

# FINAL REPORT

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INCIDENT 2021/1141

STATE COMMISSION ON AIRCRAFT ACCIDENTS INVESTIGATION (PKBWL)

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# FINAL REPORT

## INCIDENT

OCCURRENCE NO – 2021/1141

AIRCRAFT – SR22 / UR-ISA, AT-3 R100/SP-RWF

DATE AND PLACE OF OCCURENCE – 15 May 2021, EPBC



The Report is a document presenting the position of the State Commission on Aircraft Accidents Investigation concerning circumstances of the air occurrence, its causes and safety recommendations. The Report was drawn up on the basis of information available on the date of its completion.

The investigation may be reopened if new information becomes available or new investigation techniques are applied, which may affect the wording related to the causes, circumstances and safety recommendations contained in the Report.

Investigation into air the occurrence was carried out in accordance with the applicable international, European Union and domestic legal provisions for prevention purposes only. The investigation was carried out without application of the legal evidential procedure, applicable for proceedings of other authorities required to take action in connection with an air occurrence.

The Commission does not apportion blame or liability.

In accordance with Article 5 paragraph 6 of the Regulation (EU) No 996/2010 of the European Parliament and of the Council on the investigation and prevention of accidents and incidents in civil aviation [...] and Article 134 of the Act – Aviation Law, the wording used in this Report may not be considered as an indication of the guilty or responsible for the occurrence.

For the above reasons, any use of this Report for any purpose other than air accidents and incidents prevention can lead to wrong conclusions and interpretations.

This Report was drawn up in the Polish language. Other language versions may be drawn up for information purposes only.

**WARSAW 2022**

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## Abbreviations

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<b>AIP</b>	Aeronautical Information Publication
<b>AFIS</b>	Aerodrome Flight Information Service
<b>ATPL(A)</b>	Airline Transport Pilot Licence (airplanes)
<b>ATZ</b>	Aerodrome Traffic Zone
<b>CAA</b>	Civil Aviation Authority
<b>CAVOK</b>	Cloud and Visibility OK
<b>FATO</b>	Final approach and take-off area
<b>FH</b>	Flight Hours
<b>HEMS</b>	Helicopter Emergency Medical Service
<b>PPL(A)</b>	Private Pilot Licence (airplanes)
<b>VFR</b>	Visual Flight Rules
<b>VMC</b>	Visual Meteorological Conditions

## General Information

Occurrence reference number:	<b>2021/1141</b>			
Type of occurrence:	INCIDENT			
Date of occurrence:	15 May 2021			
Place of occurrence:	EPBC			
Type and model of aircraft:	Airplane, Cirrus SR22 / Airplane, Aero AT-3 R100			
Aircraft registration marks:	UR-ISA / SP-RWF			
Aircraft user/operator:	GALKAPS, Ukraine / ATO Runway			
Aircraft Commander:	PPL(A) / CPL(A)			
Number of victims/injuries:	Fatal	Serious	Minor	None
	0	0	0	4
Domestic and international authorities informed about the occurrence:	<b>Polish Civil Aviation Authority (ULC), UE, EASA, NBAAI Ukraine, NTSB United States of America, TSB Canada</b>			
Investigator-in-charge:	Grzegorz Pietraszkiewicz			
Investigating authority:	State Commission on Aircraft Accidents Investigation (PKBWL)			
Accredited Representatives and their advisers:	Not appointed			
Document containing results:	FINAL REPORT			
Safety recommendations:	NONE			
Addressees of the recommendations:	Not applicable			
Date of completion of the investigation:	28.11.2022			

## Synopsis

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On 15 May, 2021 the crew of the Cirrus SR22 aircraft, UR-ISA registration marks performed a return flight, through the VFR JULIETT and LIMA waypoints, to the EPBC aerodrome. There was a pilot and a passenger on board the airplane. The passenger, according to his statement, played the role of a "safety pilot" in that flight and carried out radio communication in Polish. The flight coordinator provided the crew with information about the traffic in the aerodrome traffic circuit. Due to dense traffic, the UR-ISA crew decided to perform a circling in the third turn in order to achieve proper separation from other aircraft. The passenger informed about this intention via radio. According to the statements of the UR-ISA crew, they watched the airplane approaching the third turn, which was an AT-3, SP-RWG, during a training flight with an instructor and a student. The crew of the UR-ISA completed the circling and continued the aerodrome traffic circuit, at safe distance (in their opinion), in front of the SP-RWG aircraft. The SP-RWG instructor assessed that the UR-ISA was too close to his airplane.

