this the airfield had an active NOTAM which stated that the runway would be closed during kite flying operations. A full size kite has a wing span of 10 m, with a mass of 30 kg. It can travel at speeds up to 100 kt and is connected by a tether to a winch on the runway. The tether has a breaking strain of 6,500 kg and this kite would present a significant hazard to any aircraft. The kite operates up to 1,100 ft aal. Although the NOTAM in effect on the date of the incident did not specifically state that the runway was closed during kite flying operations, the owner of the airfield required pilots to obtain prior permission before flying there, which the owner and the kite company felt was sufficient. The NOTAM was updated on 18 March 2018 to reflect that the runway would be closed during kite flying operations.

Footnote

[1] Prior permission required: a system whereby pilots are required to contact an airfield before taking off to obtain permission to fly there and to be given pertinent information.

History of the flight

The pilot and a fellow member of the flying group had left their home base with the intention of flying to several different airfields during a day trip. Their routing initially took them to Kirkbride Airfield where they swopped seats. They were intending to fly from Kirkbride to Prestwick Airport for the second leg of their route but, due to a lower than expected cloud base over the high ground, they decided instead to route along the coast before stopping at Castle Kennedy. Both pilots were familiar with Castle Kennedy. Concern over the weather conditions and a possible maintenance issue at Kirkbride meant neither pilot consulted the NOTAMs for the new route or telephoned Castle Kennedy to gain PPR.

During the flight, the pilot spoke with Scottish Information before transferring to the SAFETYCOM frequency (135.475 MHz) when the aircraft was approximately 10 nm from Castle Kennedy. This allows pilots to broadcast their intentions when there is no frequency allocated to an airfield or landing site, and several broadcasts were made by the pilot before landing at the airfield.

As the pilot approached the runway he noticed there was something just short of the threshold but he was unable to make out what it was until he was in the flare. At this point he saw that the object was a cross which he thought was on a flag placed flat on the tarmac. He saw no further obstacles on the runway and considered that the safest course of action was to continue to land. After the aircraft was shut down, the pilot was approached by members of the kite company who pointed out that the runway was closed and a NOTAM was in effect.

The kite company was working at the airfield although they were not flying the full-size kite at the time. There were six members of staff around the airfield with some working close to the runway. A member of the staff was monitoring SAFETYCOM and was alerted to the imminent arrival of the aircraft. He was able to radio the staff working on the airfield so they could move away from the runway. It was estimated that it was only 3.5 minutes from the first transmission on SAFTYCOM until the aircraft landed. The kite staff commented that if they had been flying the full-size kite, this would have been insufficient time to lower the kite and move the equipment clear of the runway.

The kite company had placed a large cross at the threshold of the runway which was yellow on a red background. This measured 3 m by 3.2 m. It was lying flat on the runway and, although large, would possibly not have been visible to the pilot due to the approach angle. The kite company expected the aircraft to fly over the airfield before making an approach, in which case the cross would have been clearly visible. Following the incident, the kite company decided to review the runway closed marking and its placement on the runway.

The pilot was surprised that Scottish Information did not inform him that the runway was closed at Castle Kennedy but it was not the responsibility of ATC to do so and the controllers were unlikely to have been aware of the runway state.

Conclusion

On arrival in Kirkbride the pilot found that the weather was unsuitable for the planned route to Prestwick. An alternative plan was agreed but the pilot did not check the NOTAMs for the new route or gain PPR. As a result the aircraft landed on the closed runway at Castle Kennedy. The use of SAFETCOM meant that the kite staff were able to clear the runway for the approaching aircraft but that was only possible as they were not flying the full-size kite.

Pre-flight planning is vital for ensuring the safety of a flight even when there is a late change of plan. The use of a checklist of items to be completed might be helpful to pilots to ensure nothing is missed.

AAIB Note: During conversation, the pilot commented that there was a poor mobile data signal at Kirkbride. It is worth noting, therefore, that it might not always be possible to use mobile data for pre-flight planning or re-planning and an alternative means of checking aeronautical information may be needed.

