



The sole objective of safety investigations is the prevention of future 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 the final report for any purpose other than the prevention of aviation accidents and incidents may lead to wrong conclusions and interpretations.

FINAL REPORT

of the State Commission on Aircraft Accidents

of 11 February 2026

on the investigation of the aviation accident

2025-0015

OCCURRENCE NUMBER

Reims Aviation S.A., F150M, SP-PIA

Gliwice, 16 April 2025

FUEL: Fuel-related occurrence

The final report was issued on the basis of information available to the Commission on the date of its issue.

The final report presents the circumstances of the aviation occurrence concerned, as well as its causes, contributing factors and safety recommendations, if issued.



State Commission on Aircraft Accidents Investigation
ul. Puławska 125, 02-707 Warsaw

Correspondence address:
ul. Chałubińskiego 4/6, 00-928 Warsaw



kontakt@pkbwl.gov.pl



24-hour emergency call: +48 500 233 233



<https://www.pkbwl.gov.pl>

1. Course of the occurrence

The Cessna F150M aircraft with the call sign SP-PIA was last refuelled two days before the accident. Before refuelling, the instructor, based on the indications of the fuel gauges and the EDM¹, determined that approximately 27 L² of fuel were present in the tanks and instructed the student pilot under training at the time to add 58 L to reach a total of 85 L. According to the report received from the operator, Fly Dream Academy Sp. z o.o. (hereinafter referred to as “FDA”), the instructor did not instruct the student pilot to perform a visual verification of the actual fuel level in both tanks. Based on the information about the amount of fuel refuelled, and after conversion, the instructor updated the fuel quantity in the EDM to 22.2 gal³. On 15 April 2025, the aircraft did not perform any flights.

On 16 April 2025, as part of training for the PPL(A) license, the instructor planned a series of training flights, including traffic pattern flights at Gliwice Airport (EPGL). Upon arrival at the airport, at approximately 6 p.m.⁴, the student pilot performed a pre-flight inspection of the aircraft (still without a proper visual check of the fuel level in the left and right wing tanks), after which the instructor conducted a briefing with the student pilot regarding the planned operations. The engine run-up did not reveal any irregularities in the operation of the powertrain.

After the 4th traffic pattern, which ended with a touch-and-go landing, the student pilot prepared the aircraft for take-off: flaps set to 10°, carburettor heat off, throttle set to take-off power. After take-off from RWY⁵08R, at an altitude of a few meters above the ground, a loss of engine power occurred. The instructor took control and initiated an emergency landing on the remaining approximately 300 m of the runway. After reducing power and touching down, the instructor noticed that he would not be able to stop the aircraft before the airport fence. Since the engine was still running, the instructor moved the throttle lever to full power. Initially, the engine responded properly, allowing the aircraft to lift off and fly over the airport fence. At that time, the engine lost power again. Avoiding trees located in the take-off direction, the instructor steered the aircraft to the left, toward a field. Before touchdown, the instructor levelled the aircraft out of the turn and managed to set the flaps to 20°. The aircraft stalled from an altitude of approximately 2 meters and, at 6:43 p.m., made a hard three-point landing. The aircraft then bounced, and upon the second touchdown, became stuck in soft ground, broke the nose landing gear leg, and nosed over. The crew remained suspended in their three-point harnesses. The student pilot exited the cockpit on his own. Meanwhile, the instructor moved the mixture control to the full lean position, set the throttle to idle, closed the fuel shut-off valve, switched off the magnetos, removed the ignition key, and turned off the master switch. The student pilot opened the instructor's door and helped him exit the aircraft. Two witnesses – construction workers from a nearby site – ran to the aircraft, followed shortly by other people present at the airfield. The witnesses notified the emergency

¹ EDM – Engine Digital Monitor

² L – litre

³ gal (abbreviation) – American gallon for liquids, US liquid gallon

⁴ The times in the report are given in LMT. On the day of the occurrence, LMT=UTC + 2h.

⁵ RWY – runway;

services. The instructor informed FDA and the State Commission on Aircraft Accidents Investigation (PKBWL) about the incident by phone.

Pilots who arrived at the scene verified the aircraft's fire safety measures, turned off the anti-collision and navigation lights, and disconnected the battery.



