

Synopsis

The pilot took off from Farkashegy airfield (LHFH) for time-building with a Piper 32-300 aircraft with registration mark HA-API, and after a flight of approximately 10 minutes, he noticed a decrease in engine power. Due to the terrain conditions, he was unable to return to the departure airfield and turned back towards Budaörs Airport (LHBS), during which he reportedly lost a lot of altitude and made an emergency landing in a field near Törökbálint.

No injuries were reported in the incident and the aircraft was not damaged. The IC traced the cause of the event to maintenance deficiencies linked to economic considerations.

The Investigating Committee of the TSB of Hungary (hereinafter: 'IC') found no circumstances justifying the issuing of a safety recommendation.

Factual information

Occurrence category:		Incident		
Date of occurrence:		1 June 2019, 16:40LT ¹		
Location of occurrence:		In the vicinity of Törökbálint (N47°26.885' E018°55.816')		
Type and registration of aircraft:		Piper 32-300 Cherokee six (PA32), HA-API		
Year of manufacture, serial number:		1966, 32-40220		
Type and number of engines:		Single, type Lycoming IO-540-K1A5, 6 cylinders, piston engine		
Purpose of flight:		Non-commercial (practice)		
People	Number:	Crew	Passenger	Other
	Injured:			
		1	0	0
		0	0	0
Damage to property:		Aircraft: Undamaged 3rd party damage: None		
Licence and ratings of PIC:		PPL(A) ² , MEP(Land) ³ , NVFR ⁴ , SEP(Land) ⁵ , Towing / S+B ⁶ , ATPL(A) Theory ⁷ ,		
Age and citizenship of PIC:		38 years old, Hungarian		
Flight experience of PIC:		Total	On the type	Last 90 days
Flight hours:		777	9.5	9.5
Sources of information:		Notification, on-site inspection, pilot documents, aircraft documents, maintenance documents, expert opinion from ÁEMI ⁸		

¹ Local Time

² Private Pilot Licence (Aeroplane)

³ Multi Engine Piston (Land)

⁴ Night Visual Flight Rules rating

⁵ Single Engine Piston (Land)

⁶ Towing / S+B – sailplane + banner

⁷ Airline Transport Pilot (Aeroplane) theory

⁸ Ásványolajtermék Minőségellenőrzési Zrt. (Mineral Oil Product Quality Control Ltd.)

Flight Summary

According to the pilot of the aircraft involved in the incident, he arranged a flight for 01/06/2019 for practice and time building based on a prior discussion with the owner of the aircraft. The pilot arrived at Farkashegy airfield (LHFH) around 13 o'clock on the agreed day to prepare for his flight: *"I just wanted to fly for myself, I wanted to see the city from above for a bit, and after returning I planned doing a few more take-offs and landings, I didn't plan the flight to be long."* The pilot did not file a flight plan, because according to him, he does not usually file one for *"such a small so-called local flight"*. During the pre-flight checks, he checked the oil and fuel levels, and on completion of the walk-around he found the aircraft fit for flying. According to his statement, the two internal tanks were full, but, according to the flight log, he took over the aircraft with 1/3 fuel and 9091.08 flight hours.

After preparation, he took off from runway 33. After departure, he left the traffic circuit and flew in the direction of Budapest next to the surrounding hills. The pilot did not operate a transponder⁹, nor did he check in to the air traffic information service over the radio, only used the OGN tracker¹⁰ of the aircraft. During his interview later, he said he had chosen this route because of airspace regulation, *"as this is the part where one can fly over the city"*.

He said he flew to Gazdagrét, (see *Figure 1* for actual route) and then turned back and was flying at an altitude of about 2,000 feet with approx. 100 knots when he noticed decrease in power (engine speed dropped to 2,000 rpm). In response, he applied full throttle, but that did not help; then he adjusted the propeller to the smallest angle, but the engine still remained around 1900 to 2000 rpm. Preparing for a possible engine failure he realised that, due to his position and the terrain, he would not be able to return to Farkashegy airfield, so he turned in the direction of Budaörs airfield (LHBS). According to his report, he lost a lot of altitude during the 180° turn, so he decided to land in a field situated near Törökbálint (*Figure 2*).

The engine was still running on idle after landing; when a bit later the pilot walked around it he saw whitish fume leaving through the air intake of the engine; he felt no special odour, and was unaware of a previously detected engine problems. After he found that the landing did not result in any damage to the aircraft, he notified the owner.

