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(ALL TIMES IN THIS BULLETIN ARE UTC)

SERIOUS INCIDENT

Aircraft Type and Registration:	Airbus A300B4-605R, G-MAJS
No & Type of Engines:	2 General Electric CO CF6-80C2A5 turbofan engines
Year of Manufacture:	1991
Date & Time (UTC):	26 July 2011 at 1035 hrs
Location:	London Gatwick Airport
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 12 Passengers - 335
Injuries:	Crew - None Passengers - None
Nature of Damage:	None
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	49 years
Commander's Flying Experience:	12,074 hours (of which 8,680 were on type) Last 90 days - 147 hours Last 28 days - 74 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB

Synopsis

The co-pilot inadvertently retracted the slats and flaps after takeoff instead of raising the landing gear. The aircraft continued to climb but the stall warning system operated twice before the aircraft accelerated to the normal climb speed. A slat technical issue after engine start had required the co-pilot to operate the slats/flap lever several times to clear the fault. These actions, coupled with a mental rehearsal of the procedure that the pilots would need to action should the fault recur on takeoff, had mentally predisposed the co-pilot to operate the slats and flaps lever after takeoff despite his intention to operate the landing gear lever.

History of the flight

The aircraft was on a scheduled flight from London Gatwick Airport to Chania Airport, Crete. The aircraft and pilots were on their first flight of the day. The flight preparation proceeded normally until, when the co-pilot selected the slats/flaps lever to 15/15 after engine start, SLAT SYS 1 AND 2 FAULT appeared on the Electronic Centralized Aircraft Monitor. The pilots carried out a system reset in accordance with the Quick Reference Handbook (QRH) and, when this was not successful, contacted the operator's engineers by radio for assistance. The engineers advised the pilots that the system might require several resets to clear the fault. This process involved tripping and resetting the relevant circuit breakers and then moving the

slats/flaps lever to check if the slats operated. During this process, the commander was liaising with the engineers and operating the circuit breakers while the co-pilot was in contact with ATC and operated the slats/flaps lever under the commander's direction.

Eventually the fault cleared and the slats and flaps travelled to the desired position (15/15). The co-pilot had cycled the slats/flaps lever between 0/0 and 15/15 approximately six times to achieve this. The commander confirmed with the engineers that the aircraft should now be serviceable for the intended flight, the flight plan was still valid and sufficient fuel remained for the flight. He consulted with the co-pilot to ensure that he was content to continue the flight. The pilots discussed the possibility of the fault recurring on takeoff and reviewed the appropriate procedure, the first item of which was to cycle the slats/flaps lever. The start-up procedure was completed and the pilots taxied the aircraft to Runway 08R without further incident.

The takeoff commenced at 1033 UTC and was normal until shortly after the aircraft became airborne. The co-pilot called "Positive climb" and the commander, who was the pilot flying, called "Gear up". At this point, the co-pilot moved the slats/flaps lever to 0/0. The Captain noticed unexpected displays on the ASI on the primary flight display and initially suspected that there was a problem with the airspeed indication. He crosschecked the airspeed with the standby airspeed indicator and confirmed that the aircraft was at the pitch attitude and power setting required by the 'Unreliable Airspeed' procedure. He then noticed that the landing gear selector was still down so he repeated the "Gear up" call. The co-pilot informed the commander that he had inadvertently retracted the slats and then selected the landing gear lever up. The stall warning system activated twice during the following 10 seconds and on both occasions the commander reduced the aircraft pitch attitude in response to the warning; the aircraft maintained a positive rate of climb throughout. The aircraft accelerated to the normal climb speed and the flight proceeded without further incident.

Flight crew comment

The co-pilot stated that, in addition to operating the slats/flaps lever during the fault finding process, the pilots had reviewed the actions to be taken in the event of a slat malfunction on takeoff, which would include operating the slats/flaps lever, and that these events had probably pre-disposed him to operate the slats/flaps lever after takeoff. The commander stated that he was surprised that the slats had retracted completely as he would have expected the alpha-lock system[1] to prevent slat retraction.

Recorded information

The co-pilot operated the slat/flap lever about eight seconds after takeoff and the slats and flaps started to retract. At this point the true angle of attack (TAOA) was 5.6° and the aircraft was climbing through 280 ft agl. During the following three seconds, the TAOA increased to approximately 8° and, apart from a three-second interlude, remained above 7.5° for the following 18 seconds during which time the slats and flaps fully retracted. The stall warning system operated twice during this period. The airspeed decayed from 176 KCAS to 166 KCAS during the 12 second period after the slats/flaps lever was first moved but increased thereafter. Relevant aircraft parameters are shown in Figure 1.

Footnote

[1] This system is described below under the heading *'Slat alpha-lock protection'*.

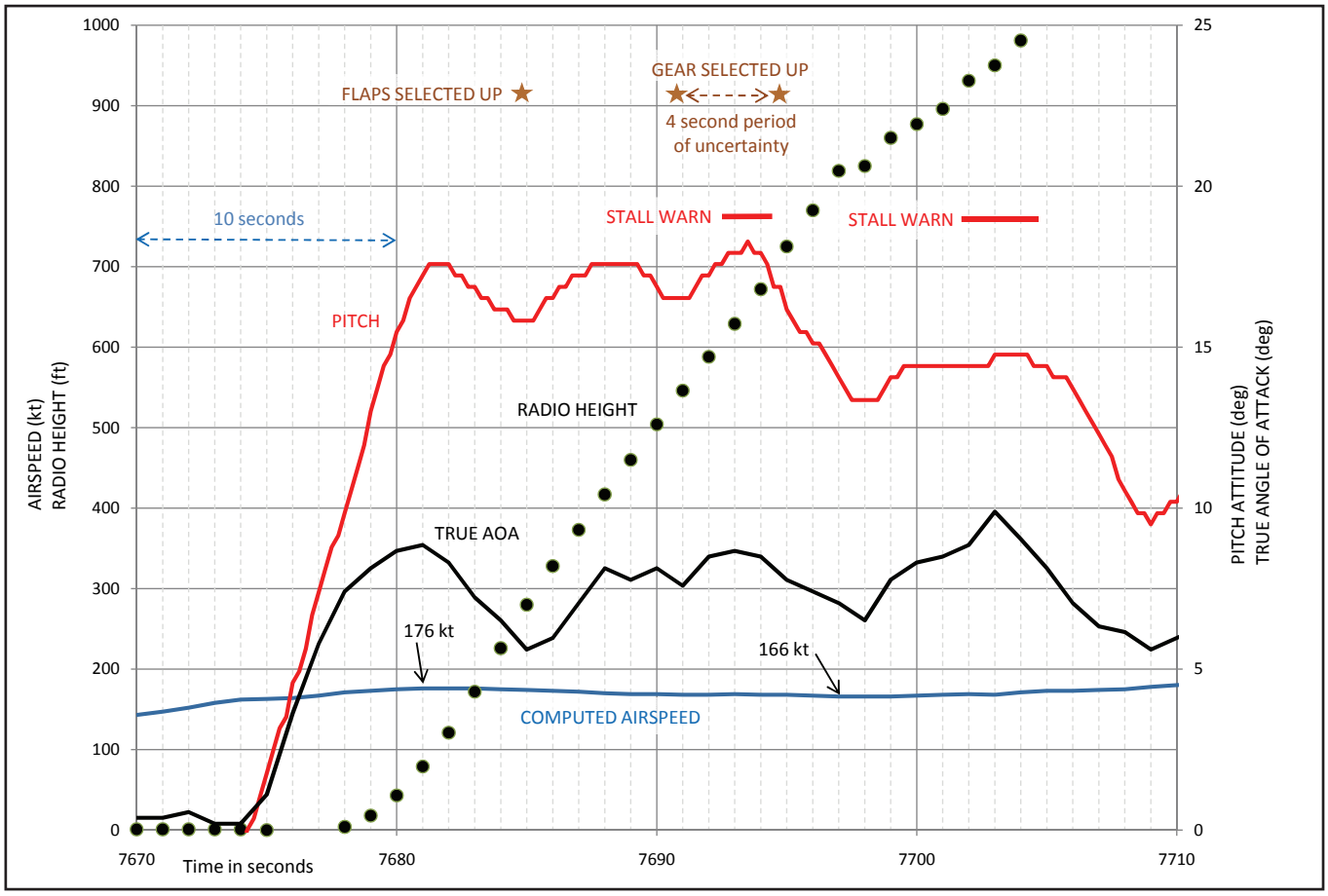


Figure 1

Flight parameters

Slats/flaps lever

A single slats/flaps lever, located on the right side of the centre console, controls the slats and flaps. There are five selectable positions: 0/0, 15/0, 15/15, 15/20 and 30/40 each with lever detents. The detent settings relate to the angle of surface deployment with the slats quoted first. To move the lever from any particular position the lever must lifted out of the detent. A blocking baulk is installed at detent 15/0 to obstruct movement of the lever straight through this position.