The UR-ISA crew continued their flight to the fourth turn in order to land on RWY 28. In front of the UR-ISA there was an AT-3, SP-RWF registration marks that performed a training flight. Around 14:05 hrs UTC, after the fourth turn, the SP-RWF crew reported the final and the intention to land on RWY 28. Moments later, the same position was reported by the UR-ISA crew. A while later, the SP-RWF instructor noticed UR-ISA flying below and landing on RWY28. The UR-ISA vacated RWY 28 via TWY A, then the SP-RWF landed and taxied in TWY B. The SP-RWG landed as the last one.

The investigation was conducted by Grzegorz Pietraszkiwicz – PKBWL Member.

### **Cause of the occurrence:**

**The cause for overtaking another airplane on the final was probably loss of situational awareness by the UR-ISA pilot in the flight along aerodrome traffic circuit.**

### **Contributing factors:**

- 1) UR-ISA speed approximately 20-30 kt higher than the speed of other airplanes in the aerodrome traffic circuit.
- 2) Inappropriate airspace observation by the UR-ISA crew.
- 3) Communication in Polish maintained by the passenger, instead of the pilot-in-command, who did not have appropriate language proficiency.
- 4) Incorrect monitoring of Babice Radio frequency by the crew of the UR-ISA aircraft.
- 5) Flight coordinator failure to react to almost simultaneous reporting final by the crews of two aircraft.

- 6) The shape of the EPBC aerodrome traffic circuit and the related limitations resulting from the urban character of the aerodrome surroundings.

PKBWL proposed one safety recommendation after the investigation.

## 1. FACTUAL INFORMATION

### 1.1. History of the flight

On 15 May, 2021, in the afternoon, air activities were conducted in the area of EPBC aerodrome - aerodrome traffic circuits, en-route flights, arrivals, departures and glider flights. The flight coordinator appointed by the aerodrome operator, used the frequency of Babice Radio and provided crews with information about traffic in the aerodrome traffic circuit.

The crew of the Cirrus SR22 airplane, UR-ISA registration marks, performed a return flight to the EPBC via the VFR JULIETT and LIMA waypoints. During this flight, the aircraft pilot and a passenger were on board. The passenger, according to his statement, played the role of a "safety pilot" in that flight, at each mandatory check-in point, he reported the aircraft position in Polish. The purpose of the flight was to familiarize the pilot with the procedures and the shape of the EPBC aerodrome traffic circuit. UR-ISA entered into the circuit to RWY 28 in the second turn, and when approaching the third turn, the crew could see at least two light airplanes ahead, which, in their opinion, were much slower than the Cirrus. The UR-ISA crew estimated that taking into account UR-ISA speed higher by about 30 kt, it may be a problem with maintaining safe separation on the final. Therefore, the crew decided to make a circling in the area of the third turn in order to establish a proper separation. Therefore, the passenger communicated this intention via radio. The UR-ISA crew statement shows that they observed the airplane approaching the third turn, which was an AT-3, SP-RWG registration marks, on a training flight along the circuit. The crew of the UR-ISA completed the circling and continued the aerodrome traffic circuit, at safe distance (in their opinion), in front of the SP-RWG aircraft. The SP-RWG instructor estimated that the UR-ISA was about 50-60 m in front of him and asked its crew whether they could see him, but received no answer. After the third turn, the instructor asked the UR-ISA crew again if they could see him and then received confirmation.

The UR-ISA crew continued the flight to the fourth turn in order to land on RWY 28. UR-ISA was preceded by AT-3 aircraft, SP-RWF registration marks, performing a training flight in the circuit. Around 13:05 hrs UTC, after the fourth turn, the SP-RWF crew reported the final and the intention to land on RWY 28. A while later, the same position was reported by the UR-ISA crew. Suddenly, the instructor of the SP-RWF noticed UR-ISA flying below and landing. The UR-ISA vacated RWY 28 via TWY A, then the SP-RWF landed and taxied in TWY B. The SP-RWG landed as the last one.

