

ACCIDENT

Aircraft Type and Registration:	Flight Design CT2K, G-CBDJ	
No & Type of Engines:	1 Rotax 912ULS piston engine	
Year of Manufacture:	2001 (Serial no: 7850)	
Date & Time (UTC):	24 March 2022 at 1400 hrs	
Location:	Beccles Aerodrome, Suffolk	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - 1 (Fatal)	Passengers - N/A
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	87 years	
Commander's Flying Experience:	2,677 hours (of which 1,621 were on type) Last 90 days - 20 hours Last 28 days - 9 hours	
Information Source:	AAIB Field Investigation	

Synopsis

The aircraft was on a flight from Temple Bruer airstrip, Lincolnshire to Beccles Aerodrome, Suffolk. The approach was described as "unstable". The aircraft bounced on landing and probably stalled. The pilot was fatally injured when the aircraft subsequently struck the ground.

The pilot was familiar with his aircraft and in recent practice, but the landing diverged from his intended plan. Given that he was 87 years old and recognised that he would likely have to stop flying in the near future, it is possible that some age-related deterioration in human performance was a factor in this accident. The investigation highlighted a lack of medical guidance for both pilots and medical professionals, as well as a cohort of private pilots who are not subject to an independent professional assessment of age-related deterioration in piloting ability. Four Safety Recommendations have been made to the CAA, three about the Pilot Medical Declaration and one about the revalidation of ratings.

History of the flight

The pilot was a member of a small aviation group that flew from Temple Bruer airstrip, Lincolnshire, which is located just outside the northern Aerodrome Traffic Zone (ATZ) boundary of RAF Cranwell. On the day of the accident, he planned to fly from Temple Bruer to Beccles Aerodrome, Suffolk, which he had visited on two previous occasions.

The weather for the route was clear with light winds from the east. The pilot booked out at Temple Bruer and took off at 1246 hrs, climbing on a south-easterly heading. Three minutes later the pilot informed Cranwell ATC that he was returning to Temple Bruer with a "SLIGHT PROBLEM". Approximately one minute later he informed ATC that the problem had been solved and that he was continuing towards Beccles.

The pilot continued on a south-easterly course, operating at altitudes up to 3,500 ft amsl. At 1350 hrs he contacted Beccles Radio requesting the airfield details; the radio operator responded that Runway 09 was in use and that the wind was from the east at less than five knots. The pilot positioned to join downwind then established on a final approach, reporting both positions on the radio. The radio operator replied to the final call, passing the wind direction and speed.

Eyewitness accounts described the final approach of G-CBDJ as "unstable" in roll and pitch initially, then becoming stable before touching down on its main wheels approximately 50 m in from the threshold. The aircraft was observed to bounce to around 10 ft into the air before touching down again on the nosewheel. It bounced a second time and pitched markedly nose up, described as being to 45° as it appeared to climb away. On reaching around 100 ft above the runway, witnesses described the aircraft veering to the left and rolling to approximately 90° angle of bank before the nose "dropped" and the aircraft fell to the ground in a field adjacent to the runway. No witnesses interviewed by the AAIB could recall hearing sounds of the aircraft's engine increasing power after either landing attempt. There were no reports of turbulence on final approach on the day of the accident.

The aerodrome Rescue and Fire Fighting Service (RFFS) vehicle arrived quickly at the aircraft and found the pilot in the left seat with the safety harness in place, breathing but unresponsive. Recognising that they would not be able to release him safely from the wreckage, the RFFS crew continued to provide reassurance to the pilot and monitored the aircraft for signs of fire until further assistance arrived. They established that the aircraft was fitted with a Ballistic Parachute Recovery System (BPRS). An ambulance arrived at 1404 hrs followed by the Fire Service at 1412 hrs. The Helicopter Emergency Medical Service (HEMS) then arrived at 1420 hrs. The HEMS doctor determined that the pilot had succumbed to his injuries and died at the scene.

Accident site

The aircraft came to rest approximately 100 m to the north of Runway 09 and 240 m from the threshold. Both wings had detached from the fuselage, with the lower surfaces upper most. The fuselage was on its right side, on top of the wings with severe disruption to the nose section (Figure 1). The field to the north of the runway was planted with a rapeseed crop which was approximately 1 m in height. The crop was heavily damaged in the immediate area of the aircraft and there was a short visible swath cut into the crop (highlighted in Figure 1 right) that was consistent with the left wingtip being the first part of the aircraft to make contact with the field.