During the interview, the pilot said he was aware that the aircraft was usually used for cost-sharing flights; upon repeated questions of the IC he pointed out that he had been alone in the aircraft during the flight concerned.

According to the relevant documents, the aircraft had already flown 1 hour and 09 minutes altogether from three take-offs (with the tanks half full at the first take-off) with another pilot on the day of the event.

The incident was reported by a private individual to the TSB dispatcher at 16.55.

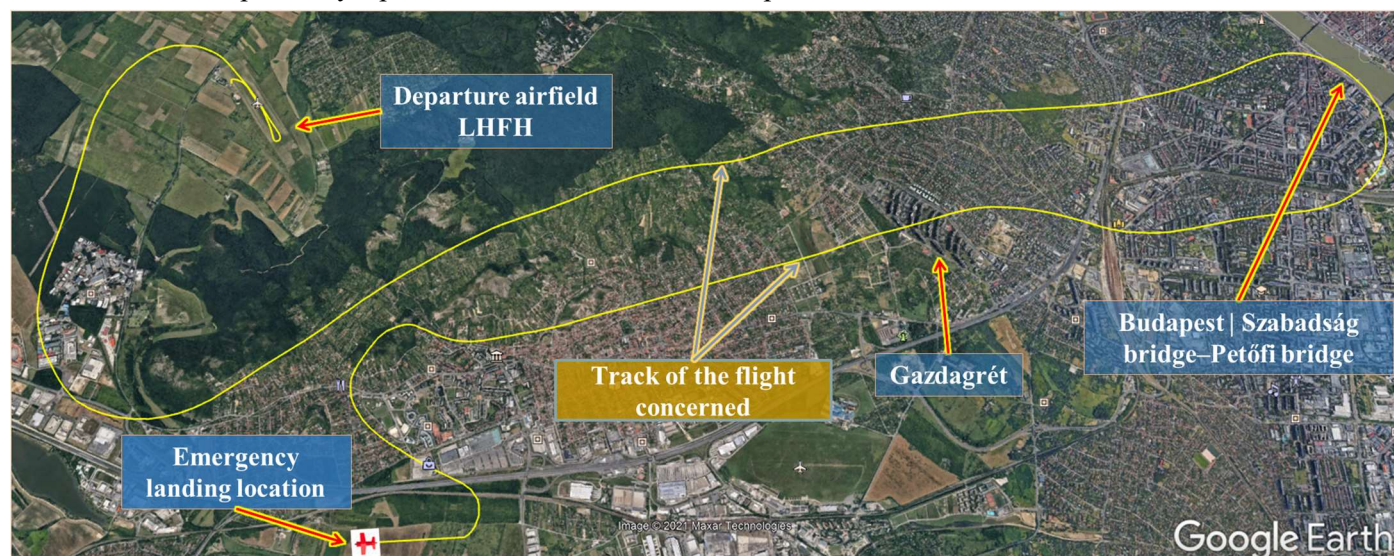


Figure 1: The actual track of the flight leading to the occurrence

⁹ An automated transceiver in an aircraft that emits a coded identifying signal (including flight parameters and position data) in response to an interrogating received signal.

¹⁰ Open Glider Network tracker (it can be used by any aircraft)

Site and Wreckage

The aircraft landed in a field outside Törökbálint (N47°26.885' E018°55.816'); without any injuries to the pilot and without damage to the aircraft. The chosen landing area was a grassy field about 600 metres long and 250 metres wide.

During the on-site inspection, the IC took photographs of the site, the aircraft, the documents found on the site, checked the fuel levels of the internal tank and found them to be almost fully filled. Then the IC took fuel sample from the inboard tanks and sent it to experts for examination¹¹. During the on-site inspection, the IC recorded that the aircraft's engine hour meter was at 9091,55 and that all seat belts were unbuckled and loose. After assessing the findings on the spot, the IC decided that a secondary inspection was necessary. Documents not available on the spot were requested from the pilot and from the aircraft owner.



Figure 2: The aircraft involved in the event, after the emergency landing

Visibility and Weather Conditions

On the day of the event, the weather was sunny in most of the country, with more cirrostratus clouds in the morning and more cumulus clouds in the afternoon. The temperature peaks varied between 22°C and 28°C, the daily temperature outside Budapest was 20.5°C on Saturday, which is 2.7°C higher than the multi-year average.

