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State Commission on Aircraft Accidents
Investigation

PRELIMINARY REPORT

2023-0008
OCCURRENCE NUMBER

ACCIDENT

SCF-PP: System Component Failure - Power Plant

The sole purpose of safety investigations is the prevention of aviation accidents and incidents.

The Commission does not apportion blame or liability. The investigation is independent and separate from any judicial and administrative proceedings.

Any use of this Report for purposes other than prevention of accidents and occurrences may lead to wrong conclusions and interpretations.

Reims Aviation Cessna, Cessna F150F, D-EKIQ, Warsaw (Wawer district), 1 March 2024

This Preliminary Report was issued by the State Commission on Aircraft Accidents Investigation (PKBWL) on the basis of information available on the date of its publication.

This Report presents only the facts pertaining to the circumstances of the aviation occurrence and, where applicable, ad hoc safety recommendations.

This Report was drawn up in Polish.

Warsaw, 29 March 2024



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INTRODUCTION

LEGAL BASIS

State Commission on Aircraft Accidents Investigation is the safety investigation authority referred to in Article 4(1) of Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and occurrences in civil aviation and repealing Directive 94/56/EC (Official Journal of the European Union L 295, 12.11.2010, p. 35, as amended).

The Commission shall conduct investigations on the basis of the provisions of the Aviation Law of 3 July 2022 (Journal of Laws 2022 No. 130, item 1112, as amended) and law of the European Union in the field of civil aviation accidents and incidents, and taking into account the standards and recommended methods of conduct contained in Annex 13 to the Convention on International Civil Aviation, drawn up in Chicago on December 7, 1944 (Journal of Laws of 1959, item 212, as amended).

BASIC INFORMATION ON THE OCCURRENCE

Operator (user), flight number or type – Private

Manufacturer, type, model and registration marks of the aircraft – Reims Aviation Cessna, Cessna F 150F, D-EKIQ.

Place and date of occurrence Warsaw (Wawer district), 1 March 2024.

OCCURRENCE REPORT

PKBWL was notified of the occurrence under the mandatory reporting system on 1 March 2024.

The occurrence was assigned a registration number – 2024-0009.

Based on initial information, the occurrence was categorised as an accident.

The classification was not changed in the course of the investigation.

OCCURRENCE NOTIFICATION

- PKBWL notified the occurrence to:
- State of Registry – Germany
- State of Design and Manufacture – USA;

ORGANISATION OF THE INVESTIGATION

The investigation was conducted by – PKBWL.

Investigator-in-Charge (IIC) – Roman Kamiński.

Accredited Representatives (and their advisers):

- State of Registry – Germany
- State of Design and Manufacture – USA

RECOMMENDATIONS

Unless otherwise specified, the recommendations contained in this Report are addressed to the regulatory authorities of the state concerned. The decision on how to proceed is the responsibility of those authorities.

TIME

All times in the Report are given as LMT. LMT on the occurrence day =UTC+1.

DATE

If the Report contains a date in digital format DD/MM/YYYY, the individual digits mean: DD is the day, MM is the month, and YYYY is the year.

FIGURES AND TABLES

Unless stated otherwise in this Report – source is PKBWL.

SYNOPSIS

On 29 February 2024, a pilot (an Italian citizen), holder of PPL(A), booked a Cessna F150F aeroplane at the Evair Aviation Training Centre (Warsaw Babice) for a sightseeing flight with a female passenger for 1 March 2024.

On 1 March 2024, after arriving at the aerodrome and arranging the necessary formalities, the pilot conducted a pre-flight inspection of the aeroplane and topped up the fuel. At around 16:16 hrs, the pilot made three unsuccessful attempts to start the engine. It was only at the fourth attempt that the engine was started by an employee of the company (an instructor). Having received clearance, the pilot taxied the aeroplane to the threshold of RWY 10, where he performed an engine run-up. During take-off, the pilot did not find any irregularities and continued the flight until he reached the height of 1,800 ft and airspeed of 80 kt.