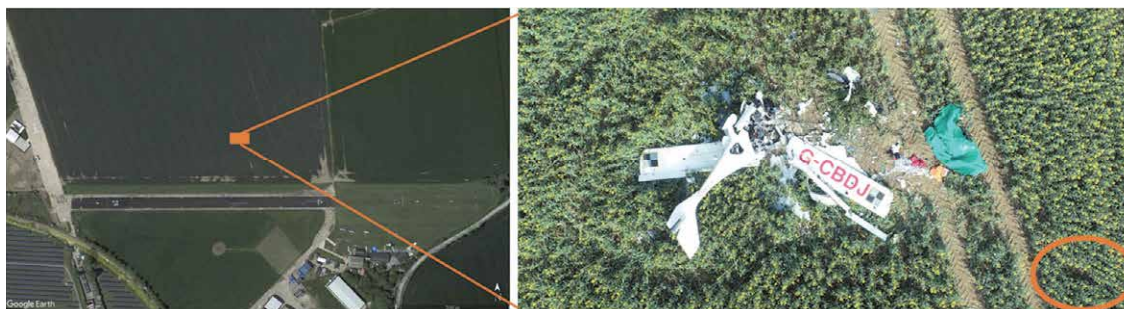


Figure 1

Aerial view of the accident site

Aircraft information

G-CBDJ was a Flight Design CT2K microlight which was built in 2001. It had an all-composite construction with a high wing, conventional control surfaces and a tricycle landing gear. A three-bladed propeller was driven by a Rotax 912ULS engine. The aircraft was fitted with a BPRS. Prior to recovering the aircraft to the AAIB, the BPRS was deployed at the accident site with the necessary safety precautions in place.

A Brauniger Alpha Multi-Function Display (MFD) was fitted to the centre of the instrument panel in the cockpit of G-CBDJ. The MFD used a monochrome Liquid Crystal Display (LCD) to provide the pilot with the following information: fuel quantity, the aircraft's indicated airspeed, altitude, vertical speed, engine rpm, engine oil temperature, water coolant temperature, exhaust gas temperatures and oil pressure.

The airspeed and vertical speed were presented as analogue indicators; the altitude, engine speed, temperatures and pressure were displayed as numerical values; and the fuel quantity as a bar graph.

The MFD provided a visual alert to the pilot if the airspeed or engine parameters exceed set limits. For example, the alert thresholds for aircraft indicated airspeed for G-CBDJ was 38 kt. If an engine exceedance was detected, or the airspeed was below the set limit, the associated display readout on the LCD would flash on and off.

If external electrical power to the MFD was lost in flight, a back-up battery installed within the MFD automatically provided electrical power that enabled the unit to continue to operate for several hours. The voltage of the integral battery was tested by the MFD each time external electrical power was applied to the unit. If the voltage was detected as being low, a warning was presented on the MFD.

Aircraft handling

Pilots experienced on the CT2K informed the AAIB that in common with many types, it had characteristics that required vigilance from the pilot. For example, if a pilot lands on the nosewheel, the nose of the CT2K tends to “kick up” markedly, requiring the immediate application of power to go around. One pilot stated that, “it is a difficult aircraft to land,

especially if it bounces...you have to apply power to catch it...you have to be on your game”.

The maximum speed to extend the flaps on the CT2K is 62 KIAS and the recommended approach speed is 55 KIAS.

Recorded information

Recorded information for the accident flight included the aircraft’s position and altitude, which had been recorded by ground-based radar and equipment that had received transmissions from an electronic conspicuity device¹ fitted in the aircraft. RTF recordings of communications between the pilot and ATC, that commenced as the aircraft departed Temple Bruer airstrip, were also available.

When electrical power was applied to the MFD on G-CBDJ after the accident, the integral battery passed the unit’s built-in test. The MFD had an internal recording function which monitored engine rpm, altitude and airspeed to determine the start and end of a recording period. Each recording started once the engine had been running for one minute and the MFD detected an increase in altitude of about 75 ft, indicating that the aircraft had taken off. The recording ended once the engine had stopped with an airspeed less than about 27 kt and with no change in altitude detected for a subsequent period of approximately 30 seconds. The MFD recorded flight duration reflected the time that the aircraft had climbed above 75 ft and the airspeed remained above 27 kt.

Recorded information was recovered from the MFD for the accident flight and the 23 previous flights dating back to 14 November 2021. This data provided a peak value of airspeed, altitude, vertical speed, and engine parameters (except oil pressure). It was not possible to determine at what point peak values occurred during a flight.

A portable tablet computer was also found in the aircraft. This was damaged and no data was recovered. A member of the pilot’s family confirmed that the device was operating a navigation application. This provided a moving map with the aircraft GPS derived position, and a route could be entered between points, such as when flying between airfields.

Summary of recorded data

The pilot of G-CBDJ made initial radio contact at 1244 hrs with Cranwell Zone ATC to request permission to depart from Temple Bruer into the Military Air Traffic Zone (MATZ), for a flight to Beccles (Figure 2). The pilot was cleared for departure, with the aircraft subsequently taking off from Runway 08 at 1246 hrs before then turning onto a south-easterly heading. However, at 1249 hrs, the pilot reported to ATC that he had a “SLIGHT PROBLEM” and was returning to Temple Bruer, with the aircraft making a left turn back towards the airstrip. ATC inquired if they could further assist the pilot, who responded by advising “NO, NO I’M, I’M FINE THANK YOU, IT’S JUST SOMETHING HASN’T FIRED UP AS IT SHOULD HAVE DONE”. About one minute later, at 1250:54 hrs, the pilot

Footnote

¹ PilotAware Rosetta.

contacted ATC and advised them “PROBLEM SOLVED” and that he was turning back on course towards Beccles. A family member of the pilot informed the AAIB that the pilot used this phrase when his navigation application did not activate the planned route, or did not connect correctly to the PilotAware Rosetta conspicuity device.