According to the Budapest Liszt Ferenc Airport METAR¹² relating to the time of the event, the wind direction/speed was 30 degrees/11 knots, temperature 24°C, dew point 11°C, pressure 1017 hPa, and no significant change was expected (METAR LHBP 011430Z 03011KT CAVOK 24/11 Q1017 NOSIG=).

Aircrew

The pilot involved in the incident is an experienced pilot, holds a PPL(A) licence, in addition to single and multi-engine aircraft he also has a glider and an ultralight pilot licence. He is qualified to fly several types of powered aircraft; and at the time of the event, he had a total of almost 800 hours of powered flight experience, an ATPL theory examination, and he had flown 9.5 hours with the aircraft/type concerned. According to his report, the incident took place during his first flight for the day.

Aircraft

The aircraft involved in the incident is a 6-seater, single pilot operated, 300 HP Piper 32-300 Cherokee six (PA32). According to records of the competent authority, the same Hungarian private person was the owner and the operator of the aircraft in the year of the event.

¹¹ According to the examination report received on 29 July 2019, the fuel sample taken from the aircraft did not meet the requirements for aviation gasoline products.

¹² Meteorological Terminal Air Report / Regular aviation weather report telegram; published every thirty minutes at Budapest Liszt Ferenc Airport.

One of the items on the pre-flight checklist in the aircraft operations manual is to check that the seat belts of unoccupied seats are fastened and tightened. According to the markings in this manual and in the engine compartment, the aeroplane may be operated with 100 LL aviation fuel only. The fuel systems section of the manual also draws attention to the fact that using poor quality fuel can cause serious engine damage in a short period of time. The manual gives the order of fuel consumption from the tanks as follows: the 2 internal fuel tanks are to be used first, followed by the auxiliary tanks in the wing tip. The aircraft has 4 fuel tanks, of which the two main tanks have a capacity of 25-25 gallons and the two external tanks have a capacity of 17-17 gallons each.

During the technical inspection, neither the pilot nor the owner of the aircraft mentioned any failure affecting other systems of the aircraft (e.g. on-board transponder) other than the loss of engine power.

Maintenance

The aircraft had flown 8737 hours by 25/10/2016, according to the aircraft log book. On 07/08/2017 with same number of flight hours, an approved maintenance organisation performed a maintenance action which is due after *100 flight hours or annually* according to the maintenance instruction; after that, the aircraft did not fly for nearly a year. The competent authority issued an Airworthiness Review Certificate (EASA Form 15a) for the aircraft on 20/07/2018. The aircraft was flown on 21/07/2018, presumably after a pre-flight check. On 07/08/2018, the *100 flight hours or annual* maintenance would have been current, but - based on the submitted documents - until 04/04/2019 (8792 operating hours) no work other than pre-flight and post-flight inspections was performed on the aircraft. On this day, the pilot-owner certified a *100 flight hours or annual* maintenance of the aircraft using his Part-FCL licence number to authenticate the maintenance carried out by him and recorded it in the Aircraft log book¹³ and Engine log book¹⁴.

In addition to a valid limited maintenance and/or continuous airworthiness management contract, aircraft operation requires the following documents: Parts Catalogue: 753-689, Service Manual: 753-690, Aircraft Owner's Handbook: 753-745, Avionics Wiring Diagram Service Manual 761-682, the Airworthiness Directives (AD) and Service Bulletins (SB) related to the aircraft.

TSB asked the owner to submit all documents and documentation related to the aircraft. The owner submitted an invalid Service Inspection Manual (published in 1981), all Airworthiness Directives (AD) relating to the aircraft, but several Service Bulletins and Service Letters were missing. No other documents listed above were received from the owner during the investigation.

Appendix VIII to Regulation (EU) No 1321/2014 contains the range of maintenance that can be performed by the pilot-owner. It also specifies some items which exclude maintenance by the pilot-owner, including cases where special tools or certified tools or special testing (such as non-destructive testing) are required. The maintenance to be carried out *annually or after 100 flying hours* contains items which require the use of special and certified and calibrated devices, such as measuring the pressure drop in the engine cylinders. However, maintenance points to be performed after *100 flight hours or annually* also include parts that cannot be performed without certain service bulletins and service letters, which were missing.