After landing, the SP-RWG instructor wanted to discuss the incident with the UR-ISA crew. According to the instructor's statement, the UR-ISA pilot told him that there was no problem and that he had not wanted to wait too long to enter the circuit. The SP-RWG instructor did not know that he was talking to the passenger instead of the pilot. The statement of the UR-ISA passenger showed that the SP-RWG instructor had comments about the UR-ISA crew circling in the third turn. According to the SP-RWG instructor, the UR-ISA crew should have left the circuit and wait in the area of ZULU waypoint, flying over the northern side of the Vistula river.

## 1.2. Injuries to persons

None.

## 1.3. Damage to aircraft

None.

## 1.4. Other damage

None.

## 1.5. Personnel information (crew data)

UR-ISA pilot:

- Pilot, male, aged 44, Latvian nationality;
- PPL(A) issued by the Ukrainian Civil Aviation Authority;
- valid aero-medical certificate issued by Polish aero-medical examiner;
- language proficiency: English – level 4;
- total flight time: 388 FH (according to his statement);
- on type flight time: 146 FH (according to his statement);

SP-RWF crew

a) pilot-in-command:

- female, aged 27;
- CPL(A);
- valid Class 1 aero-medical certificate;
- total flight time: 823 FH 07 min (according to statement);
- type flight time: 439 FH 22 min (according to statement);
- instructor flight time: 467 FH 27 min (according to statement);

b) student-pilot:

- male, aged 56;
- valid Class 2 aero-medical certificate;
- total (and on type) flight time: 15 FH 33 min (according to his statement)

SP-RWG crew

a) pilot-in-command:

- male, aged 41;
- CPL(A);
- valid Class 1 aero-medical certificate;
- total flight time: 1135 FH (according to statement);
- type flight time: 585 FH (according to statement);
- instructor flight time: 772 FH (according to statement);

b) student-pilot:

- male, aged 35;
- valid Class 2 aero-medical certificate;

- total (and on type) flight time: 45 h 09 min (according to statement)

## 1.6. Aircraft information

- 1) The Cirrus SR22 is a single piston engine, propeller airplane manufactured by the American manufacturer Cirrus Aircraft. The airplane can carry four people, including one pilot. The single-controls system version participated in the occurrence.



Fig. 1 Cirrus SR22 aircraft, UR-ISA registration marks

[source: internet, [www.airplanespotters.net/photo/1217602/ur-isa-private-cirrus-sr22-gts](http://www.airplanespotters.net/photo/1217602/ur-isa-private-cirrus-sr22-gts)]

### Technical data:

wingspan	11,68 m	cruise speed	180 kt
length	7,92 m	max. speed	200 kt
height	2,72 m	MTOM	1542 kg
min. speed	60 kt		

- 2) Aero AT-3 R100 is a single piston engine, propeller airplane manufactured by the Polish AERO Aircraft. The airplane is equipped with a dual control system. The airplane can carry two persons.



Fig. 2 Aero AT-3 R100 aircraft, SP-RWF registration marks [source: internet, <https://www.airplanespotters.net/photo/1167250/sp-rwf-runway-pilot-school-aero-at-3-r100>]

#### Technical data:

wingspan	7,552 m	cruise speed	108 kt
length	5,88 m	max. speed	119 kt
height	2,23 m	MTOM	582 kg
min. speed	60 kt		

### 1.7. Meteorological information

METAR from 15:00 for EPMO aerodrome located 27 km north-west of EPBC airport:

METAR EPMO 151400Z 23007KT CAVOK 19/06 Q1008=

METAR from 15:00 for EPWA aerodrome located 12 km south of EPBC airport:

METAR EPWA 151400Z 29009KT 250V310 CAVOK 19/07 Q1008 NOSIG=

Both METAR messages indicated CAVOK conditions, which meant that:

- operational significant cloudiness was not observed;
- TCU (towering cumulus) and CB (cumulonimbus) clouds were not observed;
- there were no weather phenomena, and the visibility was 10 km and more.