Slat alpha-lock protection

The aircraft was equipped with slat alpha-lock protection, described in the Flight Crew Operations Manual (FCOM) as follows:

> *'If the slats are selected to the 0/0 position while the angle of attack (AOA) is higher than 7.5°, the slat retraction is limited to 15°.'*

The FCOM states that the slats will retract when the AOA is below 7.5°. The manufacturer elaborated, stating:

> *'If the AOA is lower than 7.5° when the slats/flaps control lever is set to 0/0, the slats will retract and continue to retract even if the AOA becomes higher than 7.5°. The alpha-lock function is designed to prevent slats retraction at high AOA, not to stop retraction when it has started.'*

In the incident flight, the slat system appears to have worked as designed.

Human factors

The following is quoted from Green R.J., Muir H., James M., Gradwell D., Green R.L., (1996) *Human Factors for Pilots:*

> *'Ideally, any pilot exercising a skill, such as lowering the undercarriage would make the decision to do so, and then monitor his own behaviour in order to ensure that the correct skill was exercised. This may normally be so, but if the central decision maker is busy on another activity (i.e. the pilot is preoccupied) he may make the correct initial decision, inadvertently exercise the wrong skill, but fail to monitor his activity and remain completely unaware of the mistake that he has made. This mechanism of error is very common on flight decks, and examples abound of inadvertent control operations such as raising flaps instead of undercarriage immediately after takeoff…'*

Analysis

The pilots encountered a slats fault which the QRH procedure failed to clear. The commander liaised with the ground engineers who, based on previous experience, informed him that several resets might be required to cure the problem. This proved correct. The co-pilot made all the selections on the slats/flaps lever during this process. The selections he made were different from the selections normally made in flight in that he was selecting 0/0 directly from 15/15 whereas in flight, he would normally move it from 15/15 to 15/0 and subsequently, when airspeed had increased, move the lever from 15/0 to 0/0. By repeatedly operating the lever in this manner, the co-pilot had developed and exercised a new motor skill to operate the slats/flap lever directly between 15/15 and 0/0 and thereby negated the effectiveness of the blocking baulk.

Conclusion

On the ground before the incident, the co-pilot had developed and exercised a motor skill to operate the slats/flap lever between 15/15 and 0/0 in one movement. The distraction of the slat problem and the preoccupation with the possibility of a slat malfunction on departure had mentally predisposed him to exercise the wrong motor skill and to retract the slats and flaps despite his intention to operate the landing gear lever.

SERIOUS INCIDENT

Aircraft Type and Registration:	Bombardier DHC-8-402 Dash 8, G-JECH
No & Type of Engines:	2 Pratt & Whitney Canada PW150A turboprop engines
Year of Manufacture:	2005
Date & Time (UTC):	12 October 2011 at 0657 hrs
Location:	Near Brussels Airport, Belgium
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 4 Passengers - 49
Injuries:	Crew - None Passengers - None
Nature of Damage:	Split in inflatable seal at aft baggage compartment door
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	50 years
Commander's Flying Experience:	11,643 hours (of which 1,003 were on type) Last 90 days - 96 hours Last 28 days - 35 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

During the initial descent prior to landing at Brussels Airport, the aircraft's cabin depressurised due to a split seal on the aft baggage compartment door. An emergency descent was initiated before the aircraft levelled at FL80, following which the cabin pressurisation system functioned correctly. The crew and passengers were uninjured and the aircraft landed normally.

History of the flight

The aircraft was operating a scheduled flight between Manchester Airport and Brussels Airport, and was descending from FL250 to FL200 when the crew felt the cabin pressure reduce, which they associated with a sudden onset of mild inner ear pain. The cabin pressure control panel indicated a rate of climb of cabin altitude in excess of 3,000 ft/min and it had climbed above the set level of 7,000 ft. The commander, who was flying the aircraft on this sector, asked the first officer to request ATC for a continuous descent to FL100. The cabin crew reported by interphone that a loud 'pop' had been heard from the rear of the aircraft, followed by the noise of air escaping from the rear left galley area. Shortly after this the red CABIN PRESS warning caption illuminated on the caution warning panel, so both crew donned their oxygen masks and the commander initiated an emergency descent, in accordance with the emergency checklist. He set the transponder code to 7700 and instructed the first officer to declare a MAYDAY.

The commander stopped the descent at FL80 and the crew reviewed the situation. After establishing with the cabin crew that the passengers were not in difficulty, and observing that the cabin pressurisation system had stabilised the cabin altitude at 2,000 ft, the commander cancelled the MAYDAY, reset the transponder to their previously allocated code and decided to continue the flight to Brussels Airport, where the aircraft landed without further incident.

Engineering examination

Following the incident the aircraft was inspected by the operator's maintenance personnel. They determined that the inflatable seal on the aft baggage compartment cargo door had split, allowing the aft baggage bay to depressurise. This had caused the 'blow-out' panels on the bulkhead dividing the aft baggage compartment from the passenger cabin to open, causing the 'pop' noise, and the open 'blow-out' panels then allowed the passenger cabin to depressurise.

Analysis

The cause of the cabin depressurisation was traced to a split in the inflatable seal on the aft baggage compartment door. After descending to FL80, the rate of cabin air leakage past the door seal was low enough to allow the cabin pressurisation system to stabilise the cabin altitude at 2,000 ft. The operator is working with the aircraft's manufacturer to identify a more reliable door seal material.

ACCIDENT

Aircraft Type and Registration:	Cessna 340A, N346DW
No & Type of Engines:	2 Continental Motors Corp TCM TSIO-520-NB piston engines
Year of Manufacture:	1979
Date & Time (UTC):	15 July 2011 at 1156 hrs
Location:	Fairoaks Airport, Surrey
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Damage to right main landing gear, right flap, right wingtip and right propeller, right engine shock-loaded
Commander's Licence:	FAA Airline Transport Pilot's Licence
Commander's Age:	72 years
Commander's Flying Experience:	1,750 hours (of which 250 were on type) Last 90 days - 50 hours Last 28 days - 25 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

During the landing roll, the aircraft's right main landing gear retracted and the aircraft departed from the right side of the paved runway, damaging the aircraft. The damaged sustained by the landing gear components was consistent with the right main landing gear side brace folding, as weight was transferred onto the right main landing gear during the landing. The cause of the landing gear collapse was not positively identified.

History of the flight

Following maintenance, the pilot flew the aircraft from the airfield where the maintenance organisation was based to Dunsfold Aerodrome and he described the landing there as normal, with no reported defects relating to the landing gear. Nine days after this post-maintenance flight, the aircraft operated a private flight from Dunsfold Aerodrome to Fairoaks Airport, and the pilot reported that the landing gear retracted normally following takeoff from Dunsfold. At 2 nm on final approach to Runway 24 at Fairoaks Airport, the pilot selected the landing gear lever to DOWN and later recalled that the landing gear deployed normally, with three green DOWN lights illuminated. The pilot described the touchdown as normal, as did an AFISO who observed the landing from the control tower. As the aircraft settled onto its landing gear the right main

landing gear collapsed, causing the right propeller and right wingtip to strike the runway. The aircraft veered off the right side of the paved runway, onto the grass, and came to rest on a heading of 040ºM (Figure 1). The pilot was not injured in the accident and left the aircraft using the rear cabin entry door.

The weather conditions at the time the aircraft landed were described as being fair, with a 10 kt surface wind from 270ºM and visibility of more than 10 km. The surface temperature was +22ºC and the runway surface was dry.

Aircraft information

The Cessna 340A is a pressurised, twin-engined aircraft, equipped with retractable tricycle landing gear. The aircraft has a maximum certificated landing weight of 2,719 kg and the estimated landing weight of the aircraft at Fairoaks Airport was calculated to be 2,418 kg, with the centre of gravity within permitted limits. The aircraft's maximum demonstrated crosswind component is 23 kt.

The landing gear retraction system is powered by an electric motor that drives, via a reduction gearbox, a series of rods, torque-tubes and bellcranks that move the landing gear legs. The main landing gear is held in the 'down and locked' position by a folding side brace. A downlock link, driven by a bellcrank, applies force to the side brace to keep it in an over-centre position when the landing gear is down (Figure 2).

When the main landing gear leg is down and locked, the downlock link and bellcrank should be in an over-centre position, to prevent the side brace from folding. A microswitch, mounted to the downlock link, closes when it is over-centre and illuminates the green DOWN instrument panel light for that landing gear leg.