ACCIDENT

Aircraft Type and Registration:	Vans RV-8A, G-HCCF	
No & Type of Engines:	1 Lycoming IO-360-A1B6 piston engine	
Year of Manufacture:	2014 (Serial no: PFA 303-13790)	
Date & Time (UTC):	21 February 2018 at 1400 hrs	
Location:	Old Sarum Airfield, Wiltshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Extensive	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	59 years	
Commander's Flying Experience:	4,310 hours (of which 37 were on type) Last 90 days - 6 hours Last 28 days - 6 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Following a bounced landing, the aircraft's nose landing gear dug into soft grass, the propeller made ground contact and the aircraft inverted.

History of the flight

The aircraft was being flown from the rear seat and the owner, who possesses a Private Pilot's Licence (PPL) with a lapsed rating for Single Engine Piston (SEP) aircraft, was a passenger in the front seat. Mainwheel braking is facilitated using toe pedals, but these are only fitted in the front cockpit.

Following a local flight, the pilot completed two satisfactory 'short field' landings on the grass Runway 06 with 'full flap' set, and with braking applied by the passenger at the pilot's request. Because brake pedals are available only in the front cockpit, the aircraft has a placard which states it is only to be flown solo from the front seat.

A third approach was flown, for another 'short field' landing, and the aircraft touched down on a part of the runway close to the threshold that felt "bumpy" and had an uphill gradient. The aircraft bounced and both occupants believed that only the mainwheels had touched, but subsequent examination of the ground markings indicated the nosewheel had also made firm contact (Figure 1). This was substantiated by a witness, who described the third landing as heavier than the first two, and who believed the aircraft was in a relatively flat attitude when it bounced.

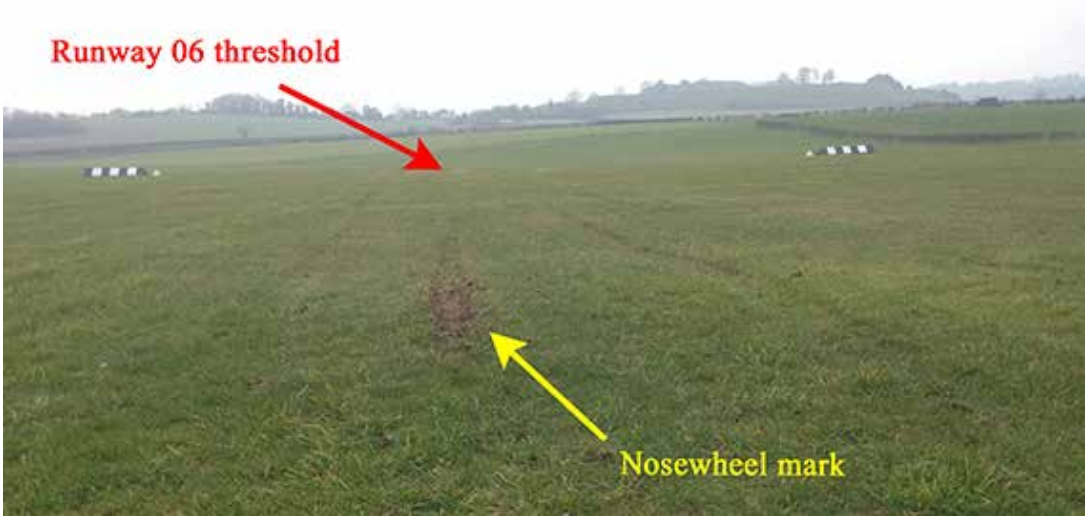

Figure 1

View of initial ground marks; the aircraft having touched down moving towards the camera position and then bounced

After the bounce, when the aircraft touched down again, the pilot asked the passenger to apply the brakes "more firmly" than he had during the previous landings. The aircraft ran straight and slowed quickly, but the nose dropped and, although the pilot moved the control stick fully aft, the propeller made ground contact. According to the passenger, the aircraft then "flipped over quite slowly" and came to rest inverted, with the canopy broken into several pieces (Figure 2).