VMC conditions prevailed in the ATZ EPBC airspace allowing VFR flights.

### 1.8. Aids to navigation

EPBC aerodrome is not equipped with ground aids to navigation.

### 1.9. Communications

The aircraft crews maintained communication on the Babice Radio frequency (122.305 MHz) with the flight coordinator.

## 1.10. Aerodrome information

### Warszawa – Babice, EPBC Aerodrome

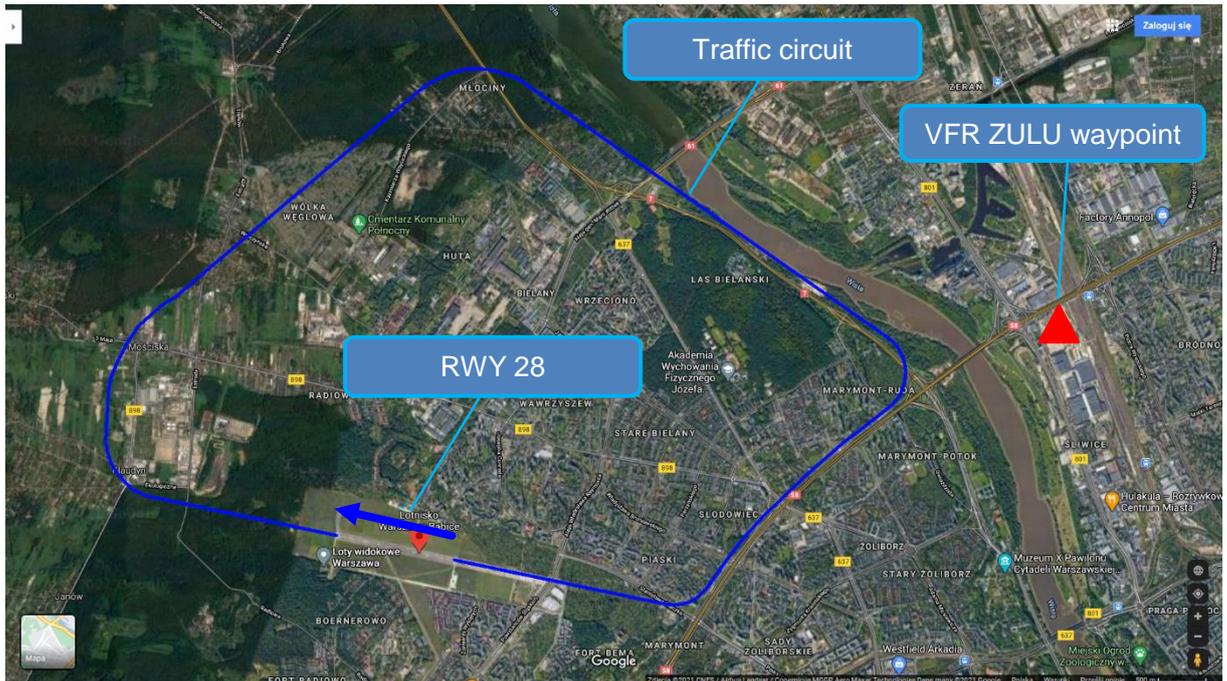


Fig. 3 EPBC aerodrome traffic circuit [source: internet, Google Earth, PANSA]

VFR operations are allowed at the EPBC aerodrome. AFIS is provided.

Runways:

- 10R, 28 L, concrete, 1301x90 m;
- 10L, 28 R, grass, 1000 x 150 m.