Figure 1

The aircraft following the right landing gear collapse

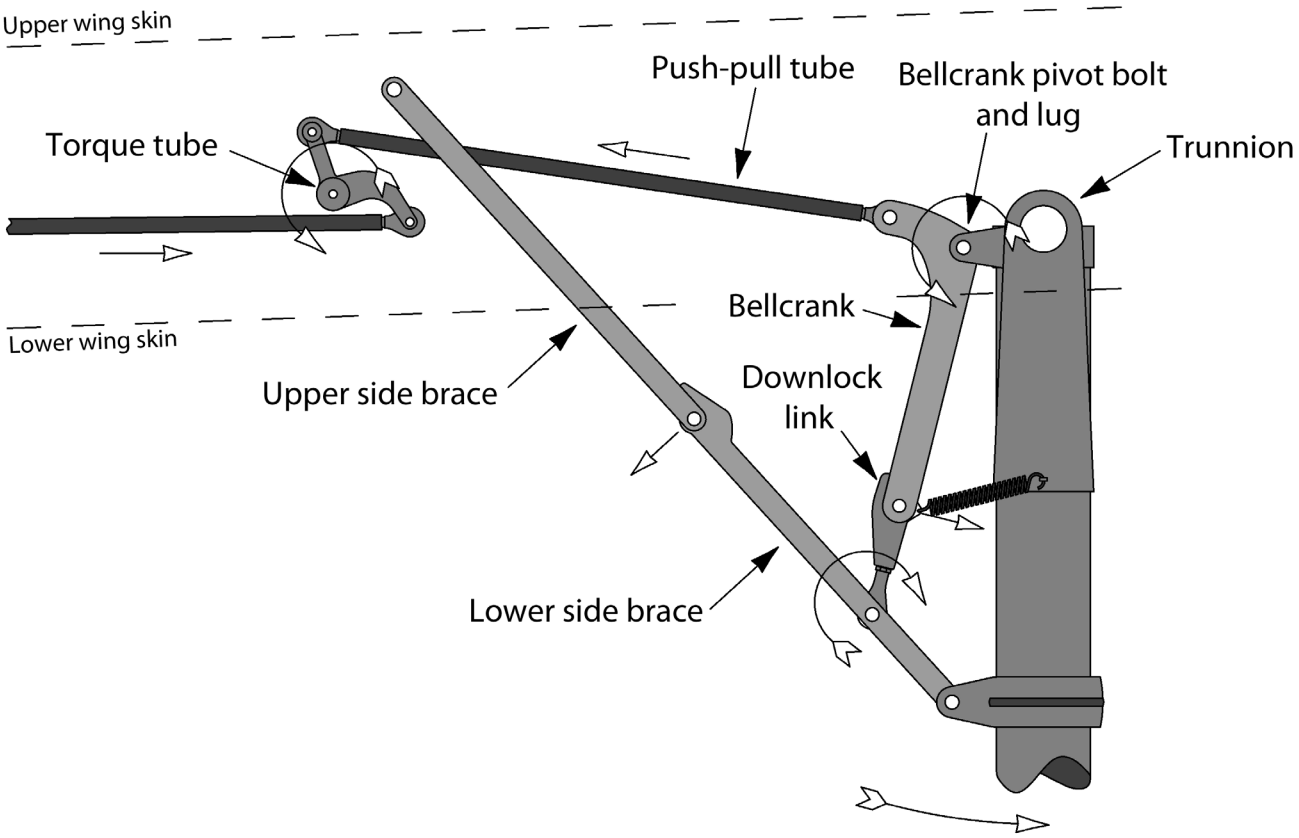


Figure 2

Schematic of the right main landing gear downlock mechanism, showing direction of motion as the landing gear locks down

Aircraft damage

The aircraft sustained damage to its right wingtip and right flap as a result of the landing gear collapse, in addition to damage to the right propeller and shock-loading of the right engine. The right landing gear was inspected and it was apparent that the downlock link had separated from the lower side brace due to fracture of the downlock link adjusting screw (Figure 3). Additionally, the forward lug on the upper landing gear strut, at its attachment to the bellcrank pivot bolt, had broken off and the fracture surface was dull with a rough texture, indicative of tensile overload. The bellcrank pivot bolt had sheared, such that the bellcrank was no longer attached to the landing gear strut.

The right main landing gear microswitch, mounted on the downlock link (Figure 4), was electrically tested and found to function correctly when the switch contacts were closed. However, due to the deformation of the microswitch mounting bracket sustained during the accident, it was not possible to determine the pre-accident alignment of the microswitch lever with respect to the bellcrank.

Maintenance history

The aircraft underwent an annual maintenance inspection between February and June 2011, before being released to service on 29 June 2011; the accident at Fairoaks Airport occurred on the second flight following this maintenance inspection. As the aircraft

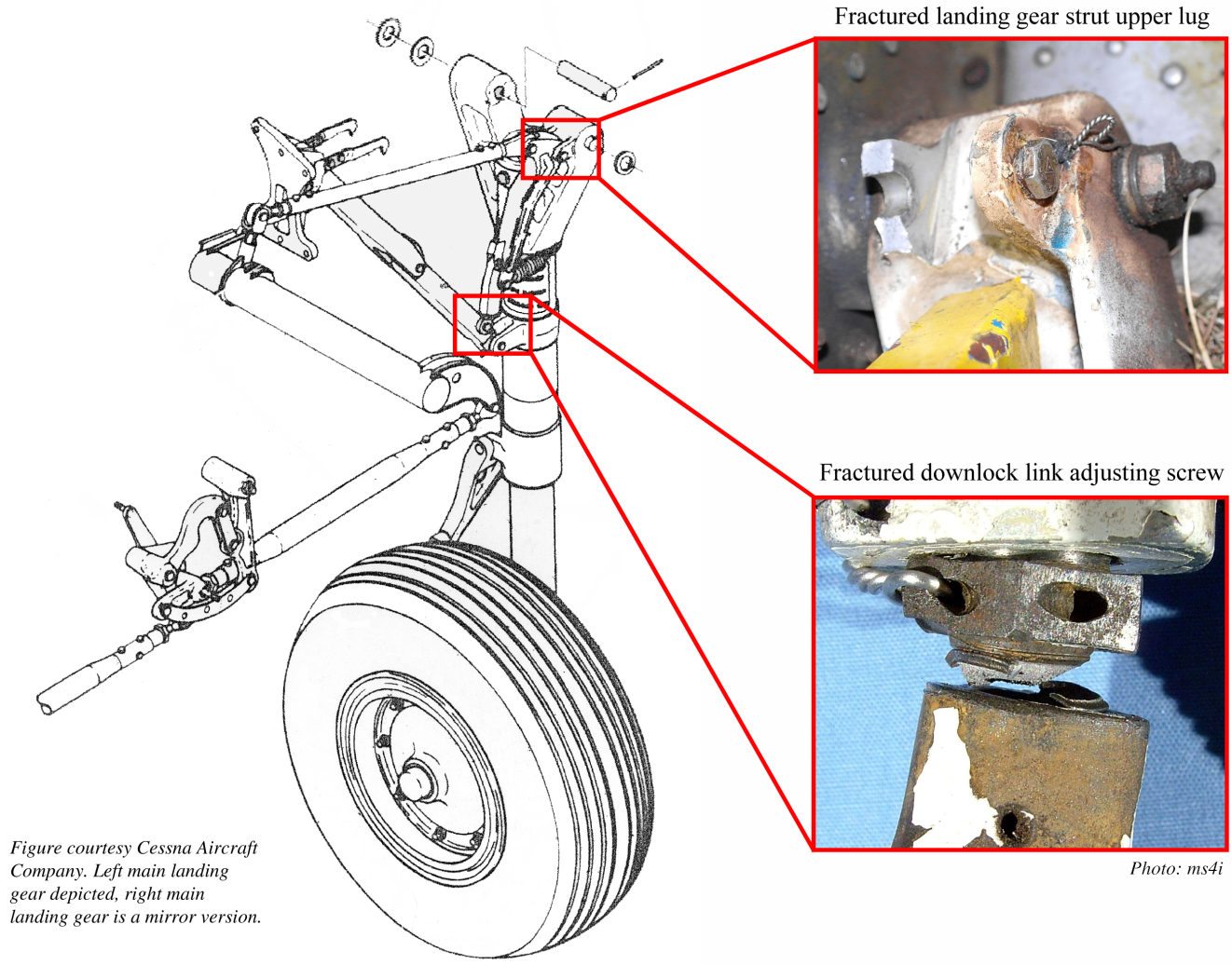


Figure 3

Location of right main landing gear leg broken components

is US-registered, maintenance performed must be in accordance with the requirements of FAR Part 43 *'Maintenance, Preventative Maintenance, Rebuilding and Alterations'*, which in turn requires compliance with the current manufacturer's Service Manual.

The landing gear rigging procedure as described in the Cessna 340 Service Manual is a lengthy process, extending to 10 pages of detailed instructions and including 76 individual tasks that must be performed. The Service Manual also requires that:

> *'Anytime a landing gear retraction or extension system component has been removed, replaced or the tension on the downlocks adjusted, the entire landing gear system must be re-rigged.'*

The rigging procedure includes instructions for adjusting the side brace downlock links by means of a 'free-fall' downlock check. This requires that, when released from a position of between five and six inches inboard from the down and locked position, the landing gear must fall freely and lock down. The downlock link screws must then be wound out in half turn increments

until the gear will no longer lock down following free fall, after which the adjusting screw is wound in:

> *'in small increments until the gear will free fall down and locked.'*

The downlock link screw must then be safety wired in this position.

