HELLENIC REPUBLIC
MINISTRY OF INFRASTRUCTURE AND TRANSPORT

AIR ACCIDENT INVESTIGATION AND
AVIATION SAFETY BOARD
(AAIASB)

ACCIDENT INVESTIGATION REPORT
AIRCRAFT I-A468
AT THE GULF OF PATRAS (POSITION KRYONERI)
ON JANUARY 16, 2019

04 / 2021

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I-A468 Aircraft Accident at the Gulf of Patras (Position Kryoneri)
on January 16, 2019

This accident investigation was carried out by the Air Accident Investigation and Aviation Safety Board according to:

- **Annex 13 of the Chicago Convention**
- **EU regulation (EU) 996/2010**
- **Law 2912/2001**

"According to Annex 13 of the Chicago Convention of the International Civil Aviation, EU Regulation 996/2010 and Law 2912/2001, Accidents and Incidents Investigation is not intended to attribute blame or liability. The sole purpose of this Investigation and the findings is to prevent Accidents and Incidents.

Therefore, the use of this Report for any purpose other than to prevent future Accidents and Incidents could lead to misinterpretations."

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TITLE

OPERATOR	**:**	PRIVATE
OWNER	**:**	PRIVATE
MANUFACTURER	**:**	MONETT AIRCRAFT
A/C TYPE	**:**	SONERAI IILTS
COUNTRY OF MANUFACTURE	**:**	USA
NATIONALITY	**:**	ITALIAN
A/C REGISTRATION	**:**	I-A468
LOCATION OF ACCIDENT	**:**	GULF of PATRAS
DATE & TIME	**:**	16/01/2019 at 12:30 LT
Note	**:**	All times LT (LT = UTC + 2h)

SYNOPSIS

On January 16, 2019 the private Ultra-Light aircraft with registration I-A468 (Photo1) during a private flight from Messolonghi Landing Field to Rio Patras and back to Messolonghi Landing Field, crashed into the Gulf of Patras about 1,500 m from the coast Kavourotripa of Kryoneri, (Pictures 1 & 2). The result was the fatal injury of the Pilot that was the only person in the aircraft.

AAIASB was informed the same day and with the AAIASB/176/16.01.2019 document, an Investigation Team was appointed. On January 22, 2019 the International Authorities were notified and ACCREPS have been appointed.