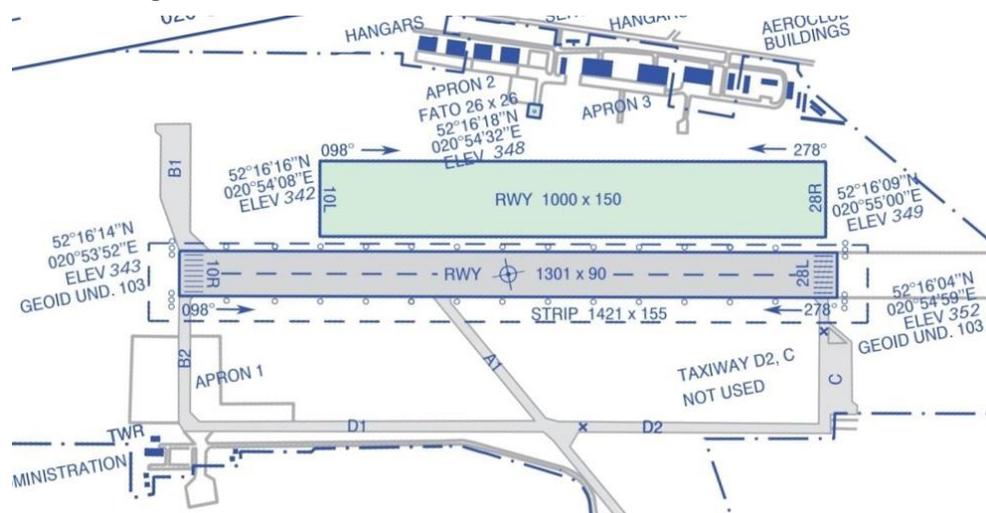


Fig. 4 EPBC aerodrome scheme [source: internet, Google Earth, PANSA]

## 1.11. Flight recorders

The incident airplanes were not equipped with flight recorders.

### **1.12. Wreckage and impact information**

Not applicable.

### **1.13. Medical and pathological information**

Not applicable.

### **1.14. Fire**

Fire did not occur.

### **1.15. Survival aspects**

Not applicable.

### **1.16. Tests and research**

An analysis was conducted based on the crews' and flight coordinator's statements.

### **1.17. Organizational and management information**

The owner of the Cirrus SR22 aircraft, UR-ISA registration marks was GALKAPS company based in Ukraine. The pilot was making a touristic flight.

ATO Runway was the owner of the AT-3 SP-RWF and SP-RWG airplanes. The crews performed training flights for the PPL (A) license.

On 20.05.2022. DFR was sent for consultation to: Civil Aviation Authority, Logistics Service Center, ATO Runway, EASA, NBAAI Ukraine, NTSB United States, TSB Canada.

None of the addressees submitted comments to the DFR.

The representative of the EPBC airport manager did not agree with the safety recommendation, considering the current provisions in the AIP VFR Poland AD 4 EPBC as clear and understandable to crews. In his position statement, he pointed out that "it is not anyone else, but the crew themselves, who should decide whether they can handle the traffic situation, the construction of the circle at EPBC and the applicable procedures."

The President of the Civil Aviation Authority has not submitted comments on the draft safety recommendation for the Logistics Service Center.

The SCAAI reiterates its position that the Logistics Service Center (manager of EPBC airfield) should introduce such provisions in the AIP VFR Poland that will clearly indicate what maneuvers are not allowed in flight on the aerodrome's traffic pattern.

### **1.18. Additional information**

None.

### **1.19. Useful or effective investigation techniques**

Standard investigation techniques were applied.

## 2. ANALYSIS

There were two persons aboard the Cirrus SR22 aircraft, UR-ISA registration marks. The pilot-in-command, a Latvian citizen was a holder of PPL(A) issued by the Civil Aviation Authority of Ukraine. He had confirmed linguistic proficiency of English language at ICAO level 4. He did not have confirmed language proficiency in Polish.

The passenger aboard the US-ISA aircraft, aged 40, was a holder of ATPL(A) and a valid Class 1 aero-medical certificate. According to the passenger's statement, his flight time on the day of the accident was as follows: total 6,850 hours, on Cirrus SR22 type about 1,200 hours. The passenger also stated that he maintained radio communication during the flight in the EPBC aerodrome traffic circuit. The Cirrus SR22 aircraft involved in the occurrence was equipped with a single controls system and radio communication should be maintained by the pilot. Both AFIS and the flight coordinator were able to ensure radio communication in English, according to the information in AIP VFR EPBC AD 4.8.

The crew of the UR-ISA aircraft stated that due to the profile and construction of the wing, Cirrus SR22 has a relatively high stall speed, which in turns with greater roll angles must not be less than 95-100 kt. Therefore, in the aerodrome circuit, the flight speed was about 20-30 kt higher than that of the other aircraft.