At 1258 hrs, G-CBDJ exited the Cranwell MATZ and the pilot advised ATC that he was changing to “safetycom”² frequency enroute. This was the last recorded communication from the pilot; there were no reports of the pilot communicating whilst enroute and the air/ground radio communications at Beccles was not recorded.

As G-CBDJ approached the town of Spalding, the pilot altered course to fly an almost direct track to Beccles, during which the aircraft was operated at altitudes of up to about 3,500 ft amsl.

At 1352 hrs, G-CBDJ had descended to an altitude of about 1,000 ft amsl and was joining crosswind for a right-hand circuit to land on Runway 09 at Beccles. The final recording of the aircraft was at 1354:58 hrs when it on the final approach and positioned 800 m from the runway threshold at an altitude of about 430 ft amsl (a height of 350 ft aal), which equated to a flight path angle of 7° to the runway threshold. The aircraft’s descent rate at this time was about 450 ft/min and its calculated airspeed, based on a windspeed of 5 kt, was between 60 and 70 KIAS.

The MFD data for the accident flight indicated that the engine had been running for one hour and eighteen minutes, and that the recorded flight time was one hour and ten minutes. The engine was started at 1236 hrs and it had stopped between 1355 and 1356 hrs; this was consistent with the time for the aircraft to have reached the airfield from the final radar position based on its groundspeed. Table 1 provides the peak values recorded by the MFD during the accident flight. None of these values exceeded a threshold for an alert.

Engine rpm	KIAS kt	Altitude ft	Rate of climb ft/min	Rate of descent ft/min	Water temperature °C	Oil temperature °C	EGT Sensor 1 / 2 °C
4,900	110	3,466	1,100	1,200	113	103	814 / 773

Table 1

Peak MFD parameter values recorded during the accident flight

Footnote

² SafetyCom is a common traffic advisory frequency (135.480 MHz) for use at, or near to, aerodromes that do not have an assigned frequency.



Figure 2

Aircraft track from Temple Bruer to Beccles Aerodrome
© 2022 Google, Image © Landsat / Copernicus

Aircraft examination

The wreckage was recovered to the AAIB for detailed examination. Continuity of the flying controls was confirmed, along with the engine controls. Witness marks on the fuselage correlated to the flaps being deployed to their full (landing) configuration at the time of the accident. There was evidence of over compression on the left side of the nose landing gear tyre and there was slight deformation of the wheel hub (Figure 3). A detailed engine teardown revealed that the engine was probably performing normally prior to the accident.



Figure 3

Damage to the nose landing wheel

With the exception of the MFD, the disruption to the wreckage precluded detailed testing of the aircraft systems.

Pilot information

The pilot held a UK Private Pilot's Licence, first issued in 1989, and had flown 2,677 hours of which 1,621 hours were in G-CBDJ. He gained a microlight endorsement in 1991 and revalidated the privileges of his microlight class rating on 6 April 2021 by providing evidence of his experience. His aviation skills were well regarded by his peers at Temple Bruer. They commended his skills in dealing with turbulent conditions at their flying strip, and his awareness of how his aircraft handled in such conditions.

A member of the pilot's family informed the AAIB that the pilot was getting to the stage where he was "slowing down" and that the pilot was "coming to the conclusion that he would have to stop flying in the near future".

Post-mortem report

In his post-mortem report, the pathologist found that the pilot died from multiple traumatic injuries sustained in the aircraft accident. There was no indication of medical impairment or incapacitation of the pilot before the aircraft struck the ground, but this could not be ruled out.

Licence revalidation

There are two methods of revalidating a microlight class rating issued before 1 February 2008 for a UK PPL holder; the first is by experience³. The requirement is that within the preceding 13 months and during the validity of an existing Certificate of Experience, the holder must have completed at least five hours of flying as a pilot of a microlight, including at least three hours as Pilot in Command⁴. This method of revalidation does not require a training flight or assessment with an instructor. The pilot of G-CBDJ had flown approximately 62 hours in the preceding 13 months.

The second method, which applies to all microlight class ratings issued after 1 February 2008 and for pilots with a National Private Pilot's Licence, is that within the 24-month period of validity of a Certificate of Revalidation, the holder must have completed:

- A minimum total of 12 hours flight time⁵.
- At least one hour of flight training in a microlight aircraft conducted by an instructor entitled to give flight training in a microlight aircraft.