Figure 2

G-HCCF inverted and with a line attached in preparation for righting

The pilot stated that the fuel and electrics were switched OFF immediately and then he released his seat belt, although he later wished he had kept his belt fastened for longer, because he had to support his own body weight and clear pieces of the canopy while he

was upside down. Several bystanders approached the aircraft and, in response to the pilot's shouted instructions, they raised one of the wings. This allowed the passenger and the pilot to crawl out through the broken canopy.

The airfield authority noted that Runway 06 is generally regarded as smooth but with an undulation, or bump, close to the threshold. At the time of the accident the surface had drained well, following a period of rain, but was assessed as soft.

Aircraft occupants' comments

After examining the ground marks and damage, the passenger, who was also the aircraft's constructor and owner, observed that the nose landing gear had bent rearwards as a result of "digging in" to the soft ground during the landing; there was significant damage to the nose landing gear fork unit. The pilot commented, that prior to the aircraft inverting, there was no jolt and no noise was heard that could have warned him the nose landing gear was sustaining damage.

Following the accident, the pilot commented that he ought to have flown the aircraft from the front seat, so that he had access to all the controls. He had previously held a flight instructor's rating for SEP aircraft and, prior to this qualification lapsing, he had trained the passenger/owner on his aircraft, with the passenger/owner occupying the front seat. Consequently, the pilot felt comfortable flying the aircraft from the rear seat and relying on the passenger/owner to operate the wheelbrakes when requested. The passenger/owner had logged 40 hours flying in G-HCCF and was awaiting a proficiency check to renew his SEP rating.

In retrospect, the pilot and the passenger/owner both assessed that it had not been appropriate to attempt 'short field' landings on the, uphill section of Runway 06, where there is a surface undulation, especially in view of the soft condition of the grass surface.

Previous AAIB investigations

The AAIB has investigated several UK accidents during which the nose landing gear of a Vans RV series aircraft has bent back or collapsed and this is the sixth such accident which has resulted in the aircraft inverting.

A report in AAIB Bulletin 3/2017, concerning G-RPRV, listed 13 previous accidents but did not mention G-XSAM, a Vans RV-9A which suffered a nose landing gear collapse at Old Sarum and was reported in AAIB Bulletin 2/2016. The report concerning G-RPRV noted that the Light Aircraft Association (LAA) Type Acceptance Data Sheet (TADS) for the Vans RV-9A includes the following statement:

> *'Problems have been experienced with the RV-9A noseleg, especially when operating off grass, with instances of the nosewheel bending back and the strut digging into the ground, causing a rapid stop and further damage. In order to avoid this risk, it is important to maintain the correct nosewheel tyre pressure, and to trim the spat to ensure generous clearance between the tyre and the*

> *wheel aperture in the spat (circa half an inch). It is also important to maintain suitable preload on the nosewheel axle bearings, torquing up the axle nut gently as required in the absence of a conventional spacer between the bearings. It is also important to land the aircraft on the mainwheels first and hold the nosewheel off the ground during the initial part of the landing roll, rather than landing on all three wheels together which encourages wheelbarrowing and overloading the nosewheel.'*

A similar statement is included in the TADS for other Vans types with nosewheels, but is not included in the TADS for the RV-8A, so the LAA has now decided to review the RV-8A document.

Following publication of the report concerning G-RPRV, two further accidents have been reported; G-ELVN (AAIB Bulletin 11/2017) and G-CCVS (AAIB Bulletin 1/2018). The report concerning G-CCVS mentions an 'Anti Splat' kit which can be fitted to the nose landing gear; G-HCCF had such a kit fitted.