1 Factual Information

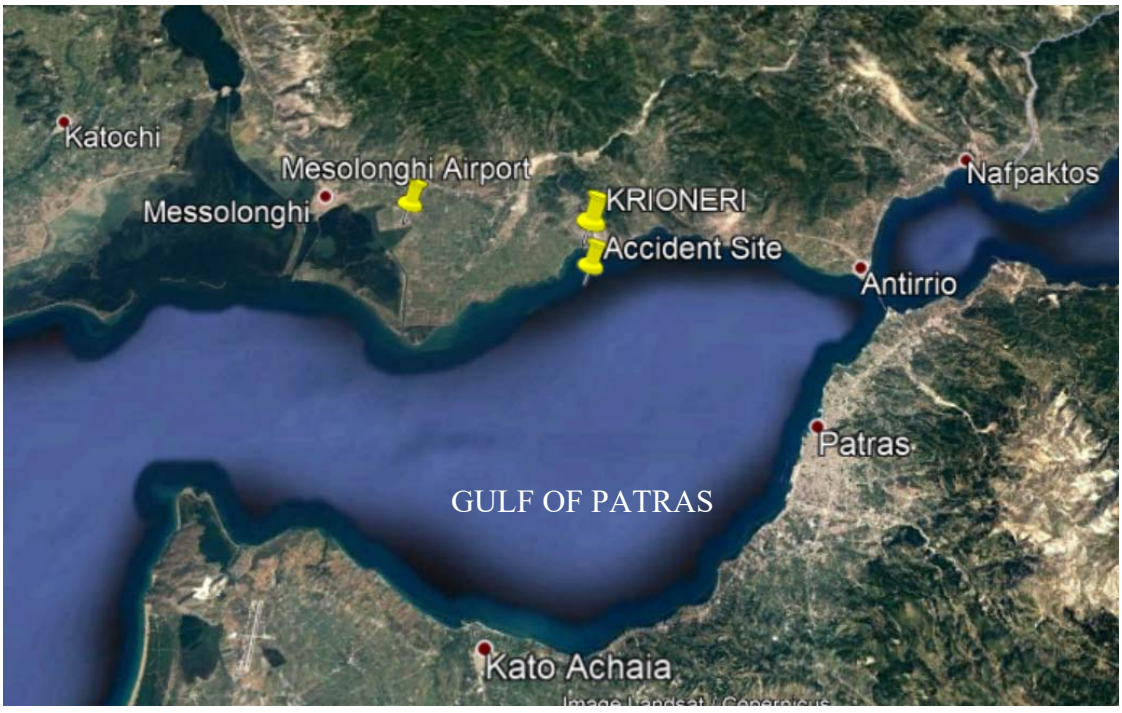
1.1 History of Flight

On January 16, 2019, the pilot of the aforementioned aircraft, after filling a Flight Plan to the Hellenic CAA at Aktion Airport, took-off around 12:15 LT from RWY 25 of Messolonghi Landing Field to execute the flight from Messolonghi to Rio and back to Messolonghi. After take-off, according to a witness, after executing a circle over the Landing Field, continued his flight and at 12:26 LT, he communicated with Araxos airport ATC and reported *"Araxos I-A468 at 1,000 ft''* and at 12:27 LT *"Araxos I-A468 at 1,500 ft''*. Thereafter at 12:28 LT, Araxos ATC after requesting and receiving flight information, asked the pilot to inform Andravida Approach, that was responsible for flights in the region. Also, Araxos ATC advised the pilot to inform Andravida ATC of any take-off from the Messolonghi Landing Field. At 12:29 LT, the pilot communicated with Andravida approach and informed of the intended flight from Messolonghi to Rio – Patras and back to Messolonghi.

Photo 1: SONERAI IILTS aircraft with registration I-A468.

At around 12:30 LT, an eyewitness that was working on the coast of Kavourotripa of Kryoneri, after hearing the noise of the aircraft engine, saw the aircraft crashing violently on the sea with the right wing and thereafter flying for about 50-100 m, turning around her pitch axis. After immobilizing with the nose of the aircraft raised, she sank in the sea. The eyewitness that was about 1,000 m away from the crash site did not noticed any smoke coming out of the aircraft neither saw any part of the aircraft being detached. Also, in his perception, the noise of the engine sounded normal, which stopped being heard after its impact with the sea.

Immediately after the accident, the eyewitness informed the Police, the Fire Service and the Coast Guard.



Picture 1: Gulf of Patras area.

Picture 2: Kavourotripa - Kryoneri area of Etoloakarnania.

In the search and rescue operation that followed on 16/01/2019, from land and sea, which involved vessels of the Coast Guard, private fishing boats, helicopters, a private diving crew and the Fire Service, it was not possible to locate the aircraft and the pilot. No sea pollution was also observed.

On 17/01/2019, at the first day light, the search and rescue operation continued in the sea area of the Gulf of Patras, at the area of Kavourotripa-Kryoneri of Etoloakarnania, during which the right wing of the aircraft was located, as well as a transparent part of the cockpit canopy.

In the search that continued on 18/01/2019, in which the Navy also participated with a sonar, no further wreckage of the aircraft was found, nor the pilot.

During the search that continued on 19/01/2019, the pilot was located at 16:50 LT by divers of the Coast Guard, the pilot was tied with the seat belt inside the cockpit of the aircraft, at a depth of approximately 38.50 m and position 38°19′38′′ N - 021°35′73′′ E. The point where the aircraft was found is on the route it would perform, it is 1,500 m from the nearest land point (Kavourotripa-Kryoneri, Etoloakarnania) and is at a distance of about 10,750 m from the Messolonghi Landing Field.

Then the pilot was lifted, transferred to the General Hospital of Messolonghi and then to the Forensic Medicine Service of Patras for an autopsy – necropsy.

On 20/01/2019 at 16:00 LT, the aircraft was lifted, which was then transferred for safekeeping to the Messolonghi Port Authority.

1.2 Injuries to Persons

Injuries	Flight Crew	Passengers	Others
Deaths	1	0	0
Serious	0	0	0
Minor / None	0	0	0

1.3 Damage to the Aircraft

The aircraft was completely destroyed, its right wing was detached from the fuselage and had a large deformation. The engine could not be found.