Following adjustment of the downlock links, the landing gear must be driven into the down and locked position, and the force required to break the downlock links out of their over-centre position must be measured, at right angles to the downlock link, using a force gauge. The allowable range of this breakout force is between 40 and 50 lbf.

The aircraft's maintenance records were reviewed. They showed that during the annual maintenance inspection, two worn bushes were replaced in the lower lugs of the right main landing gear bellcrank, which is a task requiring disassembly of the downlock link from the bellcrank. The forces required to break the downlock links out of their over-centre positions when the gear was down were recorded as 40 lbf for the right main gear and 50 lbf for the left main gear, both of which are within the Service Manual limits. The forces were measured using an electronic force gauge that had a NIST[1]-traceable calibration certificate dated 1 March, 2011.

The landing gear maintenance tasks were performed by an unlicensed technician, Tech A, with assistance from a licensed engineer, Eng A. They were certified by a third person who held an FAA Inspection Authorisation. Tech A had conducted the majority of the landing gear maintenance, but was assisted by Eng A for certain tasks, including measurement of the downlock link over-centre breakout tensions. Tech A described in detail the individual tasks performed on the landing gear. These included jacking the aircraft, actuating the landing gear up and down using the electrical system, testing the gear up audible warning system and extending the landing gear using the emergency manual hand-crank. The rigging of the landing gear doors was checked, components lubricated and the worn bushes in the right bellcrank were replaced. The final maintenance action on the landing gear had been to extend the landing gear using the electrical system, before measuring the downlock link over-centre breakout tensions on the main landing gear, in addition to an equivalent check on the nose landing gear.

Whilst each of these individual tasks were described by Tech A as having been performed in accordance with the Service Manual, the entire 76-step landing gear rigging procedure had not been complied with, including the 'free-fall' downlock link adjustment procedure.

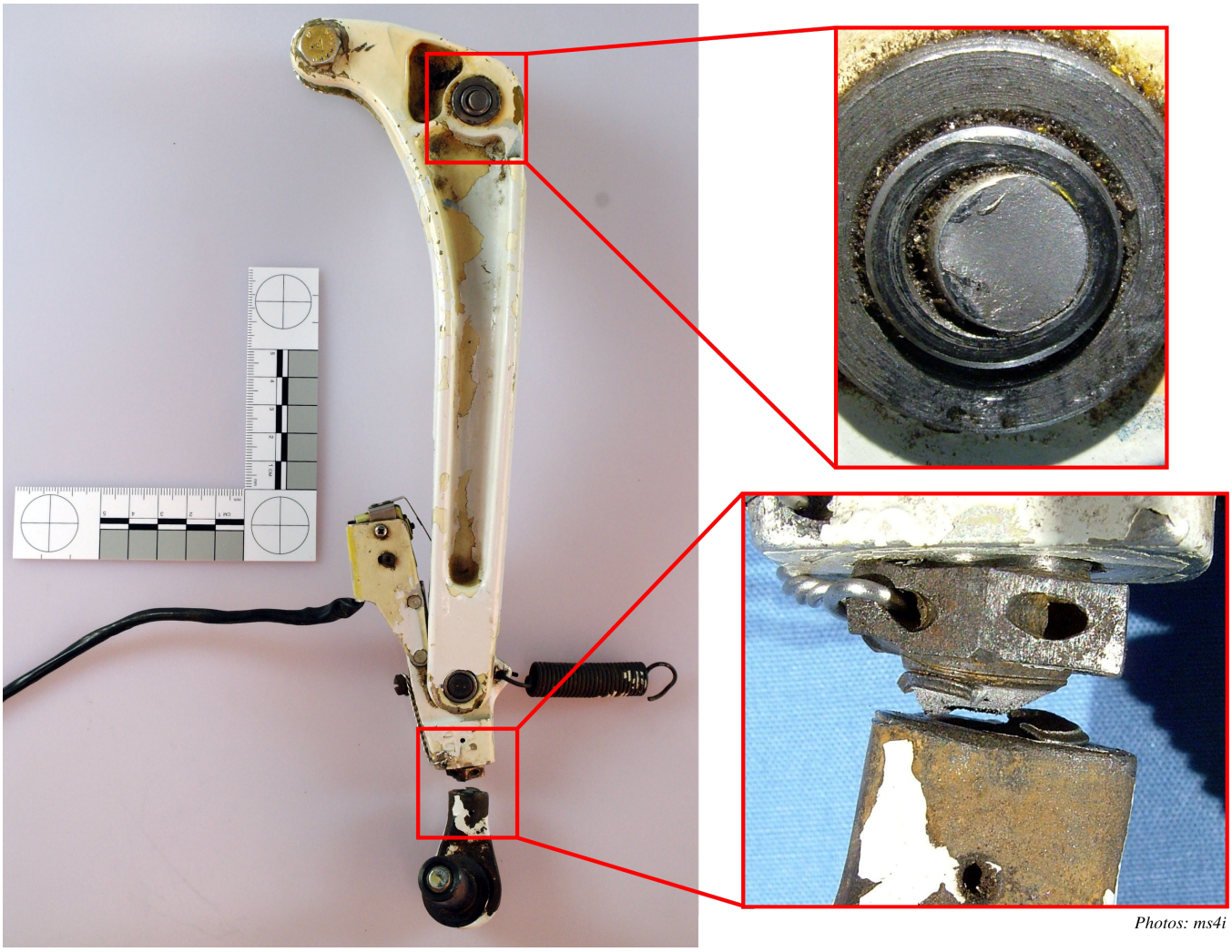
Metallurgical analysis

A visual metallurgical analysis of the fractured downlock link adjusting screw and bellcrank pivot bolt was performed by an independent metallurgist (Figure 4), in addition to hardness testing of the adjusting screw material.

The metallurgist concluded that the downlock link adjusting screw had failed in a single, non-reversed, bending overload event. The fracture surfaces did not show any macroscopic evidence of pre-existing cracks, material defects or anomalies associated with crack initiation, and there was no evidence of slow crack growth mechanisms such as fatigue or stress corrosion cracking. The adjusting screw's material was found to

Footnote

[1] National Institute of Standards and Technology, USA.



Photos: ms4i

Figure 4

Fracture surfaces of the bellcrank pivot bolt and downlock link adjusting screw

be within specification for composition and mechanical properties.

The bellcrank pivot bolt was determined to have failed in single shear, resulting from a single overload event, and the fracture surface did not show any evidence of pre-existing cracking or material defects.

Analysis

Failure mode of the landing gear

Based on the observed damage to the right main landing gear components, it is probable that the downlock link or side brace, or both, were not sufficiently geometrically over-centre at the point the aircraft landed. In this condition, any inboard side-load generated by the right landing gear would cause the side brace to begin to fold, leading to the observed bending overload failure of the downlock link adjusting screw. Further rotation of the right landing gear leg would have then loaded

the push-pull tube in tension, resulting in the tensile failure of the pivot bolt lug and single shear overload of the pivot bolt.

Cause of the landing gear collapse

The investigation was unable to resolve the conflicting evidence that, despite the landing gear being reported as having locked in the DOWN position, with three green DOWN position indicator lights visible to the pilot, the right main landing gear collapsed during a normal landing. Despite the omission of the 'free-fall' downlock link adjustment task during the landing gear maintenance activity, when tested, the over-centre breakout tensions on both main landing gear downlock links were within Service Manual limits. Therefore the omission of this maintenance task was not considered to be causal to the consequent landing gear collapse.

Deformation of the mounting bracket of the position-sensing microswitch on the right main landing gear, and fracture of the right downlock link adjusting screw, prevented subsequent functional testing of the landing gear system in the same condition that it had been in prior to the accident. Consequently the cause of the landing gear collapse was not positively identified.

ACCIDENT

Aircraft Type and Registration:	AT-16 Harvard IIB, G-AZSC
No & Type of Engines:	1 Pratt & Whitney R-1340-AN-1 piston engine
Year of Manufacture:	1943
Date & Time (UTC):	22 July 2011 at 1506 hrs
Location:	1.5 miles from Goodwood Aerodrome, West Sussex
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Propeller, engine, undercarriage up-lock castings
Commander's Licence:	Private Pilot's Licence
Commander's Age:	55 years
Commander's Flying Experience:	943 hours (of which 45 were on type) Last 90 days - 4 hours Last 28 days - 1 hour
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

During a high-speed, low-level pass as part of a practice air display, the low fuel pressure warning light illuminated and the engine stopped. A successful gear-up landing was made in a nearby field. A subsequent inspection found no fuel in the tank selected although it was reported that the fuel gauges had each indicated about 30 gallons shortly before the engine had stopped.