National Transportation Safety Board (NTSB) study

The United States NTSB studied 18 landing accidents and one incident to Vans series aircraft that inverted during landing[1]. The study's summary stated:

> *'Once the* [nose landing gear] *strut and fork have contacted the ground, the strut will bend aft. The aft loading from the dragging fork and the spring-back reaction of the strut produces an overturning moment and lifting action that may result in the airplane overturning without any additional forces acting on the airplane. The aerodynamic load on the horizontal stabilizer may prevent the airplane from overturning while the airspeed is greater than some critical yet presumably low airspeed. … At low airspeeds, the aerodynamic loads on the horizontal stabilizer lessen to the point that the tail can now start to rise allowing the airplane to rotate about the nose gear and become inverted.'*

The study concluded that there was sufficient strength in the nose landing gear leg, and in all these cases the nose landing gear leg forks made contact with the ground.

LAA comment

The LAA noted that occupants of G-HCCF were aided in their escape because the aircraft's canopy had broken. However, in other accidents, such as that involving G-RPRV, pilots used an axe, or other tool, to break the canopy and facilitate their escape. The LAA commented that it will consider the case for requiring, or promoting, the carriage of an appropriate tool in certain aircraft.

Footnote

[1] See http://www.porcupinetech.com/rvproj/docs/ntsb_rv_study_ANC05LA123.pdf

ACCIDENT

Aircraft Type and Registration:	Cameron Z-375 hot air balloon, G-VBFO	
No & Type of Engines:	None	
Year of Manufacture:	2008 (Serial no: 11135)	
Date & Time (UTC):	9 October 2017 at 1545 hrs	
Location:	Hyde Hill Farm, Royston, Hertfordshire	
Type of Flight:	Public Transport	
Persons on Board:	Crew - 2	Passengers - 12
Injuries:	Crew - None	Passengers - 1 (Serious)
Nature of Damage:	None	
Commander's Licence:	Commercial Pilot's Licence (Balloons)	
Commander's Age:	44 years	
Commander's Flying Experience:	1,498 hours (of which 400 were on type) Last 90 days - 31 hours Last 28 days - 7 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

Synopsis

After an uneventful flight, G-VBFO landed in a field near Royston. The basket landed firmly, bounced several times and was then dragged across the field eventually coming to rest approximately 60 m from the initial impact point. During the first impact, a passenger was ejected from the rear right compartment. Whilst it could not be determined why the passenger came out of the basket, it is likely that he either let go prior to the landing or was unable to hold on tightly enough to keep himself in the landing position.

Post-accident interviews with the passengers confirmed that safety briefings were conducted in accordance with the company operations manual. However, passengers commented that the briefings were difficult to hear and did not prepare them for the dynamic nature of the landing. This may have contributed to the accident. The operator and the CAA state that they have taken action to ensure safety briefings are delivered to a consistent high standard.

History of the flight

G-VBFO was operating its second flight of the day. The flight was originally planned to depart from St Albans, Hertfordshire. However, the wind would have taken the balloon close to Class D Airspace so the flight was relocated to Shuttleworth, Bedfordshire. Four passengers did not arrive for the flight, so one of the ground crew joined the flight to add additional weight. The flight departed Shuttleworth at 1445 hrs with 13 passengers and 1 pilot.

The flight proceeded uneventfully for approximately one hour. The pilot then searched for a landing site, aware that the wind at 100 ft agl had increased to approximately 14 kt. He made an initial approach to a playing field but, deciding this field was not large enough in the wind conditions, made a second approach to a large stubble field near Royston, Hertfordshire.

As the balloon landed the pilot reported that his GPS recorded it was travelling at 13.3 kt with a descent rate of 200-300 ft/min. The basket landed firmly, bounced twice and was then dragged across the field eventually coming to rest approximately 60 m from the initial impact point.

During the first impact, a passenger was ejected from the rear right compartment and travelled forward over the basket, striking one of the other passengers. The pilot managed to reach out and hold onto the passenger before losing his grip when the balloon bounced a second time, at which point the passenger fell in front of the basket and it passed over him. The passenger recalled that he was in the correct landing position prior to landing and holding on to the best of his ability.