Photo 2: Aircraft wreckage.

1.4 Other Damages

No other damages or damages to third parties.

1.5 Flight Crew Information

1.5.1 The Pilot

Pilot License	:	Ultralight aircraft (UL 3 Axis) A.M. 0701 First issue on 19/09/2018 Valid until 19/09/2023
Medical Certificate validity	:	Class 2 valid until 04/09/2019 LAPL valid until 04/09/2019
Pilot Experience	:	Until 16/01/2019 total 43:30 Hrs. 26 Hrs. to obtain the license 17:30 Hrs. in command on the SONERAI II
Station Radio License	:	Limited Degree in Radiotelephony GR-007321 valid until 14/10/2023

The pilot was a retired Officer of the Hellenic Air Force and a graduate of the Hellenic Air Force Academy in the Department of Aircraft Engineering, with extensive experience in aircraft maintenance.

1.6 Aircraft Information

1.6.1 General Information

The aircraft had the following certificates and licenses:

- Registration Certificate: Number I-A468 with date of issue 13/09/2010.
- Flight License (Permit to Flight): Date of issue 15/11/2016 without expiration date. The above license ceases to be valid in case of change of owner and when the aircraft has been modified which changes its flight characteristics.
- Aircraft Radio Station License: ISP/RMVDS/RM/44 Number with date of issue 18/02/2011 and valid until 31/12/2020.

The aircraft was insured from 02/12/2018 until 02/12/2019 in the insurance company ASCAIR, according to the contract number 9647-58-P391608.

1.6.2 Aircraft

Manufacturer	:	MONETT AIRCRAFT
A/C Type	:	SONERAI IILTS
Manufacturer Serial Number	:	Home Builder
Date of first Flight	:	09/10/2010
Maximum Take-off Mass	:	450 Kg
Aircraft Total Flight HRS	:	91.4 Hrs
Last maintenance	:	17/10/2018 on total 86.8 Hrs

1.6.3 Engine

Manufacturer	:	REVMASTER
TYPE	:	REVMASTER 2100 D
POWER	:	75 CV
Cubic capacity	:	2073 cc
Total hrs.	:	91.4 hrs.

1.6.4 Aircraft Characteristics

SPAN	:	18’- 8’’
LENGHT	:	20’- 4’’
HEIGHT	:	5’- 5’’
FUEL CAPACITY - STD	:	10 GALLONS
FUEL CAPACITY - AUX	:	6 GALLONS
EMPTY WEIGHT	:	540 LBS
USEFUL LOAD	:	610 LBS
GROSS WEIGHT	:	1,150 LBS
WING AREA	:	84 SQ FT
WING LOADING	:	13.7 LBS/SQ FT
SEATS	:	2 TANDEM
DESINGN LIMIT	:	750 LBS AEROBATIC GROSS +6/-6 G
DESINGN LIMIT	:	1,150 LBS GROSS +3,8/-3,8 G
TAKE OFF DISTANCE	:	900 FT
STALL SPEED	:	55-65 MPH
LANDING SPEED	:	60-65 MPH
CRUISING SPEED (85%)	:	130-140 MPH
VNE	:	200 MPH
RATE OF CLIMB GROSS WEGHT	:	500 FPM

The SONERAI II, has acrobatic characteristics, with small wings and is high performance aircraft. For more autonomy, there is also a spare fuel tank that is placed on the floor under the passenger seat.

Photo 3: The aircraft with registration I-A468 at Souda Airport the day of first flight.

1.7 Meteorological Information

METAR: LGRX 161020Z 32004KT CAVOK 10/M06 Q1022

1.8 Communications

All communications with ATC were conducted without problems.

1.9 Medical Information

Forensic examination reveals potentially fatal injuries compatible with falling from a height. Pilot death was the result of drowning in sea water. This probably occurred as the result of the collision, the injuries suffered and the sinking of the aircraft. The safety belts were not released. Toxicological tests, hallucinogenic substances, CNS stimulants and opiates, were negative, with the exception of the blood alcohol test result which was positive (0.23 g/L). However, as stated in the forensic examination, the absence of alcohol in the bile sample, suggests that the alcohol is most likely the result of sepsis and not of alcohol consumption.