Malfunctioned equipment

On 06/06/2019 TSB conducted an additional inspection with the participation of a representative from the competent authority, the owner of the aircraft, and a technician assigned by the owner. According to the findings of the inspection:

- The inner surface of the removed engine cowl showed spots of thermal load.
- Cyl. 6 on the LH side of the engine:
 - lacked the stud bolts of the mounting bracket of the intake manifold.
 - The intake manifold had moved away from the cylinder, leaving a gap of ca. 20 mm between its flange and the cylinder (*Figure 3*.)
 - The exhaust manifold had also loosened; one of the two stud bolts broke inside the cylinder and the locking nut of the other got unscrewed.
 - The exhaust manifold provided no sealing, and the emitted hot exhaust gases melted the adjacent cables of the exhaust gas temperature (EGT) sensor, leaving soot marks behind.
- Removal of the spark plugs demonstrated that 4 of the 6 plugs of the lower row could be unscrewed by hand.

¹³ Aircraft Log Book

¹⁴ Engine Log Book

- Rotation of the engine evoked no sound referring to any other malfunction of the engine. Compression checks carried out with manual sealing of the holes of the removed spark plugs showed significantly reduced compression in the front LH cyl. 2.
- The engine contained 10 units of heavily coke polluted black lube oil.
- The bolt joints and sealing used to secure the exhaust manifold and intake manifold of all cylinders reflected different solutions. There were stud bolts of different lengths, securing with locking nuts, and type and quantity differences in the case of washers.
- The engine reflected a generally neglected state; the signs of significant oil spills were visible on the engine.
- The removed air filter showed pollution from normal operation; the air intake and the associated line to the injector was permeable and free of pollution.
- When the throttle lever was moved, the injector control seemed normal, it moved free upon throttle use.

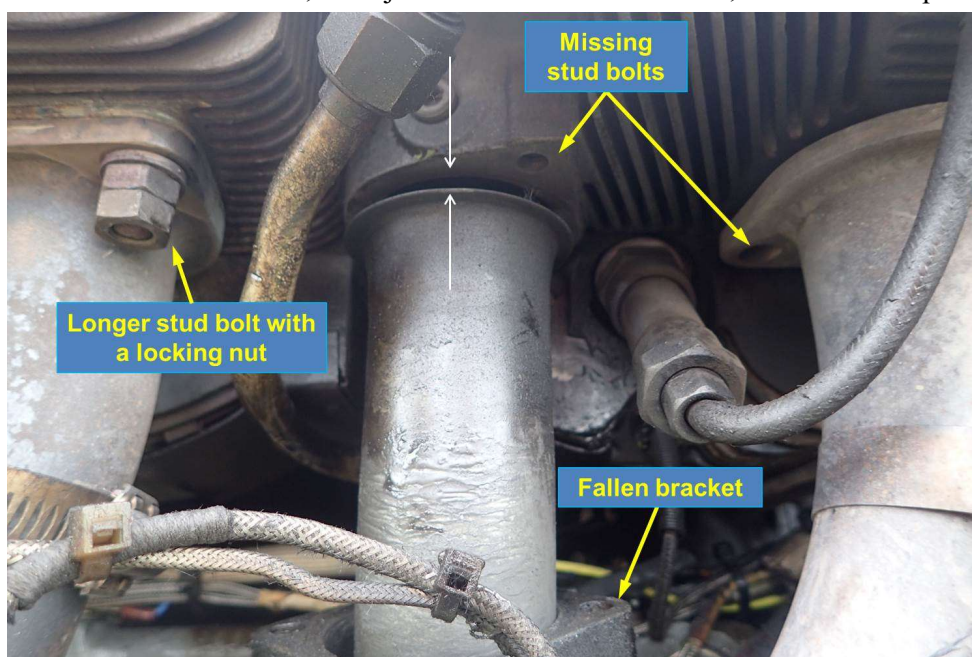


Figure 3: The malfunctioned engine

Cost-shared flights

The competent authority resolution on cost-shared flights - eAP 005-2017 – issued on 06/11/2017 (hereinafter: the Resolution) summarises the provisions for cost shared flights.

