AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/9703		
Aircraft Registration	ZS-DIV	**Date of Accident**	29 November 2018		**Time of Accident**	1503Z	
Type of Aircraft	Cessna U206D (Aeroplane)		**Type of Operation**		Private (Part 91)		
Pilot-in-command Licence Type	PPL Validation		**Age**	49	**Licence Valid**	Yes	
Pilot-in-command Flying Experience	Total Flying Hours		175.0		Hours on Type	7	
Last Point of Departure	Nelspruit Aerodrome (FANS), Mpumalanga Province						
Next Point of Intended Landing	Wonderboom Aerodrome (FAWB), Gauteng Province						
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)							
Machadodorp Sappi forestry at GPS co-ordinates S25˚28'36.47" E30˚37'.01.22" at an elevation of 4 697ft above mean sea level (AMSL).							
Meteorological Information	Wind: 90°/4 knots; Temperature: 17°C; Dew Point: 11°C; Visibility: Overcast, Clouds; 1500 ft						
Number of People on-board	2 + 3	**No. of People Injured**	4	**No. of People Killed**	1		
Synopsis							

On 29 November 2018, a Cessna U206D aircraft, registered ZS-DIV, was operated as a private flight from Nelspruit Aerodrome (FANS) in Mpumalanga Province, and destined for Wonderboom Aerodrome (FAWB) in Gauteng Province when the accident occurred. No flight plan was filed, and the aircraft was operated under visual flight rules (VFR) by day. On-board the aircraft were two pilots accompanied by three passengers. The pilot seated on the left seat, was the pilot-in-command (PIC) and the pilot seated on the right seat was the pilot monitoring (PM). The aircraft took off from Runway 22, travelling at 90 knots (kt) indicated airspeed (IAS). Approximately 20 to 30 minutes into the flight at 7000 feet (ft) above mean sea level (AMSL), clouds developed around the aircraft. The PIC reduced the aircraft height with the intention to maintain visibility. During this time, the aircraft was unintentionally flown into the valley which was also covered with clouds. The PIC made a 180° turn to stay clear of the clouds, but without success. As the PIC was not Instrument Rated (IR), she handed over the controls of the aircraft to the PM who was instrument rated. As the aircraft's height above ground was already low, it impacted the tree tops before crashing onto the ground. The aircraft was destroyed by impact forces and fuel-fed post impact fire that erupted. The pilots and passengers sustained serious burn injuries with the PM sustaining approximately 99% burn injuries. All occupants were transported to a nearby private hospital in Nelspruit for further medical care. The PM succumbed to his injuries two days after the accident. A post-accident examination of the wreckage did not reveal any anomalies consistent with a pre-impact failure or malfunction. The South African Weather Service (SAWS) reported overcast low-level clouds around the accident time between Nelspruit and Belfast.

The investigation revealed that the PIC entered instrument meteorological conditions (IMC) at 7000ft AMSL and, in an attempt to maintain visibility, reduced height and inadvertently entered a valley. As the valley was also covered with clouds, the PIC handed over control of the aircraft to the PM as he was instrument rated, but he was unable to clear the valley, resulting in the aircraft impacting the trees before crashing on the ground/terrain.

SRP Date	21 January 2020	Publication Date	14 February 2020

ABBREVIATION	DESCRIPTION
AAIB	Air Accident Investigation Branch
AIID	Accident and Incident Investigations Division
IR	Instrument Rated
AMO	Aircraft Maintenance Organisation
AMSL	Above Mean Sea Level
CAR	Civil Aviation Regulations
CFIT	Controlled Flight into Terrain
C of A	Certificate of Airworthiness
C of R	Certificate of Registration
CRS	Certificate of Release to Service
CVR	Cockpit Voice Recorder
EASA	European Union Aviation Safety Agency
FAA	Federal Aviation Administration
FANS	Nelspruit Airport
FAWB	Wonderboom Aerodrome
FDR	Flight Data Recorder
Ft	Feet
ELT	Emergency Locator Transmitter
Kt	Knots
GPS	Geographic Positioning Satellite
IAS	Indicated Air Speed
IFR	Instrument Flight Rules
IMC	Instruments Meteorological Conditions
IR	Instrument Rated
MEP	Multi Engine Piston
MHz	Megahertz
MPI	Mandatory Periodic Inspection
NM	Nautical Miles
PIC	Pilot-in-Command
PM	Pilot Monitoring
PPL	Private Pilot Licence
SACAA	South African Civil Aviation Authority
SAWS	South African Weather Services
SEP	Single Engine Piston
UK	United Kingdom
UKCAA	United Kingdom Civil Aviation Authority
UTC	Co-ordinated Universal Time
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

Reference Number : CA18/2/3/9757
Name of Owner/Operator : Bushpilot Adventures
Manufacturer : Cessna Aircraft Company
Model : Cessna U206D
Nationality : South African
Registration Marks : ZS-DIV
Place : Machadodorp Sappi forestry
Date : 29 November 2018
Time : 1503Z

All times given in this report are Co-ordinated Universal Time (UTC) and will be denoted by (Z). South African Standard Time is UTC plus 2 hours.