Fig. 1. Cessna F150M SP-PIA aircraft after the nose-over

From the last refuelling until the time of the incident, the aircraft had performed flights with a total time of 3:06 h.

Fire-fighters, police, and an emergency medical team arrived at the scene. The crew was examined and found to have sustained minor injuries in the form of superficial abrasions. No alcohol was detected in their breath.

After confirming that there was no fuel leakage from the overturned aircraft, the fire brigade concluded its operations.

A representative of the PKBWL arrived at the scene. In consultation with the aircraft owner and operator, it was decided that due to the approaching dusk, the aircraft would remain at the accident site, and a detailed inspection would be carried out the following day. The PKBWL secured a fuel sample from the sump, taken from the aircraft prior to the flight day. The incident analysis was based on the statements of the accident participants, an inspection of the aircraft, the report submitted by the FDA, the aircraft documentation, and audio, photographic, and video materials secured by the PKBWL.

2. Relevant information

2.1. Injuries to persons

Crew – 2 persons sustained minor injuries.

2.2. Crew qualifications

- 1) Pilot-instructor – male, 31 years old, held a valid ATPL(A) license with the following ratings: SEP(L) (valid until 30.04.2026), B737 300–900 / IR (valid until 31.03.2026), FI (valid until 31.05.2025, with CPL and FI restrictions), and a valid unrestricted aero-medical certificate: Class 1 (valid until 11.06.2025), Class 2 (valid until 27.05.2029), and LAPL (valid until 27.05.2029). A pilot proficiency check was conducted on 28 February 2025. Total flight time: 6783:45 h, of which as Pilot-in-Command (PIC): 4521:18 h, flight time on type: 341:50 h, of which as PIC: 280:37 h, flight time in the last 24 hours: 3:31 h, in the last 7 days: 14:40 h, in the last 90 days: 148:34 h. At the time of the incident, the pilot instructor was seated in the right seat and acted as Pilot-in-Command (PIC).
- 2) The student pilot – male, 37 years old – was undergoing training for the PPL(A) license and held a valid unrestricted aero-medical certificate: – Class 1 (valid until 03.09.2025), Class 2 (valid until 03.09.2029), and LAPL (valid until 03.09.2029). Total flight time: 12:44 h, flight time on type: 12:44 h, flight time in the last 24 hours: 0 h, in the last 7 days: 04:35 h, in the last 90 days: 12:44 h. At the time of the incident, the student pilot was seated in the left seat.

The crew held the qualifications required to perform the flight.

2.3. Aircraft

2.3.1. General information

- 1) a certified, strut-braced high-wing aircraft with a piston engine and fixed-pitch propeller, all-metal construction, fixed tricycle landing gear with nose-wheel;
 - 2) fuel tanks: “long-range” type, total capacity: 38 gal (72 L);
 - 3) manufacturer: Reims Aviation S.A., model: F150M, serial no.: F15001401, year of construction: 1977, registration mark: SP-PIA, number of seats: 2, MTOM: 726 kg, flight time since start of operation: 11622:24 h, since last inspection (50FH): 40:18 h;
 - 4) engine: model O-200-A, manufacturer: Teledyne Continental;
 - 5) propeller: model 1A102/OCM6948, manufacturer: McCauley Accessory Division;
- 1) certificate of registration dated 28.04.2020 – valid on the day of the incident;
 - 2) airworthiness certificate dated 04.06.2020, unrestricted – valid on the date of the incident;
 - 3) airworthiness review certificate (ARC) – dated 16.02.2024, extended – valid until 15.02.2026.

- 4) maintenance – carried out correctly, in accordance with the applicable requirements of Annex Vb (Part ML) of Regulation (EU) No 1321/2014;
- 5) airworthiness directives – all applicable airworthiness directives have been complied with.