Pursuant to Article 6 point a) of paragraph (4a) of Commission Regulation (EU) No 965/2012 of 5 October 2012, cost-shared flight means:

“a flight by a private individual operated with other-than complex¹⁵ motor-powered aeroplanes and helicopters, balloons and sailplanes in accordance with Annex VII of the Regulation, on the condition that the direct cost of the flight is shared by all the occupants of the aircraft, pilot included and the number of persons sharing the direct costs is limited to six.”

The regulation relating to cost-shared flights does not prohibit the promotion and advertising of this type of flights. In this context, EASA has developed a charter which specifies obligations for pilots who carry out cost-sharing flights (even when advertised on the internet). With a view to maximizing aviation safety, the competent authority will only accept the promotion / advertising of cost-shared flights via Internet sites whose service provider has signed and fully complies with the relevant EASA charter. The company which advertises the flights / insured the aircraft (see Organisation chapter) according to information from the relevant EASA site¹⁶ has not signed such charter to date.

¹⁵ Complex motor powered aircraft: an aeroplane with a maximum certificated take-off mass exceeding 5.700 kg, or certificated for a maximum passenger seating configuration of more than nineteen, or certificated for operation with a minimum crew of at least two pilots, or equipped with (a) turbojet engine(s) or more than one turboprop engine.

¹⁶ <https://www.easa.europa.eu/charter-promote-safety-non-commercial-general-aviation>

Such advertisements should inform passengers of the differences in terms of safety requirements compared to flights operated in the commercial air transport regulatory environment, given that it is sufficient to comply with less strict rules for cost-shared flights than in commercial air transport. Passengers should be advised that the pilot may modify or cancel the flight for any reason, even within a short period of time, and is under no obligation to perform it. The rules for cost-shared flights do not specify the proportion of the costs to be covered by the pilot, however, the pilot must also make an appreciable contribution to the direct costs of the flight.

Route selection and data recorders

According to his account, the pilot did not operate the transponder, only an OGN tracker. During the investigation, the IC obtained data recorded by the OGN tracker (*Figure 4*), and on the basis of it found that:

- On the day concerned, the aircraft with reg. mark HA-API flew twice to the airspace above District XI (Lágymányos) of Budapest;
- On one occasion, it flew to Pilisvörösvár and back to Farkashegy airfield;
- Then it flew to the airspace above District XI, Budapest again, twice, along the earlier route;
- The flight ending up in the incident was the sixth take-off on the day concerned, as well as the fifth flight over Lágymányos (District XI). The decrease in power leading to the incident took place on the way back to Farkashegy airfield.



Figure 4: Recorded flights of the aircraft involved in the event on 01/06/2019

The IC obtained the recorded radar image from the competent air traffic management service, and was not able to clearly identify the aircraft concerned.

The IC also viewed previous flights of the affected aircraft through the OGN system (*Figure 5*), several dates of which were indicated in the pilot's flight log book as well. OGN data shows that both the aircraft and the pilot flew regularly on exactly the same route like the flight over District XI (Lágymányos), Budapest that preceded the event.

Pursuant to Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (hereinafter: "SERA"):

SERA.13001 Operation of an SSR transponder¹⁷

- When an aircraft carries a serviceable SSR transponder, the pilot shall operate the transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where SSR is used for ATS purposes.*

¹⁷ Secondary surveillance radar transponder

- c) *Except for flight in airspace designated by the competent authority for mandatory operation of transponder, aircraft without sufficient electrical power supply are exempted from the requirement to operate the transponder at all times.*

SERA.3105 Minimum heights

Except when necessary for take-off or landing, or except by permission from the competent authority, aircraft shall not be flown over the congested areas of cities, towns or settlements or over an openair assembly of persons, unless at such a height as will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface.