History of the flight

During a practice air display, the pilot dived the aircraft from 2,000 ft to 200 ft over the threshold of Runway 32 on runway heading, and reached the planned 'gate' speed of 240 mph. On levelling out and about midway down the runway, the low fuel pressure warning light illuminated. The pilot used the aircraft's fuel 'wobble pump' to try to restore pressure but this was unsuccessful and the engine cut out shortly afterwards. No attempt was made to change from the left wing main fuel tank in use at the time.

The pilot climbed to increase his height and reduce speed. He lowered the landing gear but the airspeed decayed rapidly such that a forced landing in a crop field directly ahead would have become necessary. He then retracted the gear so that a glide speed of 100 mph could be maintained in order to reach a more suitable field.

The aircraft touched down smoothly, gear up, and stopped well before the field boundary. The uninjured

pilot, who was wearing a full harness, made the aircraft safe before exiting.

A later inspection of the aircraft found no faults with the fuel system and about 14 gallons in the reserve section of the left wing fuel tank. The left wing fuel tank uses an extended standpipe from which to take fuel. The fuel below the top of the standpipe is the reserve supply which can be selected on the fuel selector valve (the other selections are the left tank, right tank and off). The capacity of the reserve is 15.8 gallons which is included in the reading of the left tank fuel gauge. The pilot stated that the fuel gauges had each indicated 30 gallons prior to the dive. However, the light illuminating the left gauge was not working but the quantity seemed to agree roughly with the usage he was expecting based on the duration of the flight so far, and the duration of the previous flight told to him by the pilot of that flight. The pilot now believes he misread the gauge and that the time he had been told for the previous flight was in fact flight time only.

ACCIDENT

Aircraft Type and Registration:	Cessna F172H Skyhawk, G-AWMP
No & Type of Engines:	1 Lycoming O-360-A4M piston engine
Year of Manufacture:	1968
Date & Time (UTC):	8 October 2011 at 1524 hrs
Location:	Nene Valley Gliding Club, Cambridgeshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - 1 (Minor) Passengers - N/A
Nature of Damage:	Substantial
Commander's Licence:	Private Pilot's Licence
Commander's Age:	69 years
Commander's Flying Experience:	8,583 hours (of which 6,000 were on type) Last 90 days - 80 hours Last 28 days - 24 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Shortly after takeoff the engine lost power and the pilot carried out a forced landing in a field during which the aircraft sustained substantial damage. The pilot suffered a minor injury to his face but was able to vacate the aircraft unaided.

The airfield's surface consisted of long grass which was wet. The weather conditions were reported as: 4,000 m visibility in drizzle, broken cloud at 700 ft and overcast at 800 ft. The pilot candidly commented that he considered carburettor icing to be the most likely cause of the power loss as the conditions during the long taxi to the takeoff point were conducive to its formation. He had conducted a carburettor heat check as part of his pre-takeoff checks by selecting the carburettor heat ON and then OFF again immediately after seeing a normal rpm drop. With hindsight, he acknowledges that a longer application of carburettor heat would have probably identified the presence of induction ice and ensured its removal before flight. CAA Safety Sense Leaflet 14, '*Piston Engine Icing*', contains useful information and guidance for avoiding induction system icing.

ACCIDENT

Aircraft Type and Registration:	Europa XS (prototype motorglider), G-CBHI
No & Type of Engines:	1 Rotax 912 ULS piston engine
Year of Manufacture:	2001
Date & Time (UTC):	18 October 2011 at 1530 hrs
Location:	Chilbolton (Stonefield Park) Airfield, Hampshire
Type of Flight:	Flight test
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Propeller blade tip and wheelbay damaged
Commander's Licence:	Commercial Pilot's Licence
Commander's Age:	58 years
Commander's Flying Experience:	11,311 hours (of which 80 were on type) Last 90 days - 24 hours Last 28 days - 13 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and AAIB enquires

Synopsis

The pilot landed the aircraft with the landing gear unintentionally in the retracted position.

History of the flight

The pilot had been conducting a series of spin trials on a prototype motor glider and was on his third flight that day when he returned to Chilbolton Airfield. As the wind strength had started to increase, he elected to land into wind by landing at a slight angle across the grass runway. This required the pilot to fly a curved approach and a short final while taking care to remain clear of a tall hedge, overhead cables and their supporting poles. The pilot states that while he carried out his pre-landing checks, due to the short final approach and his focus in ensuring that he cleared the obstacles, he had given himself insufficient time to confirm that he had completed all the checks before landing. The aircraft landed with the landing gear retracted and the airbrakes extended.

Aircraft description

G-CBHI is an Europa XS, home-built aircraft that at the time of the incident had been fitted with a glider wing and was operating on a Permit Flight Release Certificate, issued by the Light Aircraft Association (LAA), in order for spin tests to be carried out.

The Europa XS is normally fitted with a 27.12 ft wing equipped with trailing edge flaps. The flaps and the

landing gear are operated by a single lever mounted on the centre console located between the seats (see Figure 1). Moving this lever rearward causes the flaps and landing gear to extend. At normal approach speeds, with the flaps retracted, the aircraft adopts a high-nose attitude which reduces the pilot's view of the runway. Selecting the landing gear and flaps to the extended position results in the aircraft adopting a significant nose-down attitude, which alerts the pilot to the fact that the gear has been extended. It was for this reason that it had been perceived that there was no requirement for a gear warning system.

The motor glider variant of the Europa XS is equipped with a 47.25 ft glider wing fitted with trailing edge airbrakes. On G-CBHI the airbrake lever had been mounted next to the landing gear lever. Moving the airbrake lever rearward causes the airbrakes to extend. With the landing gear and airbrakes extended, there is negligible change in the aircraft attitude and therefore the pilot would be unable to tell from the attitude of the aircraft if the landing gear had been extended.

Neither variant of the Europa XS is fitted with a landing gear position indicator or a warning horn.

Comment

The pilot had considerable experience on the standard, short wing variant of the Europa XS where there is a significant change in the pitch attitude when the landing gear and flaps are extended. However, this change in attitude does not occur on the motor glider variant of the Europa XS. Ergonomic factors resulting from the positioning of the airbrake and landing gear lever, which also operate in the same sense, might also have been a factor in this accident.

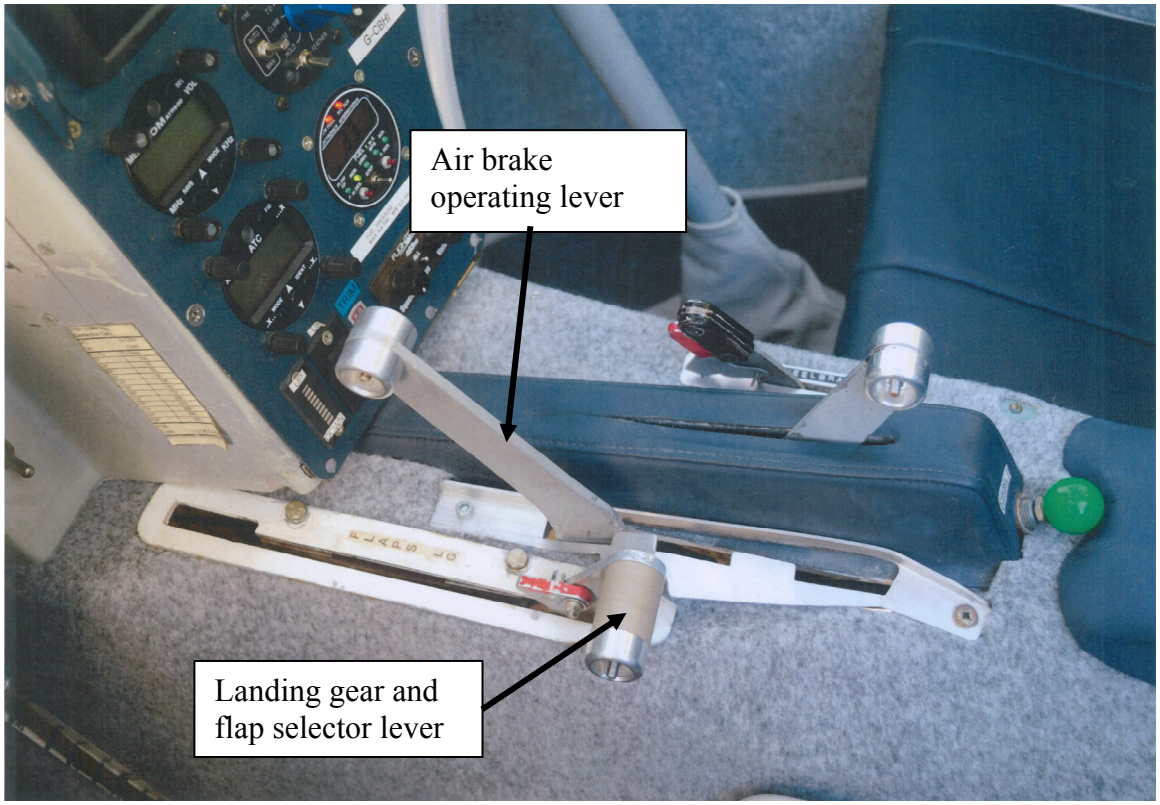


Figure 1

Location of landing gear and flap operating lever

At the time of the accident, G-CBHI was the only prototype variant of the Europa XS motor glider operating in the UK. The LAA have advised that they would review the location of the landing gear and airbrake levers, and the need for a gear position warning system, during the acceptance process prior to Type Approval being awarded.