The pilot stated that during the flight he had turned on carburettor heating for 1-2 minutes four times. After the heating was activated for the fourth time, the engine speed dropped to 2,200-2,300 rpm. The pilot increased the engine speed to 2,500 rpm, but it started dropping again. In that situation, the pilot decided to turn back to the Babice aerodrome, but after a moment he judged that he would not make it to EPBC and decided to perform an emergency landing instead, of which he notified FIS Warsaw.

For the landing site he chose a non-built-up, albeit very waterlogged, area in the district of Wawer. The pilot commenced descent at the engine speed of 1,200-1,300 rpm, deployed flaps, and closed the fuel valve and switched off electrical power supply prior to touchdown. After touchdown, the aeroplane stopped and overturned after covering a distance of around 15 m. The pilot and the female passenger were helicoptered to hospital, where the female passenger was diagnosed to have sustained minor injuries.

SYMBOLS, ACRONYMS AND ABBREVIATIONS

ACRONYMS AND ABBREVIATIONS

ACCREP	Accredited Representative
AFIS	Aerodrome Flight Information Service
ATOM	Actual Take-Off Mass
AMSL	Above Mean Sea Level
°C	degree Celsius
CAVOK	visibility, cloud and weather conditions at the moment of observation are better than the recommended values or conditions (Cloud And Visibility OK)
CG	Centre of Gravity
cm	centimeter(-s)
C of A	Certificate of Airworthiness
E	East / eastern longitude
EW	Empty Weight
FIS	Flight Information Service
ft	foot/feet
h	hour(s)
hPa	Hectopascal(s)
IAS	Indicated Airspeed
IIC	Investigator-in-Charge
kg	kilogram(s)
kt	knot(s)
L	litre(s)
m	metre(s)
MTOM	Maximum Take-Off Mass
N	North / northern latitude / Newton
RWY	Runway

s	second(s)
S	South / southern latitude
SEP(L)	Single Engine Piston (Land)
UTC	Coordinated Universal Time
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
W	West / western longitude

1. FACTUAL INFORMATION

1.1. History of the flight

On 29 February 2024, a pilot (an Italian citizen), holder of PPL(A), booked a Cessna F150 F aeroplane at the Evair Aviation Training Centre (Warsaw Babice) for a sightseeing flight with a female passenger for 1 March 2024. The flight was scheduled for 16:00 hrs on the Warsaw Babice-Góra Kalwaria-Warsaw Babice route.

On 1 March 2024, after arriving at the aerodrome, the pilot was provided by an employee of the company with the necessary information on the flight route and technical condition of the aeroplane. Next, the pilot performed a pre-flight inspection of the aeroplane and topped up with fuel supplied by the company (40 l of unleaded 98). At around 16:16 hrs, the pilot made three unsuccessful attempts to start the engine. It was only at the fourth attempt that the engine was started by an employee of the company (an instructor). Having received clearance, the pilot taxied to the threshold of RWY 10, where he performed an engine runup. During take-off, the pilot did not find any irregularities and continued the flight until he reached the altitude of 1,800 ft and airspeed of 80 kt.

The pilot stated that during the flight he had turned on carburettor heating for 1-2 minutes four times. Each time, the engine speed would drop, but within acceptable limits. After the heating was turned on for the fourth time, the engine speed dropped to 2,200-2,300 rpm.

The pilot increased the engine speed to 2,500 rpm, but it started dropping again. The pilot judged that the engine speed drop was not due to carburettor icing and he did not turn on the heating any more until the end of the flight. In that situation, the pilot turned back to the Babice aerodrome at the town of Józefów. However, the engine speed continued to drop and the pilot decided to perform an emergency landing, of which he notified FIS Warsaw.

For the landing site he chose a non-built-up area in the district of Wawer. The pilot commenced descent at the engine speed of 1,200-1,300 rpm, positioned the aeroplane upwind, deployed flaps, and closed the fuel valve and switched off electrical power supply prior to touchdown. After touchdown, the aeroplane stopped and overturned after covering a distance of around 15 m. Radar imaging of the aeroplane's flight path is shown in Fig. 1. It was only after touchdown that the pilot realised that he had landed on a very waterlogged area overgrown with reeds (Fig. 2). Both occupants egress the cabin on their own. The pilot and the female passenger were helicoptered to hospital, where the female passenger was diagnosed to have sustained minor injuries that did not require hospitalisation. Both persons were breathalysed, with negative results.