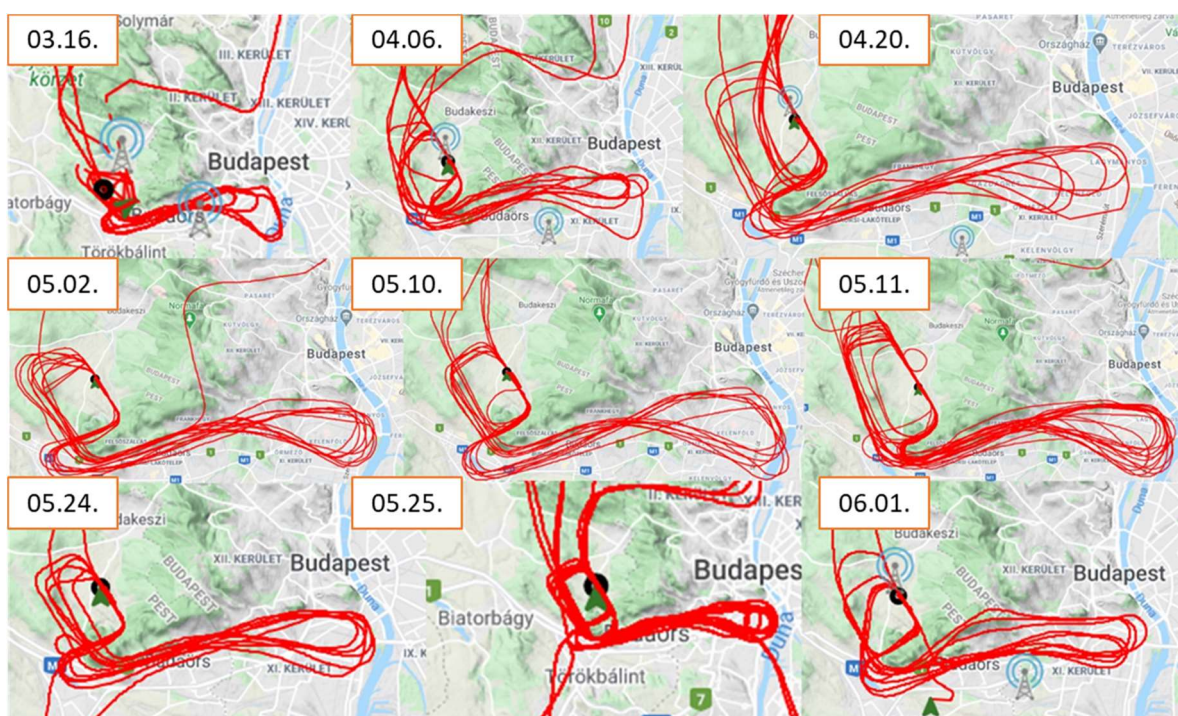


Figure 5: Some flights of the aircraft concerned in 2019

Organisation

The insurance for the aircraft concerned was not contracted by the owner of the aircraft but by a company, which included the aircraft's owner among its owners. The company signing the insurance contract has advertised sightseeing flights on its website, with prices, routes and approximate durations at the time of the event and ever since. The routes described on the website include, among others, viewing the city center from the direction of Districts XI or III, and the Pilis Mountains. Since 2019, the following definition of the flights is displayed on their website: "A cost-saving version of sightseeing flights is the 'cost-sharing flight'. On our site we offer this cost-sharing flight service when we use the term 'sightseeing flight'."

Sightseeing flights other than the form mentioned above fall in the category of commercial activity requiring an air operator certificate (AOC) from the operator and a commercial pilot licence (CPL) from the pilot. Neither the company nor the pilot-owner had an air operator certificate (AOC) registered with the competent authority.

Analysis

Pilot

The pilot involved in the event is an experienced general aviation pilot with ATPL theoretical knowledge, who was presumed to be aware of the regulations and legislation applicable to his activity. He also had little experience with the type concerned.

The IC compared the data recorded by the OGN tracker, the flight log entries, and the pilot's statement with the radar image recorded by the air traffic management service and could not identify any transponder signal emitted by the aircraft involved in the incident. From these and the pilot's report, the IC concluded that the pilot was not operating the transponder of the aircraft and therefore did not comply with his obligations to operate the transponder (see paragraph Route selection and data recorders).

After interviewing the pilot, evaluating the departure/arrival operating hours and the routes recorded by the OGN tracker, the IC concluded that, based on the flight log entry and the operating hours recorded on the spot, the aircraft engine had been running for 0.47 hours = 28.2 minutes since the start-up. When replaying the OGN record of the flight concerned, the IC found that the flight ending up in the emergency landing lasted for 13 minutes, and, on the basis of OGN tracker data, the missing 15.2 minutes cover the duration of the flight path prior to the flight leading up to the incident, therefore contradicts the pilot's statement that the flight leading up to the incident was from his first take-off of the day.

The IC also found discrepancy between the pilot's interview, the flight log entry and the fuel quantity recorded at the scene. According to the flight log the aircraft was taken over with 1/3 fuel, according to the pilot's statement "*the two inboard tanks were full*", which means a fuel level of 60% and not 1/3 - data based on the aircraft flight manual.