2.3.2. Fuel

- 1) used during the flight – AVGAS 100LL;
- 2) quantity on board – approximately 6 L, based on the amount drained from the tanks;
- 3) distribution on board – approximately 1 L in the left tank, approximately 5 L in the right tank;
- 4) unusable fuel quantity – 3 gal (approximately 11 L)

2.3.3. Aircraft part or system relevant to the accident:

Fuel quantity indication systems:

- a) standard equipment – fuel gauges (left and right) – analogue instruments for approximate assessment of fuel quantity in the tanks;
- b) additional equipment – EDM-830 engine monitoring system manufactured by J.P. INSTRUMENTS Inc. The EDM includes a display showing engine operating parameters and information, including fuel quantity status in the tanks. The EDM was installed under modifications compliant with supplemental type certificates EASA 10052044 and EASA 10052045. The pilot enters the amount of fuel filled into the EDM, and based on data from the installed flow meter, the system calculates, among other things, fuel consumption and the quantity available in the tanks.

Below the EDM in the SP-PIA cockpit, two information placards were installed: “Do Not Rely on Fuel Flow Instrument to Determine Fuel Levels in Tanks” and “Refer to Original Fuel Flow Instrumentation for Primary Information”.

2.4. Owner and operator (user)

Owner: GA System Sp. z o.o.

Operator: Fly Dream Academy Sp. z o.o.

The aircraft was used for training towards obtaining the PPL(A) license. The operator was not listed on the aircraft’s certificate of registration.

2.5. Meteorological information

On 16 April 2025 at 6:30 p.m., in the vicinity of EPGL airport, VMC conditions prevailed⁶. The METAR for Katowice-Pyrzowice Airport (EPKT), located 37 km northeast of EPGL, was as follows: METAR⁷ EPKT 161630Z 19010KT CAVOK⁸ 24/09 Q1012, which indicates wind direction: 190°, wind speed: 10 knots, visibility: greater than 10000 m, cloud cover: CAVOK, ambient temperature: 24°C, dew point temperature: 9°C, pressure: QNH⁹ 1012 hPa.

The possibility of carburettor icing was excluded due to the ambient temperature and dew point, as well as the use of carburettor heat during the approach and landing.

2.6. Airport information.

Gliwice Airport (EPGL) is located in Class G airspace. VFR traffic is permitted¹⁰.

2.7. Information about the wreckage and collision

2.7.1. Damage to the aircraft

The aircraft sustained significant damage. At the accident site, a broken nose landing gear leg, destruction of the vertical stabilizer along with the rudder, deformation (twisting) of the propeller blades, damage to the engine mount, dents and cracks in the engine cowling, and a shattered front cockpit windshield were observed.

On the morning of 17 April 2025, at the accident site, in the presence of the aircraft owner and the instructor, technical inspections were carried out to exclude damages and defects unrelated to the accident. The aircraft was returned to its wheels. During the inspection, continuity of the engine power control system was confirmed, with no visible mechanical damage to engine components other than those caused by the nose-over. The oil level was correct. Fuel filler caps were assessed as clean, with no visible leaks. Approximately 1 L of fuel was drained from the left tank, and approximately 5 L from the right tank. The carburettor was removed to verify the presence and level of fuel: a small amount of fuel was found in the float chamber. No visible traces of fuel leakage were observed on the ground at the location where the aircraft had come to rest.

After draining all remaining fuel and switching the electrical power on, the right fuel gauge indicated a level above $\frac{1}{4}$ (Fig. 2).

⁶ VMC – Visual Meteorological Conditions

⁷ METAR – Meteorological Aerodrome Report

⁸ CAVOK – cloud and visibility OK

⁹ QNH – setting the altimeter scale to the pressure at which it will indicate the true elevation of the landing site upon touchdown

¹⁰ VFR – Visual Flight Rules



Fig. 2 Fuel gauge indications of the aircraft on 17 April 2025 (with electrical power on), after fuel tanks were emptied. [source: FDA]

During the inspection, the EDM indicated 13.6 gal (approx. 51 L) of fuel used (Fig. 3 – USD) since the last refuelling, and 8.6 gal (approx. 32 L) of remaining fuel (Fig. 3 – REM). The possibility of incorrect updating of the fuel quantity in the EDM after the last refuelling was excluded (13.6 + 8.6 = 22.2 gal). It was confirmed based on the refuelling document that the amount of fuel added on 14 April 2025 was 58 L.