ACCIDENT

Aircraft Type and Registration:	Fokker DR1, (Replica) SE-XXZ
No & Type of Engines:	1 Le Rhone 9VB piston engine
Year of Manufacture:	2008
Date & Time (UTC):	10 July 2011 at 1422 hrs
Location:	Duxford Airfield, Cambridgeshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Right wingtip, fuselage and engine mount damaged
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	51 years
Commander's Flying Experience:	12,500 hours (of which 10 were on type) Last 90 days - n/k hours Last 28 days - n/k hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

The replica WWI fighter had landed after a display, when the pilot lost control during the ground roll. He stated that thia was due to the propeller wash from a Hawker Sea Fury starting up as he passed behind it.

History of the flight

The aircraft, which was a replica of the WW1 Fokker DR1 triplane and powered by a Le Rhone rotary engine, was landing after taking part in a flying display. Pilots had been briefed that, during the display, they could either use the paved Runway 24, or the parallel grass runway (see Figure 1). If choosing the latter, then they were able to use all the grass area for landing or taxiing. The pilot of SE-XXZ chose to land initially on the marked grass runway, but heading slightly to the right in order to ensure that he remained into wind, which he estimated as being roughly 5 kt.

This heading meant that the latter part of the landing roll took the aircraft closer to a line of parked display aircraft, mostly WWII 'warbird' types, which were parked with their tails towards the runway. As he passed behind a Hawker Sea Fury, its engine was started and the pilot of SE-XXZ stated that the propeller wash caused him to lose directional control. The left landing gear tyre rolled off the rim, which dug into the ground and caused the aircraft to pitch forward coming to rest with the tail upright. The pilot was uninjured and was able to evacuate the aircraft with the assistance of the first people to arrive at the location.

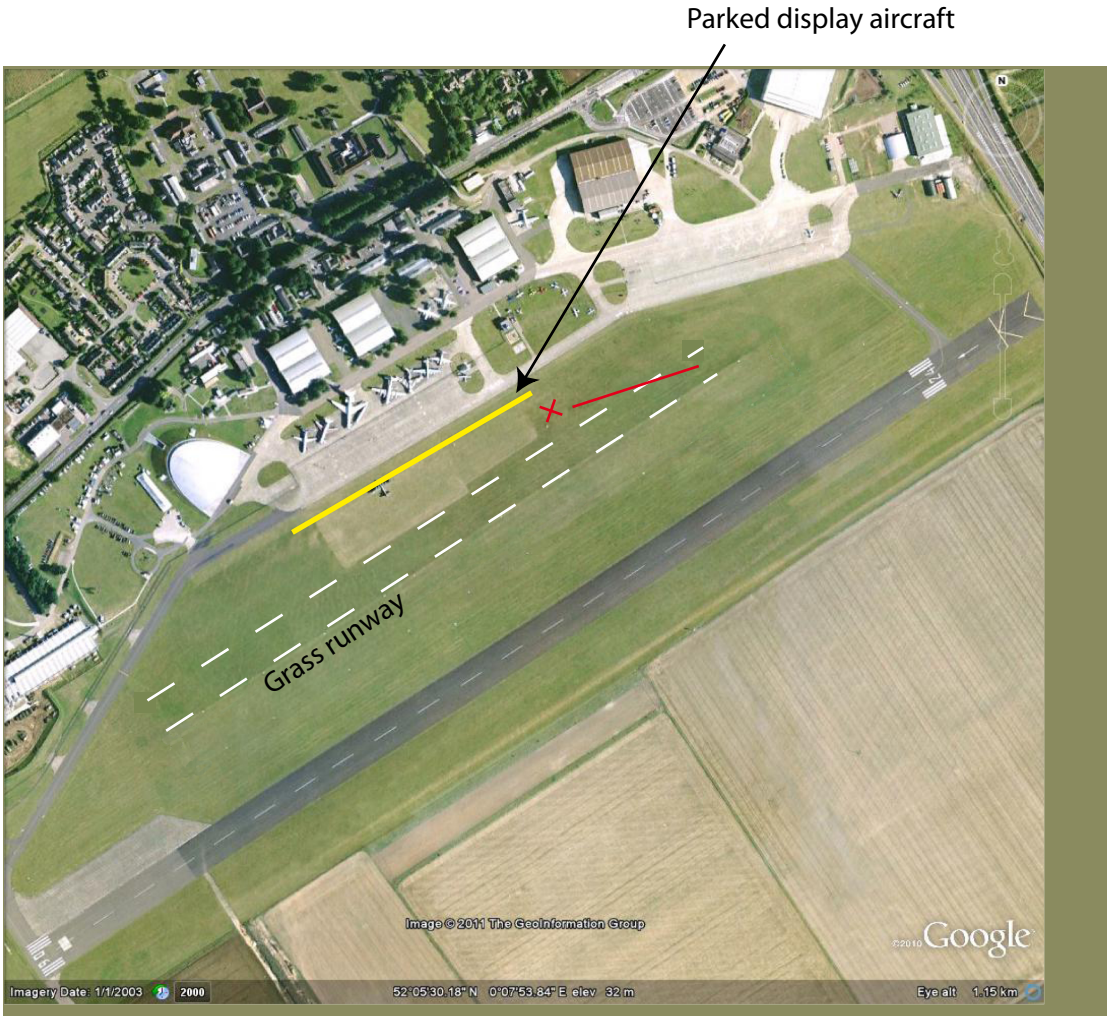


Figure 1

Landing roll of SE-XXZ interpreted from a sketch provided by the pilot

In response to concerns, from onlookers and other pilots, that the airfield emergency vehicles seemed to take a long time to attend the scene, the display organisers and the airfield management found that there had been some uncertainty over clearance to enter the aircraft manoeuvring areas. The procedures have now been changed to require immediate suspension of aircraft activity on the ground (and holding of airborne aircraft) in the event of a similar incident in order that emergency vehicles can be certain that they will not conflict with flying operations.

ACCIDENT

Aircraft Type and Registration:	Jodel D120 Paris-Nice, G-BKAE
No & Type of Engines:	1 Continental Motors Corp C90-14F piston engine
Year of Manufacture:	1961
Date & Time (UTC):	16 September 2011 at 1200 hrs
Location:	Sleap Airfield, Shropshire
Type of Flight:	Training
Persons on Board:	Crew - 2 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Both main landing gear legs, propeller and left wing damaged
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	59 years
Commander's Flying Experience:	12,553 hours (of which 50 were on type) Last 90 days - 24 hours Last 28 days - 16 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

A swing to the left developed early in the takeoff roll on an instructional flight. Both pilots applied right rudder, which resulted in a yaw to the right which was not controlled before the left wing contacted the runway and the landing gear collapsed. The lack of time that the pilot had to prepare mentally for the takeoff, and an unconventional takeoff technique taught by the instructor, probably contributed to the accident.

History of the flight

The pilot, who was also the owner of the aircraft, was being instructed by an instructor under the Light Aircraft Association (LAA) pilotage coaching scheme. During the previous 45 minute flight earlier that day, the pilot had practised circuit procedures but the instructor had carried out all of the takeoffs and landings. After boarding the aircraft on the accident flight, the instructor informed the pilot that he wanted him to carry out the takeoff; this was to be the pilot's first attempt at this manoeuvre in a tailwheel aircraft. The pilot stated that the instructor had not told him beforehand that he was to carry out the takeoff, that he had not felt mentally prepared to carry it out but that he decided not to inform the instructor. At the start of the takeoff, the pilot held the aircraft stationary with the brakes and applied approximately 2,000 rpm before releasing the wheelbrake pedals. As the aircraft began the takeoff run, it started to swing to the left and the

pilot applied right rudder. He stated, however, that he over-corrected for the swing and this resulted in the aircraft yawing to the right through approximately 180°. The yaw became uncontrollable, the left wing contacted the runway and the undercarriage collapsed. The instructor stated that, after the swing to the left developed, he rapidly applied right rudder. The crew vacated the aircraft without injury.