Based on the on-site inspection, the IC considers the pilot's report to be more realistic, because after the incident the IC observed a consumption in the 2 main tanks that was proportional to the flight time based on the operating hours. The IC assumes from the fuel level inconsistency that in the approximately 1 hour between the last 2 flights recorded by the OGN tracker, the pilot or another person in the pilot's presence had filled up the 2 internal fuel tanks.

The IC concluded from the seat belts found in the open position that the pilot was either not alone on board or, if alone, had certainly not complied with the empty seat belt requirement in the pre-flight checklist in the operations manual he was using, which requires the seat belts to be fastened and tightened. The possibility of the pilot unbuckling and loosening the seat belts of unused seats after an emergency landing is not considered to be realistic by the IC.

In the opinion of the IC, the pilot made good decisions in the selection of the terrain for landing and in the execution of the emergency landing, which contributed to the fact that no aircraft or personnel were injured.

Selection of the flight path:

SERA.3105 (refer to Route selection and data recorders) regulates that the choice of route must take into account that in case of an emergency, the landing can be performed without undue risk to persons and property on the ground. In the opinion of the IC, the choice of the pre-event route involved significant risks in several respects:

1. In the event of an emergency situation, the availability of suitable landing areas to choose from is limited, which does not give the pilot adequate time to select a suitable area for safe landing within the area covered by the flight route.
2. The proximity of the Danube may also, in the opinion of the IC, give a false sense of safety in planning a possible emergency landing.
3. The upper limit of the uncontrolled airspace is quite limited over the eastern side of District XI, Budapest.

In the present case, during an unexpected emergency, the time available to recognise the emergency and to properly apply the associated emergency procedures is limited due to the low authorised altitude, which further the mental pressure on a pilot with little experience on the type.

On the basis of the data provided by the OGN tracker, the IC has no evidence whether the aircraft concerned violated the lower limit of the controlled airspace or not, but for reasons of flight safety it considers it important to stress that flying with an operational but not operated transponder is against the SERA regulation, and flying without a transponder on the boundary of controlled airspace can in some cases be dangerous.

Operation in uncontrolled airspaces does not require aircraft to be equipped with transponders, but when flying on its boundary, the slightest vertical or lateral deviation can lead to an airspace violation, which may cause loss of separation in the controlled airspace.

An analysis of the historical routes recorded by the OGN system shows that the aircraft involved in the incident usually flies the routes advertised on the website of the company which signed the aircraft liability insurance.

Maintenance

During the additional site inspection, the IC saw an inadequately maintained aircraft engine (refer to Malfunctioned Equipment paragraph for details). During the investigation, the IC was unable to establish with any degree of certainty which of the numerous significant deviations or unprofessional solutions described in the previous chapter, or which of these errors interacted to cause the power degradation during the incident. In the experience of the IC, most of these failures are capable of causing a power degradation on their own.

When reviewing the maintenance documents, the IC found that on 07/08/2018, despite the aircraft having flown only a few hours, the *100 flight hours or annual* maintenance would have been current. After this date, this type of maintenance was not performed for about 8 months, during which time the aircraft flew about 50 hours. Therefore, in the absence of this maintenance during these eight months, the aircraft was considered to be unserviceable.

The IC finds the completed *100 flight hours or annual* maintenance released by the pilot-owner on 04/04/2019 worrisome. According to the IC, the pilot-owner could not have carried out the maintenance in full because he did not have the basic contract or contracts for maintenance and the documentation essential for the maintenance (see Maintenance paragraph) or the ones he had were not valid.

By certifying the above maintenance with his pilot-owner's pilot licence number, the pilot-owner infringed the provisions of Annex VIII of Regulation (EU) No 1321/2014, as he carried out and certified maintenance that requires, in addition to the basic tools and equipment, other specialised and certified and calibrated equipment. Thus, after 04/04/2019, until the incident, the aircraft continued to operate for approximately 50 hours in an unserviceable condition, also due to the unlawfully issued certificate of airworthiness.

According to the IC the reason for this kind of non-compliance with regulation is usually economic, because the result of reducing the resources spent on maintenance is immediately tangible for the owner or operator. Cost reduction may also have been the main reason for not using aviation gasoline in the aircraft in deviation from the strict specifications, even though fuel quality deviations can cause severe engine damage or loss of power. This attitude is reinforced by the fact that these cost reductions do not immediately lead to the necessary deterioration in the condition of the aircraft. This type of irrational operation/maintenance cost reductions carries a high risk to aviation safety.