Pilots holding a UK PPL with a microlight class rating issued before 1 February 2008 may choose to adopt the NPPL revalidation scheme but there is no requirement for them to do

Footnote

³ This revalidation route also applies to class ratings for Self-Launching Motor Gliders.

⁴ Up to two hours can be conducted as dual flying instruction as Pilot Under Training with a qualified flying instructor who has certified that he/she was fit to act as pilot in command.

⁵ It also requires the following:

- Eight hours flown as PIC.
- Twelve take offs & landings.
- At least six hours flown within the 12 months preceding the expiry date of the current certificate.

so. The BMAA informed the AAIB that it was not possible to quantify either the number of pilots who renewed their microlight class rating by experience, or the number who could exercise that renewal method but had opted to comply with the NPPL scheme.

Ageing pilots

In April 2021 the AAIB published a report into a fatal glider accident, G-CFST, involving a 91-year-old pilot⁶. The report considered data from the CAA that showed the average age of non-commercial pilots in the UK was increasing. In 2000 it was 43.7 years; by 2018 it had increased to 52.2 years. After a review of available literature, the G-CFST investigation found that:

'Older pilots are not necessarily less-safe pilots and poor decision making can affect pilots of all age and experience levels. Nonetheless, age-related deterioration in eyesight, hearing, mobility, memory, cognition and decision making are recognised as having an impact on piloting ability.'

And that:

'Although the broad effects of ageing are well known, there is great variability on how any specific decline will affect an individual pilot and chronological age is not a reliable metric to predict age-related impairment...while experience, knowledge, aptitude and wellbeing can offset or delay the effects of ageing, there will inevitably come a point where the most sensible option for an individual is to retire from flying as PIC.'

The investigation concluded that:

'Unless precipitated by an accident or incident, without an objective metric for making the decision, it relies on individual pilots to be honest with themselves and for supervisors to be candid enough to reach a shared acknowledgement that their days as PIC are over. Family, friends and peers can play a part in encouraging and supporting pilots when that decision has to be made. This is especially important for pilots not affiliated to clubs or sporting associations.'

Medical requirements for General Aviation pilots

All pilot licences require a medical certificate or declaration of some description. Holders of a UK PPL or NPPL wishing to fly a UK (G) registered aircraft in UK airspace can apply for a Pilot Medical Declaration (PMD) using the CAA's medical online system. The online PMD was introduced in October 2016 following a public consultation⁷ in which the CAA sought the General Aviation (GA) community's opinion on adopting the Driver and Vehicle Licensing Agency (DVLA) standard for Group 1 (car) Ordinary Driving Licences (ODL) as the medical standard for their sector, expanding on a scheme previously available to

Footnote

⁶ AAIB investigation to Schleicher ASH 25 E, G-CFST - GOV.UK (www.gov.uk) [accessed February 2023]

⁷ See CAP 1284, *UK Private Pilot Licence and National Private Pilot Licence Medical Requirements*, CAA, June 2015.

NPPL holders⁸. This was part of the CAA's wider aspiration to make regulation '*more proportionate and less burdensome, while still seeking to protect third parties*', and focused the risk analysis on the probability of serious incapacitation in flight.

The current PMD is an affirmation of a pilot's medical fitness to fly based on a '*reasonable belief*' that they meet the medical requirements for a Group 1 ODL and are not subject to any disqualifying medical conditions. There is no requirement to consult a General Practitioner (GP) or an Aeromedical Examiner (AME), and the pilot does not have to hold a driving licence. Essentially, if you believe you are fit enough to drive to an aerodrome, you may consider yourself to be fit to fly your aircraft. In addition, the applicant must comply with the following requirements:

- Only fly an aircraft no greater than 2,000 kg MTOW.
- Must not be taking medication for any psychiatric illness.

Additional medical restrictions apply if the applicant wishes to fly aircraft greater than 2,000 kg but below 5,700 kg MTOW, and an AME must be consulted if the pilot is unsure about the applicability of a condition, treatment or medication⁹.

PMD validity

After completing the online process, the PMD is valid until the age of 70 years, with no upper age limit, unless voluntarily withdrawn for medical reasons. After this, a new declaration must be submitted every three years. The accident pilot renewed his PMD on 21 December 2021, hence valid until 21 December 2024.

Assessment of ongoing medical fitness

The CAA's website provides the following guidance for the assessment of ongoing fitness for PMDs:

'If you have reason to believe you no longer meet the DVLA Group 1 ODL [medical] standard, or suffer from any of the specified medical conditions, you must not fly and must withdraw the declaration...'

The CAA does not provide further guidance on the DVLA's medical standard for Group 1 driving licences, nor does it provide a link to the DVLA's website¹⁰ which contains comprehensive advice to drivers. A pilot who intends to make a PMD must actively seek out information relevant to his personal medical history from DVLA sources.