Purpose of the Investigation:

In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011, this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and ***not to apportion blame or liability****.*

Investigations process:

The accident was notified to the Accident and Incident Investigations Division (AIID) on 29 November 2018 at about 1530Z. The investigator/s travelled to Machadodorp in Nelspruit on 29 November 2018. The investigator/s coordinated with all authorities on site by initiating the accident investigation process according to CAR Part 12 and investigation procedures. The AIID of the South African Civil Aviation Authority (SACAA) is leading the investigation as the Republic of South Africa is the State of Occurrence.

Notes:
1. Whenever the following words are mentioned in this report, they shall mean the following:

- *Accident — this investigated accident*
- *Aircraft — the Cessna U206D model involved in this accident*
- *Investigation — the investigation into the circumstances of this accident*
- *Pilot — the pilot involved in this accident*
- *Report — this accident report*

2. Photos and figures used in this report are taken from different sources and may be adjusted from the original for the sole purpose of improving clarity of the report. Modifications to images used in this report are limited to cropping, magnification, file compression; or enhancement of colour, brightness, contrast; or addition of text boxes, arrows or lines.

Disclaimer:

1. FACTUAL INFORMATION

1.1. History of Flight:

1.1.1 On Friday 29 November 2018 at approximately 1503Z, a Cessna U206D aircraft was involved in an accident about 51 Nautical Miles (nm) north-west of Nelspruit Aerodrome (FANS) in Machadodorp Sappi forestry, Mpumalanga Province. Instrument meteorological conditions (IMC) prevailed at the time of the accident and no flight plan was filed. On-board the aircraft were two pilots and three passengers. The pilot seated on the left seat was the pilot-in-command (PIC) and the pilot seated on the right seat was the pilot monitoring (PM). The aircraft was owned and registered to Bush Pilot Adventures situated in Wonderboom Aerodrome (FAWB) and was, at the time of the accident, operated under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended.

1.1.2 The aircraft departed FANS Aerodrome on a private flight destined for FAWB under visual flight rules (VFR) by day. The aircraft owner reported that the aircraft was hired by the PIC as a means of transportation for her and her siblings to scatter the ashes of a cremated family member around Hoedspruit area in Limpopo Province. The flight to Hoedspruit was uneventful and all went according to plan. The aircraft was then flown to FANS where an uneventful landing was carried out. The aircraft was then refuelled to capacity in preparation for a flight to FAWB. The PIC reported that upon completion of the pre-flight inspection, all boarded the aircraft. About 5 minutes later, she started the engine. She allowed the engine to run for a few minutes before taxiing to Runway 22 for departure. The aircraft took off in clear weather conditions, travelling at 90 knots (kt) indicated airspeed (IAS) in a north-westerly direction.

1.1.3 The PIC reported that approximately 20 to 30 minutes into the flight at 7000 feet altitude above mean sea level (AMSL), clouds developed around the aircraft. She reduced the aircraft height with the intention to maintain visibility. During this time, the aircraft was unintentionally flown into a valley which was also covered with clouds. She made a 180° turn to stay clear of the clouds, but without success. As she was not Instrument rated (IR), she handed over controls of the aircraft to the pilot monitoring (PM) who was instrument rated. As the aircraft's height above ground was already too low, it impacted the tree tops before crashing on the ground and bursting into flames. According to the PIC, it was difficult for her to get the left door open as her hands had sustained serious injuries; the PM unbuckled himself and opened the left door, allowing her to vacate, followed by all other occupants. The PM vacated a burning wreckage last and had sustained approximately 99% burn injuries. All the baggage on-board the aircraft was consumed by post impact fire. All occupants of the aircraft walked to a nearby gravel road which was about 1125 metres from the accident site.

1.1.4 A private motor vehicle offered them a ride to Nelspruit Hospital for medical attention. The PM succumbed to his injuries on 1 December 2018 which was two days following the accident.