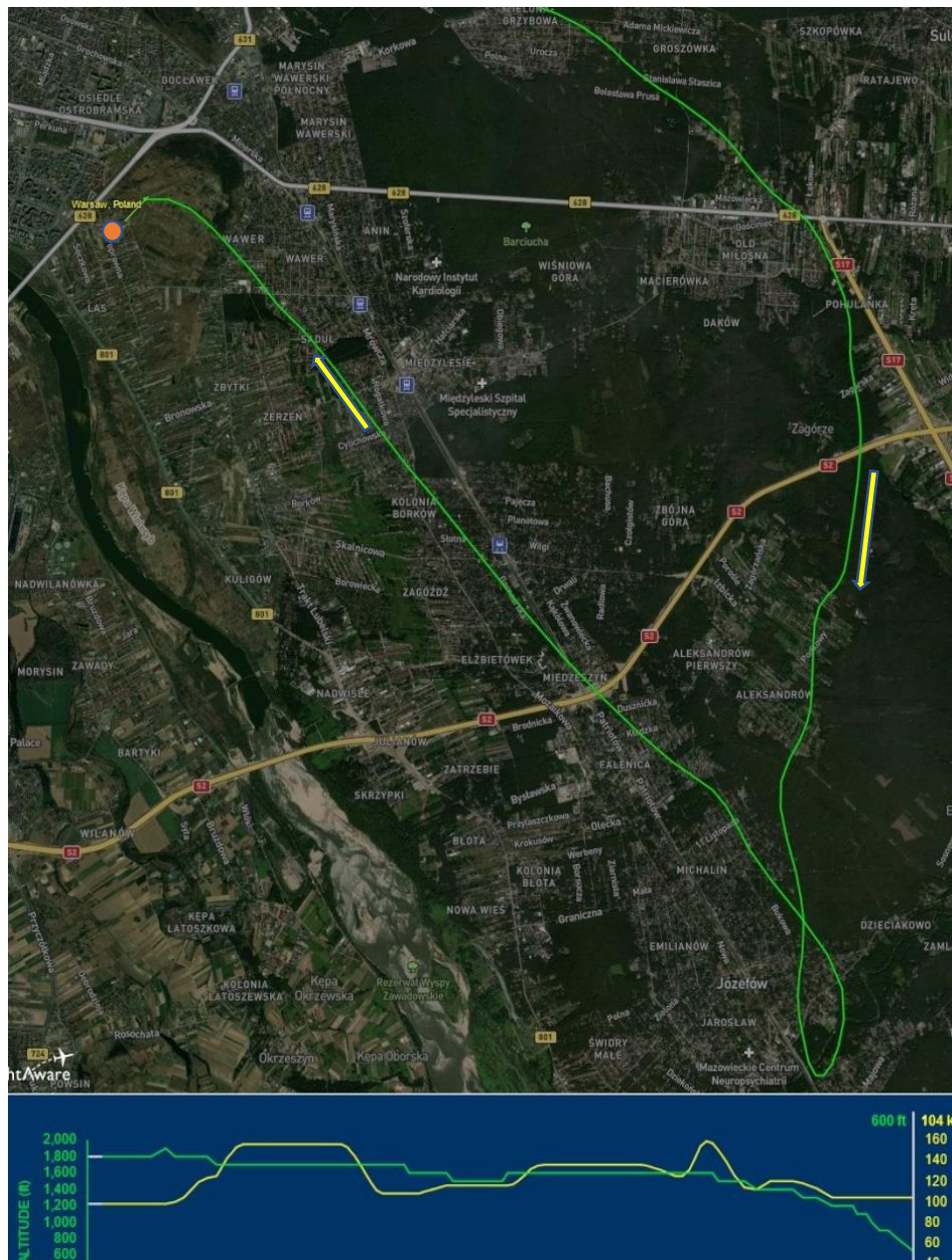


Fig. 1. The flight path of the Cessna F150F – the yellow arrows show the flight direction, and the red circle shows the accident site [source: PANSA, www.flightaware.com]



Fig. 2. The position of the aeroplane after overturn, with the touchdown point marked by a yellow arrow.