Footnote

⁸ The NPPL was established using a declaration of medical fitness by the pilot, which was then countersigned by their General Practitioner, who had access to the pilot's medical records.

⁹ Further information is available at <https://www.caa.co.uk/general-aviation/pilot-licences/applications/medical/medical-requirements-for-private-pilots> [accessed May 2022].

¹⁰ <https://www.gov.uk/driving-medical-conditions> [accessed May 2022].

Collating evidence following the implementation of PMDs

As part of the implementation phase of the introduction of PMDs the CAA published CAP 1397 - *Comment response document: UK Private Pilot Licence and National Private Pilot Licence medical requirements*, in April 2016, in which it stated:

'It will be important to collect evidence post-implementation to confirm the safety analysis assumptions.

A record keeping system will have to be established to monitor the effects of implementing the new proposal. This will request private pilots submit information on an annual basis to the CAA documenting such items as: age, type of flying, hours flown in last year, total hours.'

The CAA informed the AAIB that following the introduction of PMDs, no record keeping system had been established to collect the annual data necessary to enable the validation of the system.

In October 2020 the CAA conducted a post-implementation review of the PMD process and looked at a sample of 800 PMD holders out of a total of 14,400. This sample comprised 400 pilots who had previously had a medical status of 'unfit' or had a medical referred, and 400 who had no previous unfit or referred status. It found that 4% of the 800 pilots reviewed should not be self-declaring their medical status for various reasons. The CAA concluded that:

'If this percentage represents the whole number of PMD holders, the number made in error is of concern to the CAA. These errors included disqualifying heart conditions, neurological conditions and drug/alcohol misuse. It is not clear to us whether this is due to unclear guidance material or a misunderstanding on the pilot's part.'

In parallel with this review, anticipating the UK's departure from EASA at the end of 2020, the CAA launched a consultation on opportunities for change for the UK's GA sector¹¹. One of the initiatives identified was a review of the PMD process in order to '*enhance the end user experience and identify opportunities in the context of the simplification and rationalisation of GA flight crew licensing*'.

Consequently, the CAA launched a further public consultation in October 2022¹² to revisit the questions originally asked, prior to the launch of PMDs, to provide guidance for future development of the scheme and to establish whether any changes needed to be made.

Footnote

¹¹ Published as CAP 1985: *UK General Aviation opportunities after leaving EASA – a consultation*, CAA, November 2020.

¹² CAP 2408, *Consultation: Pilot Medical Declaration (PMD) review*, CAA, October 2022.

The DVLA

Guidance for medical professionals

The drivers' medical section within the DVLA deals with aspects of driver licensing when there are medical conditions that affect, or potentially affect, the safe control of motor vehicles. It provides a summary of medical guidelines in the publication, '*Assessing fitness to drive – a guide for medical professionals*'¹³. This is intended to assist doctors and other healthcare professionals in advising their patients whether the DVLA requires notification of a medical condition, and the potential licensing outcome from the notification.

In the publications section, '*Age-related fitness to drive*', the DVLA provides the following guidance:

'Older age is not necessarily a barrier to driving.'

- *Functional ability, not chronological age is important in assessments.*
- *Multiple comorbidity should be recognised as becoming more likely with advancing age and considered when advising older drivers.*
- *Discontinuation of driving should be given consideration when an older person – or people around them – become aware of any combination of these potential age-related examples:*
 - *Progressive loss of memory, impaired concentration and reaction time, or loss of confidence that may not be possible to regain.*
 - *Physical frailty in itself would not necessarily restrict licensing, but assessment needs careful consideration of any potential impact on road safety.*
- *Age-related physical and mental changes vary greatly between individuals, though most will eventually affect driving.*
- *Professional judgement must determine what is acceptable decline and what is irreversible and/or a hazardous deterioration in health that may affect driving. Such decisions may require specialist opinion.'*

When medical professionals are assessing a patient's fitness to drive, the DVLA advises that they should:

- *'advise the individual on the impact of their medical condition for safe driving ability.*
- *advise the individual on their legal requirement to notify DVLA of any relevant condition.*
- *notify DVLA directly of an individual's medical condition or fitness to drive, where they cannot or will not notify DVLA themselves.'*

Footnote

¹³ Assessing fitness to drive: a guide for medical professionals - GOV.UK (www.gov.uk) [accessed February 2023].

This process provides the DVLA with a mechanism of enforcement should a patient choose not to notify the DVLA of a relevant condition that medical professionals have assessed will preclude them from driving.

The CAA does not produce similar guidance to assist medical professionals (other than AMEs) in understanding the effects of age or medical conditions on the ability to fly. Pilots are expected to interpret advice they receive from medical professionals in relation to driving and apply it to their private flying. The CAA informed the AAIB that '*pilots are responsible for ensuring they are up to date with any current requirements*', and that any changes to regulations or guidance are promulgated through SkyWise¹⁴ alerts.