Fig. 3 EDM display indications (the remaining 8.6 gal of fuel is highlighted in orange) [source: FDA]

In addition, the following actions were performed:

- cylinder leak test at 80 PSI was conducted¹¹ - in cylinder No. 1: 40 PSI, in cylinder no. 2: 80 PSI, in cylinder no. 3: 30 PSI, while in cylinder 4: 79 PSI. After disassembly of the exhaust system, sand was found in the spark plug mounting holes of cylinders 1 and 3, which could have caused the loss of compression in those cylinders. No damage to the valves or irregularities in their operation were found.

¹¹ PSI – pressure unit –pound per square inch

- the condition of the spark plugs was checked – no damage to the threads or electrodes was found; the colour and gap of the electrodes were within acceptable limits;

- propeller rotation resistance was verified - the propeller rotated correctly, with no noticeable binding.

Photographic documentation was made, and an inspection report was prepared. The wreckage was transported to the airport.

A fuel sample and magnetos removed from the aircraft were secured for further examination. However, after analysing the collected information, the investigation of the fuel and magnetos was discontinued, as they were found to have no impact on the course of the occurrence.

2.7.2. Coordinates of the location of the incident

50° 16' 11.8" N, 18° 40' 20.6" E

2.8. Human factors

According to POH¹² document No. D1080-13, 1977 edition, during the pre-flight inspection the fuel quantity in the left and right wing tanks must be checked visually for desired level. No evidence was found that a proper visual verification (e.g., using a dedicated fuel quantity measuring stick) of the actual fuel level in the left and right wing tanks was performed during the last preflight inspection – particularly important given that the aircraft was equipped with long-range fuel tanks which were not filled to capacity.

It was determined that the instructor, having prior experience flying SP-PIA and having previously confirmed the consistency between EDM readings and manual measurements, relied on the accuracy of the EDM data despite the warning placards. On 14 April 2025, the fuel quantity recorded in PDT¹³ was approximately 27 L (7 gal). This level was based on the remaining fuel indicated by the EDM system. According to the instructor's statement, the fuel gauges showed a similar level – below $\frac{1}{4}$ of the left tank and $\frac{1}{4}$ of the right tank – where each full tank holds 19 gal. The instructor converted the volume from gallons to litres and informed the student pilot of the need to refuel with 58 L to reach a total of 85 L (the maximum fuel quantity to which aircraft SP-PIA was refuelled at Fly Dream Academy, due to the MTOM limitation that prevented flying with full tanks during instructional flights). During refuelling, the instructor was completing entries in the PDT. After refuelling, the instructor updated the fuel quantity in the EDM to 22.2 gal, and the aircraft was returned to the hangar.

On 16 April 2025, immediately before the last series of flights followed by the incident, the instructor estimated the fuel status based on the EDM and fuel gauge readings (left $\frac{1}{4}$, right about $\frac{1}{3}$) at 10.5 gal of remaining fuel (about 40 L).

¹² POH – pilot's operating handbook

¹³ PDT – On-board technical logbook

This amount of fuel, in the instructor's assessment, should have been sufficient for the planned series of flights scheduled at the end of the day. While flying traffic patterns, the instructor monitored the fuel status via the EDM as well as the aircraft's fuel gauges.

3. Conclusions

3.1. Findings

- 1) The engine lost power due to an insufficient amount of fuel (there was no usable fuel on board). Approximately 6 litres of fuel were found in the tanks. No visible fuel leaks or damage to the fuel system were identified.
- 2) The preflight inspection conducted prior to the occurrence did not include a proper visual check (using a dedicated dipstick) of the actual fuel level in the left and right wing tanks.
- 3) Alcohol tests performed on the crew returned negative results.
- 4) The aircraft held a valid airworthiness certificate and was operated in accordance with applicable regulations.
- 5) The aircraft's weight and centre of gravity were within the limits specified in the TCDS and POH.
- 6) Damage and twisting of the propeller blades indicated that the engine was operating at the time of landing.
- 7) Both the instructor pilot and the student pilot held the required qualifications and valid medical certificates, and were adequately rested to conduct the flight.

3.2. Causes and/or contributing factors

Insufficient fuel in the aircraft's tanks to sustain engine operation, resulting from an improperly conducted preflight inspection.

Investigator-in-charge

Signature on the original

.....