1.1.5 The accident occurred during daylight in overcast conditions about 30 kilometres (km) from FANS in Machadodorp Sappi forestry area at geographical position determined to be S25˚28'36.47" E30˚37'.01.22" at an elevation of 4 697ft above mean sea level (AMSL).

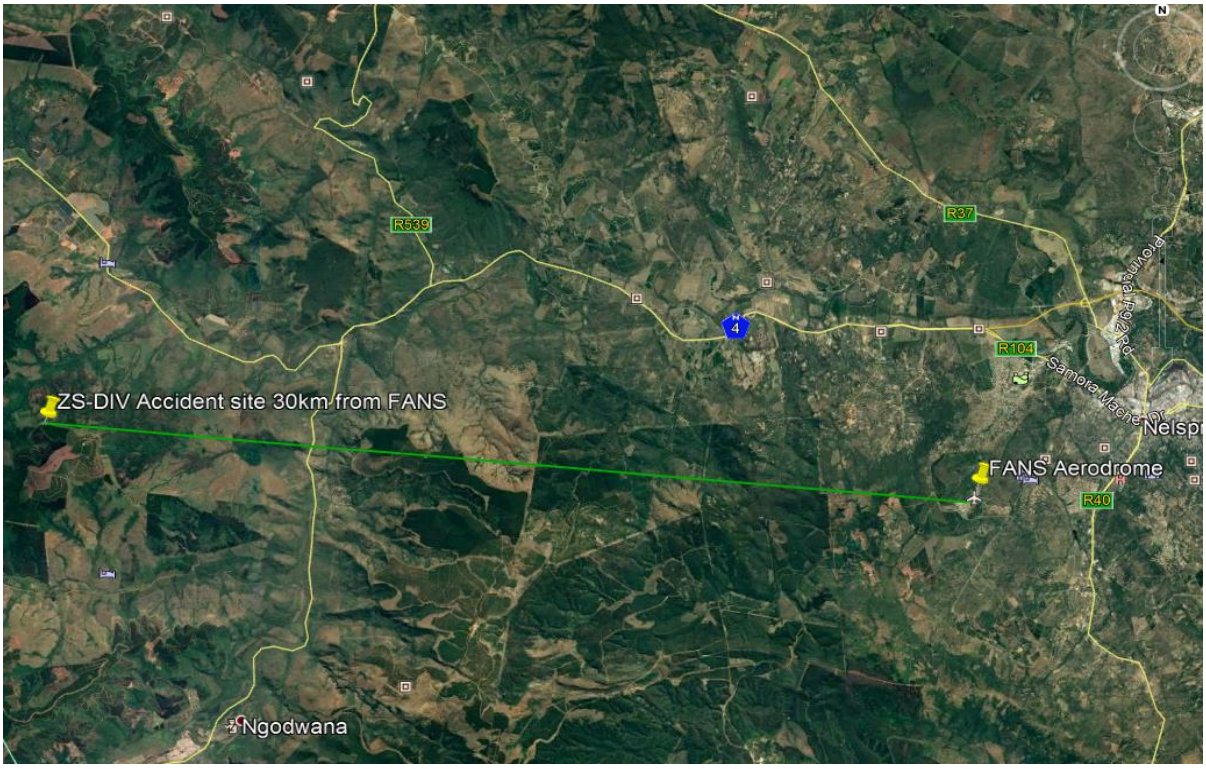

Figure 1: Google Earth map showing the departure aerodrome and the accident site.

1.2. Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	1	-	-	-
Serious	1	-	3	-
Minor	-	-	-	-
None	-	-	-	-

1.3. Damage to Aircraft

1.3.1 The aircraft was destroyed by impact forces and a post impact fire that ensued after the crash.

Figure 2: The condition of the wreckage as found at the accident site.

1.4. Other Damage

1.4.1 Damage was limited to the trees surrounding the crash site.

1.5. Personnel Information

1.5.1 Pilot-in-command (PIC):

Nationality	British (GB)	Gender	Female	Age	49
Licence Number	XXXXXXXXX	Licence Type	Private Pilot Licence (Validation)		
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Nil				
Medical Expiry Date	30 January 2020				
Restrictions	Nil				
Previous Accidents	Nil				

1.5.2 The PIC was issued a Private Pilot Licence (PPL) single engine piston (SEP) land on 4 July 2016 with an expiry date of 4 July 2018. Subsequently, she conducted a recurrent training in July 2018. Scrutiny into her United Kingdom Civil Aviation Authority (UKCAA) issued licence exposed a hand-written entry indicating that the licence was expiring on 31 July 2020. In terms of the UK CAA issued exemption, the pilot had until 7 April 2020 to convert to the EASA licence in terms of the European Part FCL legislation.