The DVLA reported to the AAIB that it had not been informed by the CAA that the CAA had adopted the medical standards for Group 1 driving licences and applied them to aviation. Consequently, there is no process for the DVLA to inform the CAA if it refuses or revokes a driving licence for medical reasons¹⁵, or if a driver voluntarily surrenders their licence.

Driving licences and medical conditions

To understand how medical issues affect driver licensing, the AAIB consulted the DVLA to obtain data for the number of Group 1 licences that are refused, revoked or voluntarily surrendered for medical reasons each year. Data from 2020 to 2022 has been excluded since they are skewed due to the influence of Covid-19. The results are contained in Figures 4 to 6 and are grouped into two cohorts: drivers under 70 years of age and drivers of 70 years of age and older.

The total numbers of licences surrendered in each cohort indicates a measure of compliance with the medical standards for driving (Figure 4).

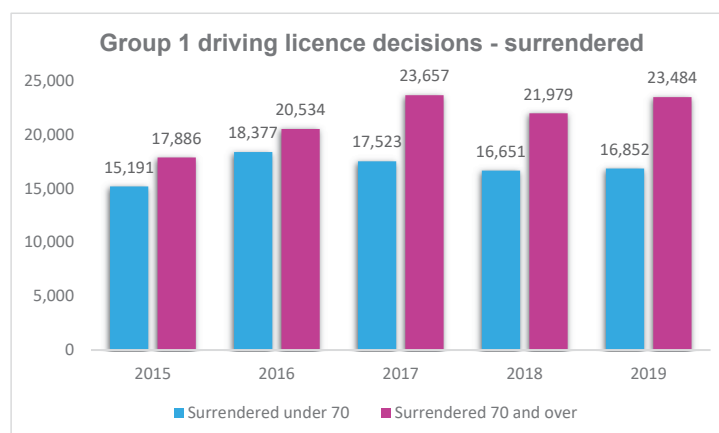


Figure 4
Driving licences surrendered

Footnote

¹⁴ SkyWise is a CAA website and application that provides news, notifications and alerts to the aviation sector.

¹⁵ An application for a driving licence can be refused where the applicant does not have a current driving entitlement, eg. first applications, renewals after expiry or application after revocation. A revocation occurs when a driver has a current driving entitlement removed by the DVLA.

The total numbers of licences refused and revoked (Figures 5 and 6) indicate a measure of intervention made by the DVLA to withhold or withdraw a driving entitlement from individuals who do not meet the medical standard to hold a Group 1 licence.

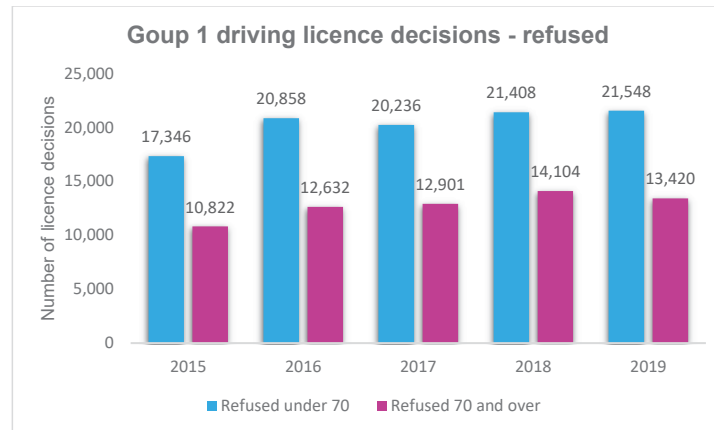


Figure 5
Driving licences refused

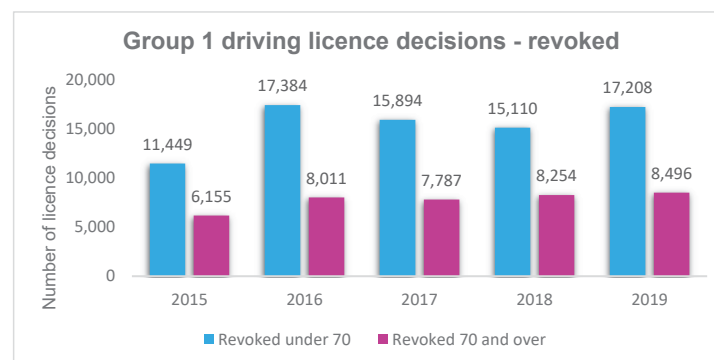


Figure 6
Drivers licences revoked

For the five years of data, the trend is for an increasing number of licenses to be refused, revoked, and surrendered in both age cohorts. Also of note is that the number of surrendered licences is broadly similar to the number of licences subject to enforcement action (revoked + refused).

Unlike the DVLA, the CAA does not revoke pilot licences for medical reasons. If an AME-assessed medical is revoked, or PMD voluntarily withdrawn, the flying licence remains in place, but its privileges should not be used until a valid medical certificate or PMD is regained.