1.2. Injuries to persons

Table 1. Injuries to persons

Injuries	Crew	Passengers	Total on board the aircraft	Other
Fatal				
Serious				
Minor		1	1	Not applicable
None proposed	1		1	Not applicable
TOTAL	1	1	2	

1.3. Damage to aircraft

The aeroplane sustained slight damage, mainly to the nose section of the fuselage. All damage to the aeroplane was caused by the collision with the ground. No other visible damage that could have been caused earlier was found. The locations and character of the damage to the aeroplane are shown in Fig. 3.



Fig. 2. A view of the damage to the nose section of the fuselage.

1.4. Other damage

None found.

1.5. Personnel information

Pilot-in-Command.

Pilot: male, aged 60.

Licence: PPL(A)

Authorizations entered on the above license:

- SEP(L) valid until 31 March 2026;

Total flight time 254 h.

Type flight time:

- C150/152: 21 h;
- C172: 78 h;
- PA-28-140/161/180: 53 h

Flight time before the occurrence

- within last 7 days 1:02 h on C-150
- within last 90 days 7:00 h on C-150

Aero-medical certificate – valid until 5 July 2024

Rest during last 48 h – the pilot was provided with an opportunity to rest in hotel conditions.

Pilot's familiarity with the aerodrome and experience on the flight route – the pilot had performed 6 departures from the EPBC on the Cessna 150 since 27 October 2023.

During the occurrence, the pilot was seated in the left-hand seat and was the pilot flying.

1.6. Aircraft information

1.6.1. Airworthiness and maintenance

a) General information:

Cessna F150F is a two-seater private aeroplane with an all-metal monoplane design. The crew seats are positioned side by side. The aeroplane is equipped with fixed tricycle landing gear with a nose wheel.

Continental O-200A four-cylinder piston engine with the rated power of 72.5 kW (98.6 HP) at the mean sea level (AMSL) with the maximum engine speed of 2,750 rpm.

The McCauley 1A101 DCM6948 constant speed metal propeller.

- manufacturer – Reims Aviation Cessna;
- manufacturer designation (model) – F150F;
- serial number – F15000024;
- year of manufacture – 1976;
- registration marks – D-EKIQ;
- owner – EVAIR Aviation Training Centre;
- user – private;
- Certificate of Registration issued in Germany – date of entry 22 June 2023, registry no. 4647 – valid as of the day of the occurrence;
- the aeroplane is not registered for a stay longer than three months in Poland;

- Certificate of Airworthiness – issued on 9 November 2023 – valid as of the day of the occurrence.
- b) History of the aircraft:
- Time Since New – 3712 h;
 - time since last maintenance – 42 h;
 - modifications – none;
 - Aircraft Technical Log Book – kept on an ongoing basis.
- c) Engine and propeller:
- engine – Continental O-200A, time since new: 1,681 h, time since last periodic maintenance: 42 h;
 - propeller – MCCAuley 1A101DCM6948, time since new: 340 h, time since last periodic maintenance: 42 h;
- d) Fuel:
- recommended – fuel with minimum octane number 80/87;
 - used during the flight – unleaded petrol 98;
 - quantity on board – 64 kg;
 - distribution on board – evenly in both wing tanks.
- e) Aircraft load:
- MTOW – 726 kg;
 - EW – 484 kg;
 - Pilot + passenger – 145 kg;
 - ATOM – 693 kg;
 - CG – within acceptable limits;

1.7. Meteorological information

According to METAR for EPWA as of 1 March 2024 at 17:00 hrs (16:00 hrs UTC), the weather conditions were as follows:

METAR EPBC 011600Z AUTO 11011KT CAVOK 09/05 Q1013=

Which means:

- date: 1 March 2024;
- time: 16:00 hrs UTC;

- wind direction: 110°;
- wind speed: 11 kt;
- no clouds of operational significance were observed (no TCU or CB clouds observed; no weather phenomena occurred; visibility was 10 km and more);
- ambient temperature: 9°C;
- dew point temperature: 5°C;
- pressure QNH 1013 hPa.