As soon as the balloon stopped, the ground crew member, who was travelling in the balloon, went to assist the fallen passenger. Once the balloon was made safe, the pilot joined the crew member and called the emergency service.

The passenger suffered severe injuries.

Passenger briefing

Prior to the flight the pilot gave a pre-flight safety briefing. This was conducted once the balloon was inflated and with all the passengers in the basket. The pilot recalled that the briefing covered: what to expect during the flight; no smoking; where to hold on and what not to touch; expected flight time; the use of cameras and mobile phones and the landing position. All passengers practiced the landing position and the ground crew checked everyone was holding on and in the correct position. The pilot did not recall if he mentioned the basket may bounce and tip on landing.

When interviewed after the flight only three of the passengers remembered this pre-flight briefing. Two of these passengers recalled that they struggled to hear it.

Prior to landing, the pilot reminded the passengers of the landing position and reminded them to hold on and not to let go. The pilot explained that the basket may tip over on landing.

When interviewed after the flight most passengers remember this briefing. However, most commented that it did not prepare them for the dynamic nature of the landing.

On the final approach, as the balloon approached the trees the pilot asked everyone to face backwards, as briefed. Just prior to the landing he told everyone to take their landing positions. The pilot checked everyone was in the correct position prior to the landing.

Aircraft information

G-VBFO is a Cameron Z-375 hot air balloon. The basket has a central area for the pilot and four passenger compartments, two either side of the pilot (Figure 1). The operator's operations manual specifies that G-VBFO may carry a maximum of 18 occupants.

Figure 1

G-VBFO Basket before the flight

The operator's Operations Manual states that pilots should not fly if the wind speed exceeds 15 kt.

The pilot wears a harness throughout the flight to ensure he cannot fall out of the balloon. The harness is a strap which attaches to the floor of the basket and to the pilot's waist, giving the pilot freedom to move around the compartment in flight.

Each passenger compartment contains a foam bench and rope loops to hold during the landing. There is no requirement for harnesses to be fitted for passengers although the manufacturer offers these as an option. The UK Civil Aviation Authority (CAA) stated that no UK balloon operator currently uses passenger harnesses.

During landing, passengers sit on the foam bench with their back towards the direction of travel. They must hold on to the rope loops and place their head back against the padded panels that are mounted on the inside of the basket.

Meteorology

Prior to the flight the pilot obtained a balloon forecast from the Met Office. He used the Knebworth forecast data which showed winds of 4 kt with gusts to 9 kt during the flight period. The pilot described the wind at the departure point as "slightly swirly" but well within normal limitations.

Actual weather reports from Stansted and Cambridge Airports (14 nm SE and 11 nm NE respectively from the accident site) recorded a maximum surface wind of 7 kt during the time of the flight.

During the landing the surface wind was approximately 14 kt. This was stronger than forecast.

Weight and balance

With only 14 occupants the balloon was lighter than normal. After the accident, the pilot observed that this can make the balloon more difficult to control. However, the weight was above the minimum landing mass specified by the manufacture for safe operations.

The compartment from which the passenger fell only had three occupants for this landing. If the balloon was full there would be four occupants in each compartment. Following the accident, the pilot observed that when four people occupy a compartment they are packed together tightly, which may prevent individuals from being thrown out in the event of a hard landing.

Previous similar events

The investigation reviewed previous events in which passengers had been ejected from balloon baskets. The circumstances of some of these events were different to the G-VFBO accident.

June 2017, Cameron Z-275 G-CCNC, Ashfield, Nottinghamshire

One passenger was ejected from the balloon basket during a heavy landing. The ejected passenger was not injured, other passengers reported minor injuries.

June 2017, Sky 220-24 G-SPEL, Bashall Eaves, Lancashire

One passenger was ejected from the basket during a firm landing. It was likely that the passenger was not holding the rope handles tightly enough at the time of the landing. The passenger was seriously injured.