Analysis

The accident flight

The investigation could not determine the nature of the “SLIGHT PROBLEM” the pilot initially reported to Cranwell ATC that caused him to decide to return to Temple Bruer. The pilot’s response to an offer of assistance from ATC that “SOMETHING HASN’T FIRED UP AS IT SHOULD HAVE DONE” followed by “PROBLEM SOLVED”, suggests that the issue was transitory and likely related to the pilot’s portable computer that he may have been using to assist in navigating to Beccles. A member of the pilot’s family informed the AAIB that the pilot had previously used the phrase when the navigation application he used had not worked as expected. There was no further reference to a technical issue in subsequent radio communications.

The route from Temple Bruer to Beccles was familiar to the pilot and the weather was fair. Evidence from recorded data and communications with the ground radio operator at Beccles showed that the pilot joined the circuit from the north-west, establishing himself downwind in a right-hand circuit for Runway 09, and then onto the final approach. Witnesses reported that G-CBDJ’s approach at first appeared to be “unstable” in roll and pitch before settling to a more stable approach profile. The cause of this instability could not be determined, and no local turbulence was reported. It is possible that the pilot was trying to reduce the airspeed below 62 kt, which is the maximum speed for selecting flaps. The pilot had flown a total of 1,621 hours in G-CBDJ, 62 hours of which had been in the preceding 13 months. Of those, seven hours had been flown over six flights in March 2022. As such, he was in recent practice.

An aircraft can bounce on landing for many reasons; a hard landing or landing with excessive speed are two of the more common causes. In either scenario, the most effective response is to go around. Following the second touchdown on the nosewheel, witnesses reported seeing G-CBDJ apparently climbing away in an increasingly nose-up attitude, described as being up to 45°. However, no witness could recall the sound of the engine increasing rpm. Without the application of sufficient power to climb away, combined with a significant nose-up attitude and full flap, a stall was the likely outcome. The aircraft was not fitted with a stall warner and the MFD provided only a visual indication of airspeed. The witness marks on the left side of the nosewheel were indicative of the tyre being compressed against a hard surface, most probably during a bounce on landing. Post-accident examination of the wreckage did not reveal any pre-accident defects which would have affected either the landing phase, or a go-around by the pilot.

Pilots who had flown the aircraft informed the AAIB that the CT2K could be “tricky to land”, and that pilots needed to be “on their game” if things did not go as planned. The accident pilot was familiar with his aircraft and in recent practice, but the landing diverged from his intended plan. Given that he was 87 years old and recognised that he would likely have to stop flying in the near future, it is possible that some age-related deterioration in human performance was a factor in this accident.

Medical

The pilot had a current medical declaration that was valid until 21 December 2024. The post mortem found no indication of medical impairment or incapacitation of the pilot before the aircraft struck the ground.

Pilot Medical Declaration scheme

The online PMD introduced in October 2016 adopted the DVLA medical standard for Group 1 driving licences as the standard for pilots of GA aircraft less than 2,000 kg MTOW. Under the scheme, there is no requirement to consult a GP or an AME, and the pilot does not have to hold a driving licence, only have a '*reasonable belief*' that they could. The CAA does not provide guidance on the DVLA's medical standard for Group 1 licences, nor does it provide a link to the DVLA's website which contains comprehensive advice to drivers. Pilots who intend to make a PMD must actively seek out information relevant to their personal medical history from DVLA sources and translate any guidance found to their private flying.

During a post-implementation review of the PMD process in October 2020, the CAA looked at a sample of 800 PMD holders out of a total of 14,400. It found that 4% of the 800 pilots reviewed should not be self-declaring their medical status for various reasons. The CAA concluded that if this percentage was applied to all PMD holders, the potential of 576 declarations being made in error would be '*of concern*'. Additionally, the CAA reported that it was not clear whether this was '*due to unclear guidance material or a misunderstanding on the pilot's part*'.

The CAA informed the AAIB that a review of the PMD scheme is underway. However, to clarify the medical standards required for pilots to make an online medical declaration, the following Safety Recommendation is made:

Safety Recommendation 2023-007

It is recommended that the UK Civil Aviation Authority provides comprehensive guidance for pilots on the medical factors that must be considered when making an online Pilot Medical Declaration.

The DVLA publishes a summary of medical guidelines intended to assist medical professionals in advising their patients whether the DVLA requires notification of a medical condition, and the potential licensing outcome from the notification. However, medical professionals may not be aware if their patients engage in private aviation and there is no requirement for pilots to declare this. The obligation to take medical advice received on fitness to drive and translate this to flying activity is placed solely on the pilot. Therefore, the following Safety Recommendation is made:

Safety Recommendation 2023-008

It is recommended that the UK Civil Aviation Authority provides guidance for medical professionals to promote awareness of the medical standards required by the Pilot Medical Declaration scheme.