1.8. Aids to navigation

The flight was performed under VFR and no ground navigation facilities were required.

The aeroplane was equipped with a GARMIN 296 navigation device.

1.9. Communications

The pilot maintained standard radio correspondence in English with FIS Warsaw. Correspondence in both directions was clear.

1.10. Aerodrome information

The flight was performed from the EPBC aerodrome. The pilot intended to land at the aerodrome of departure. Landing took place in the area of the Capital City of Warsaw, near Kadetów and Trakt Lubelski streets (Fig. 4).

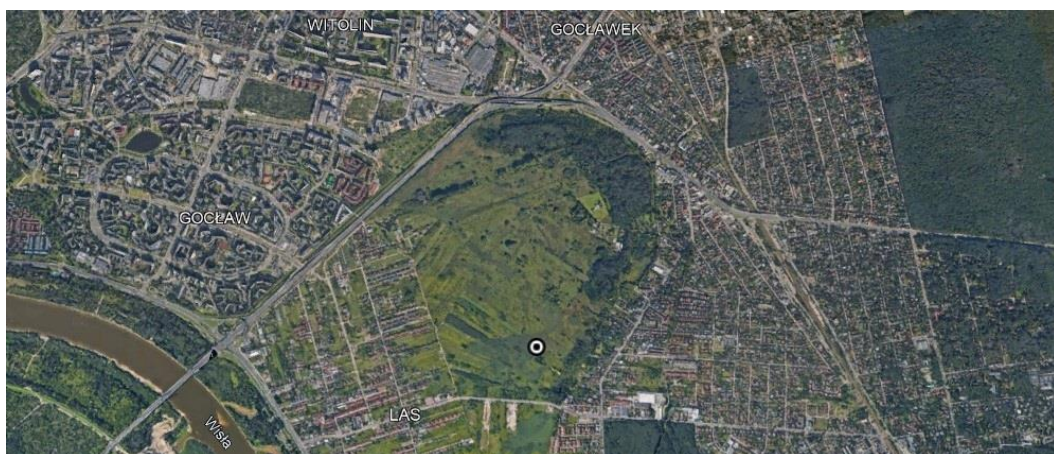


Fig. 3. The area where the aeroplane performed an emergency landing.

1.11. Flight data recorders

The aeroplane was not equipped with flight recorders. No type of a flight recorder was required under applicable regulations.

1.12. Wreckage and impact information

The aeroplane touched down on a waterlogged area overgrown with reeds, following which it moved on for around 15 m and its nose wheel strut broke off, causing the aeroplane to overturn.

An on-site inspection of the aeroplane revealed damage to the nose wheel strut and deflections of the skin in several places in the nose section of the fuselage (Fig. 5)



Fig. 5. A view of the damage to the nose section of the fuselage.

No part of the aeroplane was found to have detached from it prior to the moment of impact.

1.13. Medical and pathological information

The pilot and the female passenger were helicoptered to hospital. During medical examinations, the female passenger was diagnosed with slight superficial injuries. The pilot did not sustain any injuries and was not under the influence of

alcohol or other substances impairing his actions. Neither the pilot nor the female passenger required hospitalisation.

1.14. Fire

A detailed inspection of the aeroplane did not reveal any signs of fire, and there was no leakage from the fuel tanks.

1.15. Survival aspects

The pilot and the female passenger, seated beside him, had their safety belts fastened.

1.16. Tests and research

An inspection was carried out on site during which:

- a) photographic documentation of the aeroplane and the place of the occurrence was produced;
- b) the aeroplane and pilot documentation were secured for further analyses.

1.17. Organizational and management information

None.

1.18. Additional information

None.

1.19. Useful or effective investigation techniques.

Standard investigation techniques were applied.

2. SAFETY RECOMMENDATIONS

Based on the data acquired, the State Commission on Aircraft Accidents Investigation has not formulated any safety recommendations prior to the publication of this Preliminary Report.