1.5.3 Further scrutiny into the South African Civil Aviation Authority (SACAA) records showed that she completed her PPL skills test on 21 July 2017 at a SACAA-approved operator situated in FAWB Aerodrome. The same week on 26 July 2017, the SACAA issued her a PPL validation, single engine aircraft (Cessna 182) under visual flight rules (VFR) expiring on 22 July 2022. SACAA records showed that the PIC completed a Cessna U206D type rating at FAWB on 23 November 2018.

1.5.4 During the investigation, the UKCAA, through the Air Accidents Investigation Branch (AAIB) had confirmed via an email correspondence dated 13 December 2019 that her rating was renewed/revalidated as indicated on a hand-written entry.

Flying Experience

Total Hours	175
Total Past 90 Days	10
Total on Type Past 90 Days	7
Total on Type	7

Pilot Monitoring (PM)

Nationality	British (GB)	Gender	Male	Age	67
Licence Number	XXXXXXXXX	Licence Type	Private Pilot Licence		
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Instrument Rating (Restricted)				
Medical Expiry Date	Unknown				
Restrictions	Suitable corrective lenses				
Previous Accidents	Nil				

1.5.5 According to the accredited representative from the UK AAIB, the PM was originally issued a PPL by the UKCAA in 1992. The licence was subsequently converted to the European Union Aviation Safety Agency (EASA) PPL issued by the UKCAA on 4 June 2014. The licence had a life time validity. The PM was initially issued with an IR in 1992 which was then re-issued as an EASA Instrument Rating (Restricted) on conversion to the EASA licence. After being issued with EASA PPL, he was granted an Aerobatic Rating (a rating new to the EASA licence regime of lifetime validity and was likely to have been issued based on previous aerobatic experience). He had previously held a multi-engine piston (MEP) rating which was issued in 1994.

1.5.6 According to the email from UKAAIB dated 13 December 2019, the PM's IR was consequently renewed on 6 May 2018 and valid until 20 June 2020. At the time of the accident, the PM had an endorsement of GA8 Airvans, Islander, Piper PA34, Beech Baron-55, C206, C182 aircraft on his licence.

1.5.7 Investigation into the SACAA records showed that the PM was issued with a South African PPL validation on 19 July 2017 with an expiry of 17 July 2022.

Flying Experience

Total Hours	1 110
Total Past 90 Days	Unknown
Total on Type Past 90 Days	Unknown
Total on Type	2

1.5.8 The PM's updated flying experience could not be affirmed as his logbook could not be found during the investigation. The issuing state of the PM's licence was consulted; however, it was unable to provide the investigation team with the PM's flying experience. The hours on the above table (Flying Experience) were obtained from the aircraft's owner (Bushpilot Adventures) which were logged in August 2017, more than a year prior to the accident.

1.6. Aircraft Information

1.6.1 The Cessna U206 is an all-metal light cabin monoplane with a strut-braced high wing and fixed tricycle landing gear. It is powered by a Continental IO-520F turbocharged, fuel-injected, flat-six piston engine driving a three-blade, constant-speed governor-regulated propeller providing a rate of climb at sea level of 1040ft/minute. Fuel is contained in two integral wing tanks with a combined capacity of 92.0 US Gallons (348 litres) with a total useable quantity of 87.0 US Gallons (329 litres). The aircraft is equipped with the conventional style six seat arrangement and dual controls. These controls allow for the aircraft to be flown from either the left or right pilot seat. The aircraft was certified for in Visual Meteorological conditions (VMC) and in Instrument Meteorological Condition (VMC).

Figure 3: ZS-DIV aircraft image. (Source: http://www.surfacezero.com)

Type	U206D	
Serial Number	7750	
Manufacturer	Cessna Aircraft Company	
Date of Manufacture	1969	
Total Airframe Hours (At time of Accident)	9740.0	
Last MPI (Date & Hours)	20 October 2018	9694.50
Hours Since Last MPI	45.5	
C of A (Issue Date)	18 November 2018	
C of A (Expiry Date)	30 November 2019	
C of R (Issue Date) (Present Owner)	5 December 2016	
Operating Categories	Private (Part 91)	

1.6.2 Weight and Balance calculation

C206	Weight (lbs)	Arm (inches)	Moment (lbs-inches)
Empty weight as per last weight certificate, incl. oil and unusable fuel	2074	40.63	84.26
Fuel (at 60 lbs per Gal)	480	48	23.04
Pilot and Co-pilot	343.2	36	12.3552
Middle Passengers	352	69	24.288
Rear Passenger	154	100	25.4
Baggage (Max 120lbs)	88	124	10.912
Total Weight & Moment	**3491.2**	**/**	**170.26**

1.6.3 According to the Pilot Operating Handbook (POH), the maximum (certificated and recommended) take-off weight for the aircraft was not allowed to exceed 3 600 pounds (lbs). The aircraft's total weight before departure was 3491.2lbs, which meant that it was within its allowable weight limit.