Aircraft wheelbrake controls

The aircraft was equipped with separate wheelbrake pedals and rudder pedals. Wheelbrake pedals were fitted to the left seat position only. The pedals were arranged side by side with the two wheelbrake pedals positioned inside the two left seat rudder pedals but not connected to them. Each brake pedal controlled the brake unit on its respective mainwheel but the wheelbrake pedals did not control the rudder.

Action taken

The LAA has issued additional guidance to LAA coaches on training in aircraft with brakes at the P1 position only.

Removal of damaged aircraft

The aircraft was removed from the runway before the AAIB was informed of the incident.

Regulation 7 of The Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996 states:

> *'7.—(1) Subject to paragraph (2) and regulation 9 below, where an accident, or a serious incident which results in the withdrawal from service of an aircraft, occurs in or over the United Kingdom no person other than an authorised person shall have access to the aircraft involved and neither the aircraft nor its contents shall, except under the authority of the Secretary of State, be removed or otherwise interfered with.'*

Analysis

The pilot was not mentally prepared to carry out the takeoff because he was not briefed that he was to carry out the manoeuvre until after he boarded the aircraft. The takeoff technique used by the pilot of applying power against the brakes was the technique that the instructor had taught him. The technique used differed from the conventional tailwheel takeoff technique whereby pilots usually increase engine power progressively as an aircraft accelerates so that they can detect, and compensate for, any swing as soon as it develops.

Releasing the brakes with significant power applied can cause a tailwheel aircraft to yaw markedly if the pilot does not release the wheelbrakes symmetrically. Additionally, after the pilot releases the wheelbrake pedals, the aircraft will accelerate and there will be a short period, while the pilot repositions his feet on the rudder pedals, during which he will be unable to control any power-induced yaw. This was probably a factor in causing the initial swing to the left.

The pilot applied right rudder to correct the swing to the left and the Instructor intervened to do the same. It is possible that the resulting rudder input was greater than either pilot had intended, and caused an uncontrollable yaw to the right.

Conclusion

The accident was probably resulted from the application, in response to a swing to the left, of right rudder by both pilots resulting in an uncontrollable yaw to the

right. The lack of time that the pilot had to prepare for the takeoff mentally and the unconventional takeoff technique taught by the instructor probably contributed to the accident.

ACCIDENT

Aircraft Type and Registration:	Piper PA-28-140 Cherokee, G-BCGJ
No & Type of Engines:	1 Lycoming O-320-E2A piston engine
Year of Manufacture:	1974
Date & Time (UTC):	3 September 2011 at 1218 hrs
Location:	Oxford Airport, Oxfordshire
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 cowling, engine shock-loaded
Commander's Licence:	Student
Commander's Age:	38 years
Commander's Flying Experience:	70 hours (of which 70 were on type) Last 90 days - 5 hours Last 28 days - 4 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Following a session of five dual circuits, all of which were described by the student's instructor as being well flown, the student was instructed to delay flying solo circuits until the cloudbase had risen above 1,500 ft aal. This occurred approximately 30 minutes later and the instructor, who was flying in another aircraft, authorised the student by radio to fly a session of solo circuits. Runway 19 was in use and the surface wind was reported by ATC as 210º at 14 kt.

The student flew two circuits successfully but on the third circuit the aircraft was observed to bounce on landing, becoming airborne again. It was then observed to pitch nose-down before bouncing for a second time, following which the aircraft struck the runway causing the nose landing gear to detach. The aircraft remained on the runway, sliding to a halt on its nose and after turning the fuel selector, ignition and battery master switch to OFF, the student vacated the aircraft.

The instructor commented that the student had been trained to go-around after a bounced landing and that additional training on this point would be provided to assist the student in regaining confidence following the accident.

ACCIDENT

Aircraft Type and Registration:	Piper PA-28-181, N4144N
No & Type of Engines:	1 Lycoming 0-360-A4M piston engine
Year of Manufacture:	2000
Date & Time (UTC):	22 October 2011 at 1110 hrs
Location:	Alderney Airport
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Left brake damaged and left wing dented
Commander's Licence:	Private Pilot's Licence
Commander's Age:	62 years
Commander's Flying Experience:	389 hours (of which 150 were on type) Last 90 days - 13 hours Last 28 days - 4 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Whilst landing on asphalt Runway 08 at Alderney, the aircraft bounced before drifting to the left of the runway centreline. The reported wind was 170° at 14 kt (the aircraft maximum demonstrated crosswind limit is 17 kt). As the aircraft touched down for a second time, the left mainwheel struck a runway edge light, which rendered the left brake inoperative. Approaching the end of the runway, the pilot applied heavy right wheel braking and right rudder, with the intent of making a 180° turn. The aircraft departed the right side of the runway, where it struck a wooden fence post and came to a stop. The pilot and passenger were uninjured and exited the aircraft through the cabin door.

The pilot considered that the cause of the accident had been the inability to control the left drift following the initial touchdown.

ACCIDENT

Aircraft Type and Registration:	Piper PA-34 Seneca V, N199PS
No & Type of Engines:	2 Continental Motors Corp LTSIO-360-RB piston engines
Year of Manufacture:	1999
Date & Time (UTC):	27 September 2011 at 1705 hrs
Location:	Bembridge Airport, Isle of Wight
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 5
Injuries:	Crew - None Passengers - None
Nature of Damage:	Propeller tips and right wing
Commander's Licence:	Private Pilot's Licence
Commander's Age:	56 years
Commander's Flying Experience:	520 hours (of which 66 were on type) Last 90 days - 5 hours Last 28 days - 2 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent enquiries

The pilot made an approach to land on Runway 12 at Bembridge, an airfield he had not flown to before. The aircraft bounced on landing which surprised him. A second, harder bounce occurred before he flew a go-around. The second approach and subsequent landing were reported as smooth. After shutdown, the pilot noticed damage to the tips of the right propeller and a later inspection by an engineer identified a crease in the right wing.

The pilot reported that despite a smooth flight, a number of the passengers had become air sick and vomited. He considered that this was a distraction and may have contributed to his reluctance to go around after the first bounce. He also stated that the runway had a downward slope which he was not expecting as it was not mentioned in his airfield reference material (a popular airfield guide and the local gliding club website). The pilot considered that whilst this was not causal, it contributed to the event.

The aircraft's weight and balance were within landing limits. The repair agency reported no evidence of pre-existing conditions that would have weakened the damaged area of the wing.

ACCIDENT

Aircraft Type and Registration:	Vans RV-6A, G-RVNI
No & Type of Engines:	1 Lycoming O-320-D2A piston engine
Year of Manufacture:	2008
Date & Time (UTC):	3 September 2011 at 1415 hrs
Location:	Causeway Airfield, Co Londonderry, Northern Ireland
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Severe damage to nose and wings
Commander's Licence:	Private Pilot's Licence
Commander's Age:	50 years
Commander's Flying Experience:	203 hours (of which 19 were on type) Last 90 days - 6 hours Last 28 days - 2 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

After lining up on Runway 16 the pilot applied full power and the aircraft began to accelerate along the runway. The pilot reported that the takeoff run appeared to be progressing normally, with right rudder applied to maintain the runway heading. As the aircraft's speed approached 55 kt he applied backpressure to the control column to raise the nose, but the aircraft pitched up uncontrollably. The aircraft then veered to the right and passed through a fence, coming to rest in a field adjacent to the airfield. Both occupants were uninjured and were able to leave the aircraft without assistance.

The pilot attributed the accident to a lack of experience in operating from grass runways and the possibility that the nosewheel struck an undulation in the runway surface as back pressure was applied to the control column.

ACCIDENT

Aircraft Type and Registration:	Cyclone AX3/503, G-MYXH
No & Type of Engines:	1 Rotax 503 piston engine
Year of Manufacture:	1995
Date & Time (UTC):	14 June 2011 at 1030 hrs
Location:	Andrewsfield Airfield, Essex
Type of Flight:	Training
Persons on Board:	Crew - 2 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Right main landing gear
Commander's Licence:	Private Pilot's Licence
Commander's Age:	35 years
Commander's Flying Experience:	230 hours (of which 175 were on type) Last 90 days - 60 hours Last 28 days - 30 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional inquiries by the AAIB

Synopsis

The right mainwheel separated from the aircraft after it landed heavily on the takeoff runway following a practice engine failure after takeoff (EFATO) demonstrated by the instructor.

History of the flight

The AX3/503 is a three-axis microlight aircraft. The pilot, who held an assistant flight instructor (AFI) Rating Microlights, was demonstrating an engine failure after takeoff (EFATO) to his student with the intention of landing ahead on the takeoff runway. The reported wind was from 210° at 5 kt. The takeoff run was normal and, at a height of about 100 ft and an airspeed of approximately 50 mph (the stall speed is 31 mph at MTOW), the instructor closed the throttle and applied nose-down pitch. He recalled that the airspeed appeared normal and at a height of approximately 30 ft he started to flare the aircraft. However, it touched down heavily and the right mainwheel separated. The aircraft stopped, halfway down the 800 m runway. The instructor and student were uninjured.