The DVLA has established a process by which drivers, doctors and other healthcare professionals are provided with comprehensive guidance on the medical requirements to hold a driving licence. The DVLA also has a mechanism by which driving licences can be refused or revoked based on the medical history of the licence holder. The CAA does not revoke flying licences for medical reasons, but places an obligation on GA pilots to withdraw their PMD and cease flying if they have reason to believe they no longer meet the medical standard for a Group 1 driving licence. However, should a GA pilot misunderstand this requirement, or choose not to comply, there is no means by which these individuals are visible to the CAA and they might continue to fly.

Figure 7 shows the total number of driving licences that were subject to enforcement action (refused and revoked) for medical reasons by the DVLA for the years 2015 to 2019.

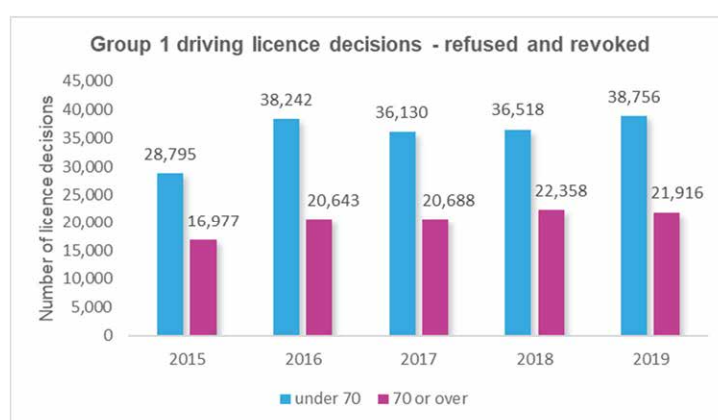


Figure 7

Driving licences refused plus revoked

The CAA informed the AAIB that it had not consulted with the DVLA prior to adopting driver medical standards for the PMD scheme. Nor had it established a formal record keeping system to collect annual data on pilots making PMDs to confirm the safety analysis assumptions. Collaboration with the DVLA prior to the publication of the original public consultation document in 2015 would likely have revealed to the CAA the scale of the DVLA medical-related licensing decisions and the benefits of a feedback process from healthcare professionals to assist the oversight of licences. Therefore, to augment the CAA's ongoing review of the PMD scheme, the following Safety Recommendation is made:

Safety Recommendation 2023-009

It is recommended that the UK Civil Aviation Authority engages with the UK Driver and Vehicle Licensing Agency to understand their process for managing medical related driving licence decisions, and ensure that the UK Civil Aviation Authority's process for managing the Pilot Medical Declaration scheme is as effective.

Pilot licence revalidation

The pilot held a UK PPL and revalidated his microlight class rating on 6 April 2021 by providing evidence of his flying experience gained in the previous 13 months. This method of revalidation is only available to pilots issued with the microlight rating prior to 1 February 2008. The AAIB was unable to obtain details of the number of pilots who are eligible for this category of licence revalidation. However, whilst its size is unclear, this group certainly represents an ageing demographic that is potentially not being actively monitored. Most notably, this method of revalidation does not require a training flight to be conducted with an instructor.

Studies and literature reviewed during previous AAIB investigations suggest that there is no single reliable metric to predict age-related impairment in GA pilots. Guidance provided by the DVLA to medical professionals broadly reflects this finding in relation to driving and concludes that *'Professional judgement must determine what is acceptable decline and what is irreversible and/or a hazardous deterioration in health that may affect driving'*.

The parallel processes of flying licensing and medical certification should be expected to provide appropriate oversight of pilots. However, in this case, a self-declared medical that does not require input from a GP, combined with a method of licence revalidation that does not require a training flight with an instructor, exposes a missed opportunity for at least one independent professional assessment of age-related deterioration in piloting ability. Therefore, the following Safety Recommendation is made:

Safety Recommendation 2023-010

It is recommended that the UK Civil Aviation Authority assesses the continued appropriateness for holders of UK PPLs with microlight class ratings issued before 1 February 2008 to revalidate that rating solely by providing evidence of experience.

Conclusion

The aircraft bounced on landing and probably stalled. The pilot was fatally injured when the aircraft subsequently struck the ground.

The accident pilot was familiar with his aircraft and in recent practice, but the landing diverged from his intended plan. Although the post mortem found no indication of medical impairment or incapacitation, the pilot was 87 years old and had prior to the flight recognised that he would likely have to stop flying in the near future, it is possible that some age-related deterioration in human performance was a factor in this accident.

The investigation highlighted a lack of medical guidance for both pilots and medical professionals who use the Pilot Medical Declaration which is based on the DVLA medical standard for Group 1 driving licences. It also identified that pilots that have a UK PPL with a microlight rating issued prior to 1 February 2008 are not required to fly with an instructor for licence revalidation; such a flight would provide an opportunity for independent assessment of age-related deterioration in piloting ability.

Four Safety Recommendations have been made to the CAA, three about the Pilot Medical Declaration and one about the revalidation of ratings for holders of licences with microlight ratings issued prior to 1 February 2008.

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