Engine

Type	Continental (IO-520F)
Serial Number	810052-R
Hours Since New	2755.0
Hours Since Overhaul	1074.8

Propeller

Type	Hartzell (PHC-C3YF)
Serial Number	EE 6802B
Hours Since New	536.1
Hours Since Overhaul	365.9

1.6.4 The last Mandatory Periodic Inspection (MPI) that was performed on the aircraft was a 100-hour inspection on 20 October 2018, and the aircraft had accumulated a total of 9694.58 hours. The inspection was performed by the SACAA-approved aircrafts maintenance organisation (AMO) located at FAWB and the aircraft was signed out and returned to service. A review of the aircraft logbooks showed that all maintenance write-ups or snags were cleared and that there were no open or deferred items. All maintenance was listed as accomplished in accordance with the aircraft maintenance manual.

1.7. Meteorological Information

1.7.1 The following weather information below was provided by the South African Weather Service (SAWS) for conditions at Nelspruit around the time of the accident.

Wind direction	90°	Wind speed	4 knots	Visibility	Overcast
Temperature	17°C	Cloud cover	Overcast	Cloud base	1500 ft
Dew point	11°C				

NOTE: The satellite image recorded overcast low-level clouds around the accident time between Nelspruit and Belfast (see Figure 4). Clouds on the satellite image have a whitish appearance with the land surface depicted in a brown shade; the vegetated areas green.

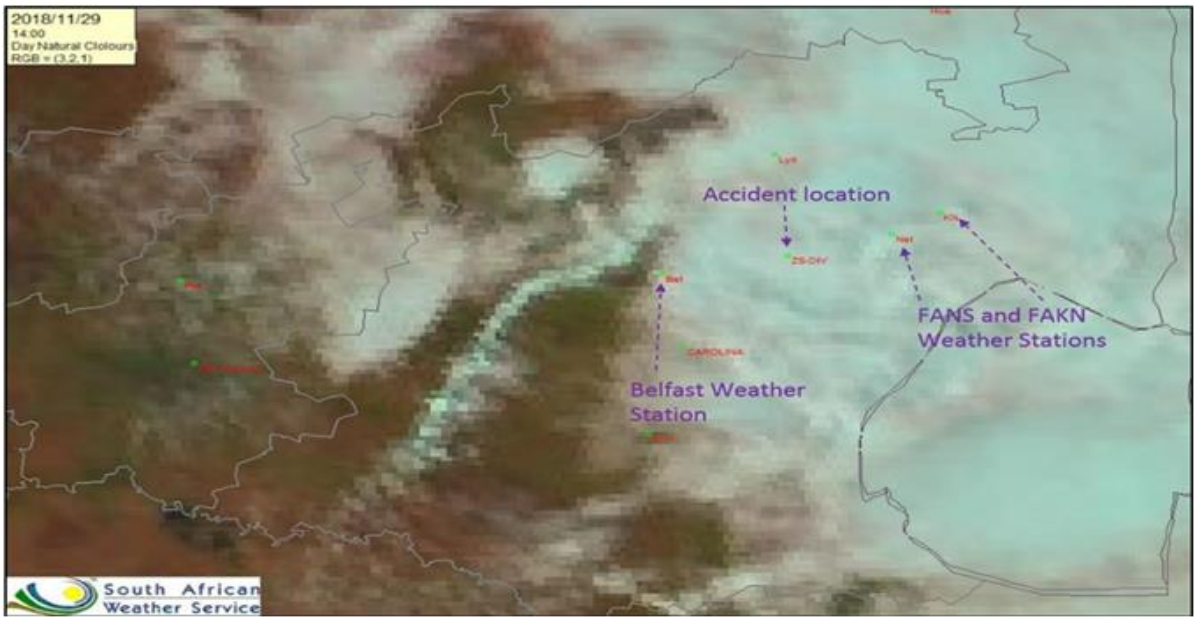

Figure 4: The satellite image recorded by the SAWS on 29 November 2018.

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with the standard navigation equipment as approved by the Regulator (SACAA) for the aircraft type. There were no recorded defects with the navigation equipment prior to the flight.