The BMAA Instructor and Examiner Guide (dated June 2006), which includes information on EFATO training, requires demonstrations to be carried out at both 50 ft and 200 ft. The instructor had flown practice EFATOs, in the same aircraft type, during his AFI training and stated that, on the day of the accident, he

had initiated the practice EFATO at 100 ft as, in his opinion, 50 ft was too low. He had recent experience of carrying out glide approaches from circuit height, but had not flown this particular practice EFATO exercise for about nine months.

Discussions with pilots, familiar with the AX3/503, indicate that the aircraft will lose airspeed rapidly when engine power is reduced, and the occurrence report, submitted by the instructor to the CAA stated that "on reflection round-out was too late….power should have been applied slightly earlier within seconds to counter drag".

The instructor considered that his recency had not been a factor in the accident.

ACCIDENT

Aircraft Type and Registration:	Jabiru UL-D, G-CDKP
No & Type of Engines:	1 Jabiru Aircraft Pty 2200B piston engine
Year of Manufacture:	2005
Date & Time (UTC):	24 August 2011 at 1504 hrs
Location:	Earls Colne Airfield, Essex
Type of Flight:	Training
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Propeller, suspension bracket
Commander's Licence:	Student
Commander's Age:	52 years
Commander's Flying Experience:	35 hours (of which 35 were on type) Last 90 days - 7 hours Last 28 days - 1 hour
Information Source:	Aircraft Accident Report Form submitted by the pilot

Following arrival from Damyns Hall, the student pilot flew a left-hand circuit to land on Runway 24. The flare was late, causing the aircraft to land heavily. It then bounced and landed again heavily on all three wheels. Vibration was noted during subsequent taxiing. Post-flight inspection of the aircraft revealed damage to the propeller blade tips and a bent nose leg shock absorber.

ACCIDENT

Aircraft Type and Registration:	Kolb Twinstar MKIII (Modified), G-MYOR
No & Type of Engines:	1 Hirth 2705 RO6 piston engine
Year of Manufacture:	1994
Date & Time (UTC):	18 September 2011 at 0730 hrs
Location:	Mount Airey Airfield, South Cave, Yorkshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Damage to the landing gear and airframe
Commander's Licence:	Private Pilot's Licence
Commander's Age:	56 years
Commander's Flying Experience:	165 hours (of which 1 was on type) Last 90 days - 2 hours Last 28 days - 2 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

The pilot was carrying out high-speed taxi runs along grass Runway 25, following the replacement of some of the aircraft's fuel components. Since purchasing his "tail dragger", he had flown one short sortie in it with an instructor, during which he completed two circuits.

As the pilot passed the halfway point along Runway 25, at a speed of approximately 35 mph, the aircraft became airborne. This was a surprise to the pilot, as he believed it was necessary on tail-wheeled aircraft to lift the tail first before taking off, by moving the control column forward, and he still had the control column fully back. Having realised he was airborne, the pilot judged there was insufficient runway remaining, so he completed a circuit. On final approach, at a height of about 15 ft and approximately 10 mph above the stall speed, with full flaps selected, the aircraft appeared to lose flying speed and "flopped" into a field, approximately 30 ft short of the runway. The landing gear and cockpit structure were damaged but the pilot was uninjured.

The pilot considered the accident occurred because of his inexperience on the aircraft and that he allowed the airspeed to become too low.

ACCIDENT

Aircraft Type and Registration:	Quik GT450, G-TPAL
No & Type of Engines:	1 Rotax 912ULS piston engine
Year of Manufacture:	2008
Date & Time (UTC):	28 September 2011 at 1515 hrs
Location:	East Fortune Airfield, East Lothian
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Nosewheel, pod and keel tube
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	58 years
Commander's Flying Experience:	321 hours (of which 321 were on type) Last 90 days - 8 hours Last 28 days - 3 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

The aircraft experienced windshear whilst on final approach and descended rapidly from approximately 20 ft. The pilot was unable to arrest the high rate of descent, despite adding full power, and the aircraft landed heavily, nosewheel first and bounced. The second touchdown was in a normal attitude but the nosewheel assembly collapsed during the ground roll. The two occupants were uninjured. The wind direction was reported as varying between 180 and 230° at 15 kt with gusts up to 20 kt. The pilot subsequently discussed the event with instructors based at the airfield and concluded that he may have not have made a sufficient adjustment to his final approach airspeed for the prevailing gusty conditions.

ACCIDENT

Aircraft Type and Registration:	Shadow Series CD, G-MYOS
No & Type of Engines:	1 Rotax 503-2V piston engine
Year of Manufacture:	1994
Date & Time (UTC):	15 September 2011 at 1805 hrs
Location:	Craysmarsh Farm, Wiltshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Tail boom collapsed
Commander's Licence:	Private Pilot's Licence
Commander's Age:	65 years
Commander's Flying Experience:	233 hours (of which 233 were on type) Last 90 days - 5 hours Last 28 days - 3 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

During the flight, the pilot encountered difficulty trimming the aircraft and reported that in order to maintain straight and level flight, a higher than usual power setting and significant levels of nose-up trim were required. When reducing power in preparation for landing, the control stick became heavy and the aircraft pitched rapidly downwards. The pilot was able to maintain control until just prior to flaring, when the nose pitched rapidly up and the aircraft dropped to the ground, landing heavily. Post-flight inspection by the pilot revealed that the tail boom had collapsed. The pilot considered that a runaway trim condition may have accounted for the control difficulties encountered during the flight. The repair agency checked the operation of the electrically operated elevator trim tab and although it functioned normally when tested, the trim system was replaced as a precaution.

ACCIDENT

Aircraft Type and Registration:	X'Air R100(1), G-BZER
No & Type of Engines:	1 BMW R100RS piston engine
Year of Manufacture:	2000
Date & Time (UTC):	11 July 2011 at 1950 hrs
Location:	Outskirts of Mold, Flintshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Nose landing gear, propellor, engine and pod damaged
Commander's Licence:	Private Pilot's Licence
Commander's Age:	70 years
Commander's Flying Experience:	380 hours (of which 215 were on type) Last 90 days - 18 hours Last 28 days - 4 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Whilst in level flight at cruise power, the engine suddenly coughed, began to run roughly and suffered a significant power drop. The pilot reduced the throttle setting to minimise the roughness, placed the aircraft in a glide at about 55 mph and searched for a suitable location for a forced landing. With limited options available, he chose a long field of barley crop ahead of him. He was aware of power lines near each end of the field. Once he could see the nearest and was confident of clearing it, he closed the throttle and switched off the master switch. He held off at a height of approximately 10 ft and gently flared the aircraft. As it contacted the dense crop it slowed suddenly and pitched forward, causing the nose gear to hit the soft ground and collapse. After sliding about 40 ft the aircraft gently pitched over inverted, coming to rest on top of the crop. The pilot was uninjured.

Subsequent examination revealed that the head of the exhaust valve on the left cylinder had become detached from its stem, causing extensive internal damage to the engine.

FORMAL AIRCRAFT ACCIDENT REPORTS ISSUED BY THE AIR ACCIDENTS INVESTIGATION BRANCH

2010

1/2010 Boeing 777-236ER, G-YMMM at London Heathrow Airport on 17 January 2008.
Published February 2010.

2/2010 Beech 200C Super King Air, VQ-TIU at 1 nm south-east of North Caicos Airport, Turks and Caicos Islands, British West Indies on 6 February 2007.
Published May 2010.

3/2010 Cessna Citation 500, VP-BGE 2 nm NNE of Biggin Hill Airport on 30 March 2008.
Published May 2010.

4/2010 Boeing 777-236, G-VIIR at Robert L Bradshaw Int Airport St Kitts, West Indies on 26 September 2009.
Published September 2010.

5/2010 Grob G115E (Tutor), G-BYXR and Standard Cirrus Glider, G-CKHT Drayton, Oxfordshire on 14 June 2009.
Published September 2010.

6/2010 Grob G115E Tutor, G-BYUT and Grob G115E Tutor, G-BYVN near Porthcawl, South Wales on 11 February 2009.
Published November 2010.

7/2010 Aerospatiale (Eurocopter) AS 332L Super Puma, G-PUMI at Aberdeen Airport, Scotland on 13 October 2006.
Published November 2010.

8/2010 Cessna 402C, G-EYES and Rand KR-2, G-BOLZ near Coventry Airport on 17 August 2008.
Published December 2010.

2011

1/2011 Eurocopter EC225 LP Super Puma, G-REDU near the Eastern Trough Area Project Central Production Facility Platform in the North Sea on 18 February 2009.
Published September 2011.

2/2011 Aerospatiale (Eurocopter) AS332 L2 Super Puma, G-REDL 11 nm NE of Peterhead, Scotland on 1 April 2009.
Published November 2011.

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