1.10 Fire

Not applicable.

1.11 Supplementary Information

1.11.1. Aircraft SONERAI II history

In 1971, the SONERAI I mid-wing aircraft with a tail wheel was presented at the conference of the American Experimental Aircraft Association (EAA) in Oshkosh, USA. In 1973, the two-seat (two tandem), mid-wing SONERAI II was released, with a tail wheel, where the pilot flies the aircraft from the rear seat.

Then, the SONERAI II-L was introduced which is the same aircraft but with low wings, followed by the SONERAI II-LT which has a nose wheel and finally the SONERAI IILTS with a longer fuselage. The fuselage and its tail surfaces are made of 4130 steel pipes, with fabric cover and the wings are made of aluminum 2024-T3. That specific aircraft is made by individuals (Home Builders), who either assemble it from parts, provided by the manufacturer or build it themselves from scratch from designs, with the exception of some parts that are supplied by the manufacturer. The specific aircraft I-A468, was built in Crete by members of the Chania Aeroclub and made its first flight on 09/10/2010 at Souda airport.

Photo 4: SONERAI II to depict steel tubes aircraft fuselage construction.

1.11.2 Aircraft wreckage findings

An inspection of the wreckage of the aircraft revealed that:

a) There was no problem in connecting the flight controls to the Rudder. The cables were in good condition, as were the connectors.
b) There was no problem in the connection of the flight controls with the Elevator, which has deformations due to impact, as well as the body of the push/pull bars (rod body).
c) The right wing was found detached from the aircraft, it has undergone great deformation (Photo 5) as shown at the point of fracture (Photo 6), with deformations compatible with static fracture, indication of the violent impact on the sea surface.

Photo 5: Right wing rear spar area.

On the right wing, the aileron was detached together with the rear spar of the wing and was never found.

The rivets that join the skin of the wing to the rear spar, were found with a rearward elongation.

There is no evidence of a problem with the aileron wirings, with any discontinuity found in rod ends, due to static fracture as a result of the aircraft impact to the sea.

No traces of fire were found in the wreckage.

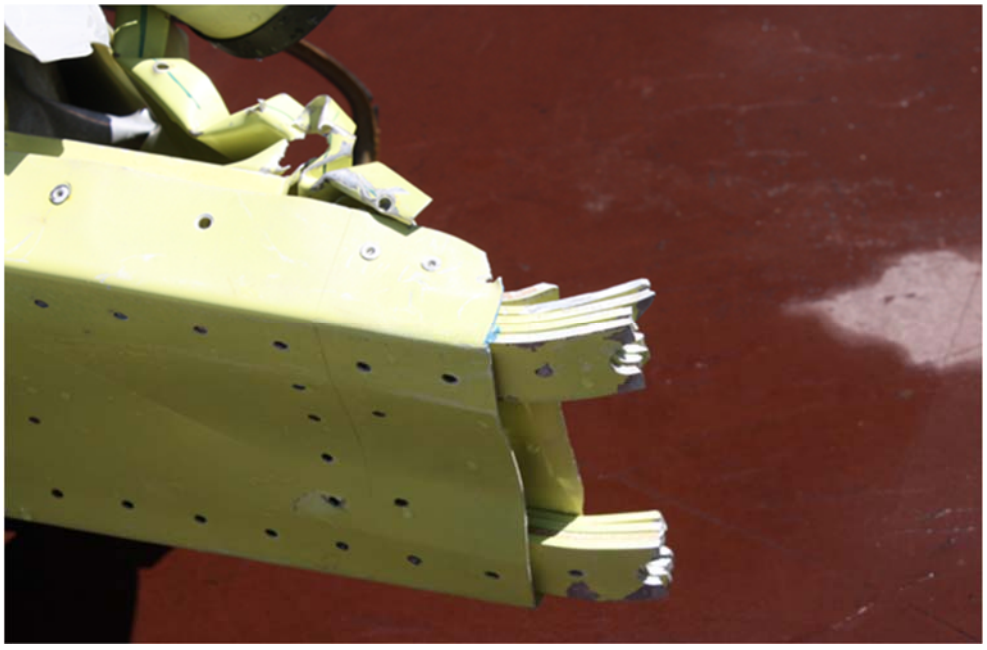


Photo 6: Right wing forward spar fracture.