1.9 Communication

1.9.1 The aircraft was equipped with standard communication equipment as approved by the Regulator for the aircraft type. There were no recorded defects with the communication equipment prior to the flight.

1.10 Aerodrome Information

1.10.1 The accident happened at Machadodorp Sappi forestry at GPS co-ordinates determined to be S25˚28'36.47" E30˚37'.01.22" at an elevation of 4697ft.

1.11 Flight Recorders

1.11.1 The aircraft was neither equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR), nor was it required by regulation to be fitted to this aircraft type.

1.12 Wreckage and Impact Information

1.12.1 Examination of the wreckage at the accident site revealed that damage to the aircraft and the surrounding trees was consistent with the aircraft approaching the crash site with its wings-level and nose-up attitude. The entire aircraft and all control surfaces were located at the main wreckage site. Control continuity was established for all flight controls. The flaps were in a retracted position prior to impact. The empennage survived the fire. The landing gear broke and all three tires were

burned. The engine had evidence of an engine producing a substantial amount of power before the accident occurred.The engine remained attached to the airframe with its tubular mount. The engine-driven fuel pump remained attached to the engine. The hose from the pump to the carburettor was separated at the carburettor fuel inlet fitting and fuel was expelled from the hose as the engine was rotated. Both magnetos remained attached to the engine and no damage was noted.

Figure 6: Flaps position after the accident.
post-accident.

Figure 5: The remains of the landing gear.

Figure 7: The aircraft tail section after the accident.

Figure 8: The engine and propeller after the accident.

1.13 Medical and Pathological Information

1.13.1 According to a forensic pathology report dated 20 February 2019, the PM's cause of death was due to severe burn injuries.

1.14 Fire

1.14.1 The aircraft was destroyed by impact forces and post-impact fuel-fed fire.

1.15 Survival Aspects

1.15.1 The accident was considered un-survivable due to high-impact forces with the ground and the entire cockpit cabin area that was destroyed on impact and by fuel-fed post impact fire that erupted. A fixed 406-megahertz (MHz) emergency locator transmitter (ELT) was fitted to the aircraft. The ELT was inspected and signed off as serviceable during the last 100-hour inspection. This inspection consisted of an inspection of the ELT batteries for electrolyte leakage and that the battery life had not expired. The transmitter was found securely located in its mounting and appeared undamaged externally. It was set to the auto position and the activation light was not illuminated, most likely due to fire damage. The South African Search and Rescue advised that there was no record of that ELT being detected at around the date and time of the accident.

1.16 Tests and Research

1.16.1 None.

1.17 Organisational and Management Information

1.17.1 The aircraft was leased (hire and fly) by the PIC and the flight was considered private and operated under Part 91 of the Civil Aviation Regulation (CAR) 2011 as amended.

1.17.2 The AMO who carried out the last MPI on the aircraft held valid approval certificate issued on 4 May 2018 with an expiry date of 30 April 2019.

1.18 Additional Information

1.18.1 Controlled Flight into Terrain (CFIT)

https://www.easa.europa.eu/sites/default/files/dfu/2017_03_08_EOFDM_WGA_CFIT.pdf

CFIT occurs when an airworthy aircraft, under the control of a pilot, is flown into terrain (water or obstacles) with inadequate awareness on the part of the pilot of the impending disaster (FAA, 2000). A number of general aviation (GA) weather accidents have been associated with external or social pressures, such as the pilot's reluctance to appear "cowardly" or to disappoint passengers eager to make or continue a trip. There is almost always pressure to launch, and pressure to continue. Even the small investment in making the trip to the airport can create pressure to avoid "wasted" time.

One of the most effective safety tools at a pilot's disposal is waiting out bad weather. Bad weather (especially involving weather fronts) normally does not last long and waiting just a day can often make the difference between a flight with high weather risk and a flight that you can make safely.

Many times, weather is not forecast to be severe enough to cancel the trip, so pilots often choose to take off and evaluate the weather as they go. While it is not necessarily a bad idea to take off and take a look, staying safe requires staying alert to weather changes. GA pilots and their aircraft operate in (rather than above) most weather. At typical GA aircraft speeds, making a 200-mile trip can leave a two to three-hour weather information gap between the pre-flight briefing and the actual

flight.