The IC examined the number of flights, timing of the flight entries in the aircraft log book and the flights of the aircraft recorded in the OGN system and found no significant discrepancy between those recorded by the OGN tracker and those recorded in the logbook during the period under review, but there were flights recorded by tracker that were not listed in any of the documents. However, these inaccuracies and deficiencies do not support the difference of 250 flight hours between the pilot-owner-operated logbook and the engine run-time counter on the airplane instrument panel.

Organisation

The company that insured the aircraft stated on its website, and the pilot involved in the incident mentioned, that they use the aircraft for cost-sharing flights.


The owner of the website where you can buy a sightseeing flight and the contact on the website is the company that signed the liability insurance for the aircraft. This can give false sense of safety to an interested party because a 'cost-sharing' flights booked on a website that appears to be a well-established website is not - despite appearances - operated by company that is operated within the frameworks of a strictly controlled organisation, but in an aircraft which is owned, operated and maintained by the pilot-owner, who is only referred to as the managing director on the website.

A person not knowing the legal background of aviation, may assume a legal environment that reflects a complete and unified organisation, which includes all aspects of proper operation, including aircraft maintenance.

In summary, the IC has identified a number of day-to-day non-compliances in the operating environment of HA-API that individually present a safety risk, but which may interact to increase the likelihood of an incident occurring.

The IC attributed the cause of the incident to maintenance deficiencies linked to economic considerations.

In the opinion of the IC, such deviations from the rules on a day-to-day basis can be well addressed by strengthening the chain of supervision.


Gabor Erdosi
Investigator-in-Charge


Klementina Joó
IC Member

The sole objective of the safety investigation is to reveal the causes and circumstances of aviation accidents or incidents and to initiate the necessary safety measures and make recommendations in order to prevent similar cases in the future. Safety investigation is not aimed at apportioning blame or liability.

General information

This investigation is being carried out by Transportation Safety Bureau on the basis of the following legislation.

- 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 incidents in civil aviation and repealing Directive 94/56/EC,
- Act XCVII of 1995 on aviation,
- Annex 13 identified in the Appendix of Act XLVI. of 2007 on the declaration of the annexes to the Convention on International Civil Aviation signed in Chicago on 7th December 1944,
- Act CLXXXIV of 2005 on the safety investigation of aviation, railway and marine accidents and incidents (hereinafter referred to as Kbt.),
- NFM ¹⁸ Regulation 70/2015 (XII.1) on safety investigation of aviation accidents and incidents, as well as on detailed investigation for operators,

In absence of other relevant regulation in the Kbt., in accordance with Act CL of 2016 on General Public Administration Procedures.

The competence of the Transportation Safety Bureau of Hungary is based on Government Regulation № 230/2016. (VII.29.) on the assignment of a transportation safety body and on the dissolution of Transportation Safety Bureau with legal succession.

Pursuant to the aforesaid legislation,

- Transportation Safety Bureau of Hungary shall investigate aviation accidents and serious incidents.
- Transportation Safety Bureau of Hungary may investigate aviation and incidents which – in its judgement – could have led to accidents of more severe consequences in different circumstances.
- Transportation Safety Bureau of Hungary is independent of any person or entity which may have interests conflicting with the tasks of the investigating body.
- In addition to the aforementioned legislation, the ICAO Doc 9756 and the ICAO DOC 6920 Manual of Aircraft Accident Investigation are also applicable.
- This Report shall not be binding, nor shall an appeal be lodged against it.
- The original of this report was written in the Hungarian language.

Members of the IC have been in no conflict of interest. The persons participating in the safety investigation did not act as experts in other procedures concerning the same case and shall not do so in the future.

The IC shall retain all data having come to their knowledge in the course of the safety investigation. Furthermore, the IC shall not be obliged to make the data – regarding which the owner of the data could have refused its disclosure pursuant to the relevant act – available for other authorities.

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Translation

The present document is a translation from Hungarian. Although efforts have been made to provide a translation as accurate as possible, discrepancies may occur. In such eventuality, the Hungarian version shall prevail.

¹⁸ Ministry for National Development