October 2016, Cameron ZS-HAH, Buffelspoort dam, South Africa

In December 2016, the South African Civil Aviation Authority published a preliminary occurrence report into the accident involving ZS-HAH. Three passengers were ejected from the balloon basket whilst landing in strong winds. One passenger was fatally injured.

April 2014, Cameron Z-375 G-VBFR, Corby Glen, Lincolnshire

After an initial landing, several passengers disembarked and the balloon was then repositioned to an adjacent field. During the subsequent landing the basket tipped and one passenger fell out of the basket sustaining minor injuries.

August 2009, Sky 260-24 G-KTKT, Doncaster, South Yorkshire

The pilot was landing the balloon in a field of stubble in which there were a number of large rectangular straw bales. The balloon basket bounced and dragged on landing before stopping against one of the bales. During the landing a female passenger sustained serious injuries.

The following Safety Recommendation was made:

Safety Recommendation 2010-052

Balloon landings can take place at unprepared sites and may occasionally be bumpy for the occupants, especially in higher wind conditions if the basket tips over and drags along the ground. At present, not all commercial balloon operators make passengers aware of this, either at the booking stage or prior to a flight. Therefore, it is recommended that the Civil Aviation Authority require all commercial balloon operators to make prospective passengers aware of the varied nature of balloon landings so that they can make an informed decision as to whether or not to undertake a flight.

The CAA accepted this recommendation and added guidance to CAP611 (full details of the CAA response is available at - https://publicapps.caa.co.uk/docs/33/factor201005V1.pdf).

Passenger harnesses

There is no requirement in the UK for harnesses or seat belts to be fitted for passengers and the CAA stated that no UK balloon operator currently uses passenger harnesses.

The CAA and the operator have considered the introduction of passenger's seat belts, however, they are concerned that these would not improve safety and would not be practical. Seat belts could only be worn during the takeoff and landing whilst seated. Once seated, passengers cannot see out of the basket. Passengers would need to sit down some time prior to the approach to ensure their seat belt is correctly fastened. As balloon landings can involve several approaches they are concerned that passengers would not remain strapped in throughout. The current system allows passengers to remain standing, enjoying the view, until just before the landing.

The pilot is required to wear a harness throughout the flight. The harness is a strap which attaches to the floor of the basket and to the pilot's waist giving the pilot freedom to move around the compartment in flight. This type of harness is not practical when several passengers occupy a single compartment as they are likely to become entangled when moving around the compartment in flight.

Analysis

Weather information available before the flight indicated that the conditions were within the operator's limitations for this balloon.

By the time of the landing the wind had increased to approximately 14 kt. The balloon landed firmly, bounced several times and dragged. Whilst it cannot be definitely determined why the passenger came out of the basket it is likely that he either let go prior to the landing or was not able to hold on tightly enough to keep himself in the landing position.

Passenger briefings were conducted in accordance with the company operations manual. However, interviews with passengers suggest that these briefings were difficult to hear and did not convey the potentially dynamic nature of a balloon landing. The briefing was conducted after the balloon was inflated, rather than prior to inflation when there is less noise and distraction. This could have contributed towards the accident.

The injured passenger may have been ejected more easily because there were only three passengers in one of the compartments.

Safety action

Following this accident the operator indicated that it proposed to take the following safety actions;

1. The operator will explore ways to ensure passengers read and understand the safety information that is given to them before the flight.
2. The operator is considering the introduction of laminated passenger safety cards to be given to passengers to read between check in and boarding the flight to further emphasise the safety briefing.
3. The operator will continue to monitor safety briefings delivered by all pilots to ensure they are as clear as possible and convey the potential dynamic nature of a balloon landing.

The CAA has taken the following Safety Action:

> The CAA will instruct all UK Balloon Flight Examiners and Type Rating Examiners to particularly check the content and quality of delivery of the passenger safety briefing and subsequent passenger landing position checks whilst undertaking LPCs and/or OPCs during the coming 12 months.

Conclusion

It is likely that the passenger either let go prior to the landing or was not able to hold on tightly enough to keep himself in the landing position.