In-flight updates are vital! Because a single-piloted, small GA aircraft is vulnerable to the same CFIT risks as a crewed aircraft but with only one pilot to perform all of the flight and decision- making duties, that pilot must be better prepared to avoid a CFIT type accident. In some cases, a GA pilot may be more at risk to certain CFIT type accidents because the pilot does not have the company management or government oversight that a corporate or commercial operator may be exposed to. Without such oversight, such as detailed standard operating procedures and higher mandatory safety requirements, it is the responsibility of the single pilot to ensure he or she is well trained, qualified for the intended flight, meets all regulatory requirements for the flight, and has the self-discipline to follow industry recommended safety procedures that can minimize CFIT type accidents.

The Instrument Procedure Handbook (FAA-H-8261-1A), Chapter 4, states:

The basic causes of CFIT accidents involve poor flight crew situational awareness. One definition of situational awareness is an accurate perception by pilots of the factors and conditions currently affecting the safe operation of the aircraft and the crew. The causes of CFIT are the flight crews' lack of vertical position awareness or their lack of horizontal position awareness in relation to the ground, water, or an obstacle. More than two-thirds of all CFIT accidents are the result of an altitude error or lack of vertical situational awareness. CFIT accidents most often occur during reduced visibility associated with instrument meteorological conditions (IMC), darkness, or a combination of both.

1.18.2 Weather and Minimum Altitude Regulations: Civil Aviation Regulations, Part 91, paragraph 91.06.21 and 91.06.21(a) of the Rules of the Air.

The flight from FANS to FAWB was conducted under Visual Flight Rules (VFR) which require to be conducted under the following conditions:

(i) Every VFR flight shall be so conducted that the aircraft is flown with visual reference to the ground by day and to identifiable objects by night and at no time above more than three-eighths of cloud within a radius of five nautical miles of such aircraft.

(ii) In controlled airspace the flight visibility should be 5km and the distance from cloud of 2000 feet horizontally and 500 feet vertically.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. Analysis

2.1 Pilot-in-command:

2.1.1 The PIC had been issued a UKCAA PPL single engine piston (SEP) land on 4 July 2016 with an expiry date of 4 July 2018. In terms of the UK CAA issued exemption, the pilot had until 7 April 2020 to convert to the EASA licence in terms of the European Part FCL legislation.

2.1.2 The PIC's SACAA records showed that she had completed a PPL skills test on 21 July 2017. On 26 July 2017, SACAA issued her with a PPL validation, single engine aircraft (Cessna 182) under visual flight rules (VFR), expiring on 22 July 2022.

2.2 Pilot Monitoring:

2.2.1 The PM had been initially issued a UKCAA PPL in 1992. The licence was subsequently converted to the EASA PPL issued by the UKCAA on 4 June 2014. The licence had a lifetime validity. He held an IR initially issued in 1992, but renewed on 25 March 2014, and which was then re-issued as an EASA Instrument Rating (Restricted) on conversion to the EASA licence. After having been granted an EASA PPL, he was granted an Aerobatic Rating. He had previously held a MEP rating which was issued in 1994. The UK AAIB, after consulting with the UKCAA, concluded that his UKCAA-issued IR was renewed on 6 May 2018 and valid until 20 June 2020.

2.2.2 The PM was the pilot flying (PF) when the accident took place in overcast conditions around Machadodorp and, at no stage did the PM lose control of the aircraft.

2.2.3 The aircraft's technical records indicated that it had no outstanding snags or defects and it underwent its last MPI on 20 October 2018 at 9694.50 airframe hours. The aircraft was issued with a certificate of release to service (CRS) after this maintenance was completed on 20 October 2018, which was due to lapse on 20 October 2019 at a total of 9794.50 airframe hours whichever occurs first. At the time of the accident, the aircraft had accumulated a total of 9740.0 airframe hours, which indicated that the aircraft had flown a total of 45.5 hours since its last MPI.

2.2.4 The aircraft was operated within its allowable weight limit prior to the accident. Post-accident inspection of the airframe and engine disclosed that the aircraft was destroyed, and all major components were accounted for. The engine was producing a substantial amount of power before the accident occurred. All damage observed on the wreckage was consistent with the accident damage caused during the impact sequence.

2.2.5 The satellite image from the South African Weather Service (SAWS) showed low-level clouds around the accident area between Nelspruit and Belfast with reported overcast conditions around the accident site.

2.2.6 The investigation revealed that the PIC entered IMC at 7000ft AMSL and, in an attempt to maintain visibility, she reduced the aircrafts height above ground and inadvertently entered a valley. As the valley was also covered with clouds, the PIC handed over control of the aircraft to the PM as he was instrument rated, but the PM was unable to clear the valley, resulting in the aircraft impacting the trees before crashing on the ground/terrain.