2 ANALYSIS

According to the law, the pilot could perform the flight because:

a) The pilot had all the documents required, a license of ultra-light aircraft operator, a medical certificate, a limited degree in Station Radiotelephony License in force and had not used banned substances and alcohol, as emerged from the autopsy / necropsy.

b) The aircraft was airworthy having:
   1) followed the prescribed certification procedures,
   2) had not undergone a modification that would change the original flight characteristics,
   3) had not been found that an Airworthiness Directive had been issued that affects the specific type of aircraft and
   4) its maintenance was performed as provided by law, by the pilot himself who had extensive experience in aircraft maintenance as he was a retired officer of the Hellenic Air Force and a graduate of the Department of Aircraft Engineering of the Hellenic Air Force Academy. Also, in the records made after each flight, there does not seem to have been any technical problem that would have contributed to the accident.

c) The prevailing meteorological conditions in the area of the accident were good.

According to an eyewitness, the engine of the aircraft was running until she hit the sea, its noise indicated normal operation, and no smoke was observed coming from the aircraft, as confirmed by no traces of fire in the wreckage.

According to the same testimony, the aircraft crashed into the sea with the right wing, which was detached from the fuselage after its contact with the sea, which is confirmed by the findings of the wreckage, since the point of fracture presents deformations compatible with static fracture, indication of violent impact at sea.

The aileron was detached from the right wing together with the rear spar of the wing, as a result of the violent impact of the wing at sea, which is indicated by the rivets that connect the skin of the wing with the rear spar of the wing which were found with a rearward elongation.

From the inspection carried out in the wiring of the controls of the aircraft, it does not appear that there was any problem in their operation. Any deformations found in the rod bodies and rod ends, were caused by the impact of the aircraft at sea. The rudder control cables, were also found in good condition.

From the above, it does not appear that there was any technical problem that led to the inability of the pilot to control the aircraft.

The damage of the aircraft during its contact with the sea, does not indicate an attempt by the pilot to ditch, but rather indicates an uncontrollable fall of the aircraft. At a distance of about 1,500 m from the crash site, there were airfields where a forced landing could have been made more safely.

Given that the pilot:

a) had not used illicit substances or alcohol,
b) from the forensic examination, no pathological conditions were found that could have contributed to the loss of control of the aircraft before impact.
c) The pilot had limited flying experience, (a total of 43:30 hours from which 26 hours for the acquisition of his license and 17:30 hours after his acquisition).
d) The SONERAI IILTS has acrobatic characteristics, which probably contributed to the pilot executing a manoeuvre and lost control of the aircraft which he could not regain resulting in her violent collision on the sea.

3 CONCLUSIONS

3.1 Findings

3.1.1 The aircraft was airworthy and capable of performing the flight and had all her legal documents in force.

3.1.2 The pilot had his license and medical certificate in force.

3.1.3 The prevailing meteorological conditions in the area of the accident, were good and did not contribute to the accident.

3.1.4 The death of the pilot occurred due to drowning and not from previous pathological causes.

3.1.5 No hallucinogenic substances and alcohol were detected in the pilot's body.

3.1.6 The aircraft engine was operating at the time of her impact on the sea.

3.1.7 The collision of the aircraft on sea was violent and does not indicate an attempt by the pilot to ditch.

3.1.8 No problem was found with the operation of the aircraft controls.

3.1.9 The pilot had extensive experience in aircraft maintenance, but limited experience as a pilot.

3.1.10 The crash of the aircraft took place at a short distance from a land point (1,500 m), where a landing could safely be performed.

3.2 Possible Cause(s)

The loss of control of the aircraft during flight.

3.3 Contributing Factors

The pilot's limited flight experience.

4 SAFETY RECOMMENDATIONS

No Safety Recommendations can be issued.

Nea Philadelphia, 04 November 2021

THE CHAIRMAN

Ioannis Kondylis

THE MEMBERS

Akrivos Tsolakis

Grigorios Flessas

Christos Valaris

Charalampos Tzonos-Komilis

Exact Copy
THE SECRETARY

Kyriakos Katsoulakis