The compartment he fell from only had three occupants. This may have made it easier for him to fall out.

The briefings given did not convey to the passengers the potential dynamic nature of a balloon landing. This may have contributed to the accident.

The operator and the CAA have indicated they propose to take action intended to ensure safety briefings are delivered to a consistent high standard.

ACCIDENT

Aircraft Type and Registration:	Pioneer 200-M, G-CGEJ	
No & Type of Engines:	1 Rotax 912-UL piston engine	
Year of Manufacture:	2009 (Serial no: LAA 334-14909)	
Date & Time (UTC):	2 November 2017 at 1320 hrs	
Location:	Roddige Airfield, Lichfield	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Landing gear, wing and propeller damaged	
Commander's Licence:	National Private Pilot's Licence	
Commander's Age:	63 years	
Commander's Flying Experience:	234 hours (of which 234 were on type) Last 90 days -10 hours Last 28 days - 5 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

The aircraft had landed on a wet grass runway at Roddige Airfield (Staffordshire) and, whilst braking, the aircraft skidded and veered off the runway into a ploughed field. Recent rain had made the soil in the ploughed field very soft, which caused the nose landing gear to dig-in and buckle. The aircraft then swung around, damaging the propeller and resulting in minor damage to the wing and main landing gear. The pilot and passenger vacated the aircraft without injury. The pilot considered the loss of control on the runway to be as a result of "braking slightly heavily" on wet grass.

ACCIDENT

Aircraft Type and Registration:	Whittaker MW6-S Fatboy Flyer, G-MYPP	
No & Type of Engines:	1 Rotax 503 piston engine	
Year of Manufacture:	2007 (Serial no: PFA 164-12413)	
Date & Time (UTC):	16 March 2018 at 1130 hrs	
Location:	Lenham Airstrip, near Ashford, Kent	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Damage to one wing spar, both wing struts, fuselage tube, fuselage pod and windshield	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	59 years	
Commander's Flying Experience:	993 hours (of which 257 were on type) Last 90 days - 5 hours Last 28 days - 2 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

At a height of approximately 80 ft agl and at 48 KIAS, the engine power reduced to idle and could not be increased. The pilot lowered the nose, to achieve approximately 50 KIAS, and aimed towards a field in front of him, that he had previously identified for such circumstances. Before reaching the field, the aircraft penetrated a line of trees and bushes, estimated to be 20 ft tall, and then settled into a lower, boundary hedge, a few metres beyond the first hedge line. The occupants, who were wearing protective helmets and full seat harnesses, escaped unaided.

Figure 1

G-MYPP pictured prior to a previous flight

After the accident, the pilot discovered that a nipple on the throttle cable had detached, causing the engine to throttle back to idle. He noted that the aircraft (Figure 1), which had last flown four weeks previously, is a low inertia microlight and “does not have a great glide ratio”. He estimated that the elapsed time from the loss of power to impact was 10 seconds.

Miscellaneous

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

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

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

1/2014 Airbus A330-343, G-VSXY at London Gatwick Airport on 16 April 2012.

Published February 2014.

2/2014 Eurocopter EC225 LP Super Puma G-REDW, 34 nm east of Aberdeen, Scotland on 10 May 2012 and G-CHCN, 32 nm south-west of Sumburgh, Shetland Islands on 22 October 2012.

Published June 2014.

3/2014 Agusta A109E, G-CRST Near Vauxhall Bridge, Central London on 16 January 2013.

Published September 2014.

1/2015 Airbus A319-131, G-EUOE London Heathrow Airport on 24 May 2013.

Published July 2015.

2/2015 Boeing B787-8, ET-AOP London Heathrow Airport on 12 July 2013.

Published August 2015.

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

Published October 2015.

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

Published March 2016.

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

Published September 2016.

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

Published March 2017.

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

Published March 2018.

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

http://www.aaib.gov.uk

GLOSSARY OF ABBREVIATIONS

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

AAIB
Air Accidents Investigation Branch