3. CONCLUSION

3.1. Findings

3.1.1 The PIC had applied for validation using a Cessna 182 aircraft on 22 June 2017 and had been issued a foreign PPL validation with VFR on 26 July 2017. Her UKCAA-issued licence gives her authority to fly a SEP aircraft. The PIC held a valid medical certificate with no limitations, issued on 26 June 2018, and the PIC was not instrument rated (IR).

3.1.2 The PIC started her conversion training on 20 November 2018, successfully completing her type conversion on a Cessna U206D model on 23 November 2018 and had logged 2.7 airframe hours.

3.1.3 The PIC's UKCAA-issued licence was current at the time of the accident. In terms of the UK CAA issued exemption, the pilot had until 7 April 2020 to convert to the EASA licence in terms of the European Part FCL legislation.

3.1.4 The PM had been issued with a foreign PPL validation with VFR on 19 July 2017.

3.1.5 The AMO that had carried out the last MPI on the aircraft had issued an approval certificate on 4 May 2018 with an expiry date of 30 April 2019.

3.1.6 The aircraft had been issued a certificate of registration (C of R) on 5 December 2016.

3.1.7 The aircraft had been issued a certificate of airworthiness (C of A) on 18 November 2013 with an expiry date of 30 November 2019.

3.1.8 The aircraft was flown under visual flight rules (VFR) by day when clouds formed around it.

3.1.9 At the time of the accident, the PM had taken control of the aircraft due to the PIC not being instrument rated.

3.1.10 The investigation revealed that the PIC entered IMC at 7000ft AMSL and, in an attempt, to maintain visibility, reduced the aircraft height above ground and inadvertently entered a valley. As the valley was also covered with clouds, the PIC handed over control of the aircraft to the PM as he was instrument rated, but he was unable to clear the valley, resulting in the aircraft impacting the trees before crashing on the ground/terrain.

3.2. Probable Cause/s

3.2.1 The aircraft entered IMC and, in an attempt to remain VMC, the aircraft height above ground was reduced and it inadvertently entered a valley which was covered with clouds resulting on an impact with terrain.

3.3. Contributory Factors

3.3.1 Poor flight planning.

4. SAFETY RECOMMENDATIONS

4.1 None.

5. APPENDICES

5.1 Appendix 1: Conversion of a UK CAA issued licence to an EASA licence in terms of the European Part FCL legislation.

Appendix 1: Conversion of a UK CAA issued licence to an EASA licence in terms of the European Part FCL legislation.

The EASA conversion deadline of 8 April has been delayed.

Due to legislative delays in Europe, the UK Civil Aviation Authority (CAA) has introduced an exemption to allow UK General Aviation pilots to continue to fly 'EASA' light aircraft under existing National pilot licensing and medical certificate arrangements.

Pilot licensing regulations are being standardised across all member states of EASA (the European Aviation Safety Agency), including the UK. A number of new pilot licences have been introduced which replace licences issued by national authorities across Europe. These licences are known as EASA licences or Part-FCL licences, and have been mainly introduced by European Part-FCL legislation.

According to the Aircrew Regulation, if you wish to fly any EASA registered aircraft then you must hold an EASA licence and relevant medical. The deadline for GA pilots converting to an EASA licence was 08 April 2018, which would have restricted National licence holders to 'Annex I' (previously referred to as Annex II). However, the UK CAA have issued an exemption delaying this deadline until 07 April 2020, in certain circumstances.

This exemption allows UK General Aviation pilots to continue to fly 'EASA' light aircraft under existing National pilot licensing and medical certificate arrangements, during the delay to the publication of the EASA amendment to the Aircrew Regulation.

GA pilots holding appropriate UK National pilot licences and medical certificates will be able to fly certain EASA G aircraft within Light Aircraft Pilot's Licence (LAPL) privileges in the UK but without holding an EASA pilot licence.

This mostly affects fixed wing pilots as an EASA helicopter type rating can only be added to a Part-FCL pilot licence and not a UK National licence.

Pilots are reminded that the continued use of UK National pilot licences under this new exemption is restricted to LAPL privileges only. If a pilot wishes to fly an EASA aircraft with PPL privileges then they will need to hold a valid Part-FCL PPL. Pilots towing or flying aerobatics within LAPL privileges may continue to do so.

This is a temporary arrangement until 07 April 2020. The CAA will update its website and publications once further details are available.

Pilots are strongly recommended to read the UK exemption published on the CAA website.

Source: https://www.caa.co.uk/General-aviation/Pilot-licences/Convert/Converting-to-an-EASA-licence-from-a-UK-national-or-JAR-licence/