If the above speed difference exists, there is a problem with maintaining separation between aircrafts in the EPBC aerodrome traffic circuit. On other aerodromes where the pattern of the circuit is not so strictly defined, it is possible to overtake other aircraft on the outer side of the circuit, make a circling or extend the downwind leg, however such manoeuvres are not allowed on the EPBC aerodrome.

Nevertheless, regardless of the circuit flight procedure used, the pilot is obliged to observe the airspace and to maintain separation from other aircraft.

The EPBC operator has published information about the aerodrome traffic circuit in AIP VFR Poland<sup>1</sup>. In item EPBC AD 4.10.12 NAVIGATION WARNING the following text is included:

"The aerodrome is surrounded by high-density housing. Strict adherence to the aerodrome's circuit patterns and minimum flight altitudes is mandatory. Radio contact is mandatory. The use of operational transponder is recommended.

Exemptions are possible only in emergency."

Item EPBC AD 4.10.13 INFORMATION ON NOISE REDUCTION includes the following entry:

"Area of extreme sensitivity to aircraft noise. Strict adherence to published flight procedures and required altitudes is mandatory. All aircraft tracks, flight altitudes and noise continuously monitored and recorded by aerodrome authorities."

In AIP VFR Poland, the operator of the EPBC presented the rules of the traffic circuit, which definitely differ from the general recommendations contained in the Advisory

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<sup>1</sup> AIP VFR Polska – VFR AD 4 EPBC 4.10.4 Traffic circuit

Circular No. 001/2010<sup>2</sup> of the President of the Civil Aviation Authority. The analysis of the AIP VFR Poland rules shows that the operator of the EPBC designated the same routes and flight altitudes in the aerodrome traffic circuit for airplanes, gliders, microlights and rotorcrafts, but did not indicate how to maintain separation between them. Deviations from the rules published in AIP Poland are possible only in emergency situations, approaches to landing agreed by helicopter crews with AFIS, and HEMS operations for which FATO has been designated.

Due to significant differences between the recommendations of the President of CAA contained in the Advisory Circular No. 001/2010 and those published for the EPBC aerodrome, it seems appropriate to clarify the provisions in AIP VFR Poland so that they are unambiguous and clearly emphasize the specificity of the EPBC aerodrome. This is of great importance for the flight crews arriving at the aerodrome occasionally, with particular emphasis on solo training flights. It should be emphasized that during training flights on EPBC, students do not acquire the typical habits of flying traffic circuit required on most aerodromes and landing fields.

During the investigation of the incident, the SP-RWG instructor stated that for safety reasons, while performing a circuit flight, he does not wait and would not wait in any turn, especially over the EPBC aerodrome, which is characterized by exceptionally dense aircraft traffic. Moreover, he stated that if he had to make a circle to maintain the separation, he would have exited the circuit and make it in the area of the ZULU waypoint, keeping close to the northern side of the Vistula river until it was possible to join the circuit with a safe separation (Fig. 5).

Selection of such area for a circle would mean that an aircraft would be between the third turn of the circuit to RWY 28 and the ZULU VFR waypoint, on or near the EPBC ATZ boundary. This would mean making a circle in the place where aircraft leaving the circuit and arriving from the VFR ZULU waypoint to the third turn would routinely pass. For safety reasons, such a solution is unacceptable.

After completing the circle in the third turn, the UR-ISA flight crew continued their traffic circuit flight. In the analysed occurrence, the positions of the airplanes were determined on the basis of the crews' statements, therefore, assessment of a hazard to aircraft safety was largely biased, based on the perception and feelings of the participants. The SP-RWG instructor expected the UR-ISA flight crew to maintain greater distance between their airplanes after completing the circle in the third turn. He estimated that the distance between the aircraft was too short, around 50–60 m. The crew of the UR-ISA took into account the higher speed of its own aircraft, which ensured an increase in the separation to the SP-RWG airplane over time. In order to maintain separation, the SP-RWG instructor reduced speed.

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<sup>2</sup> The Advisory Circular contains the principles of good practice related to a standard aerodrome traffic circuit in the Polish Airspace.

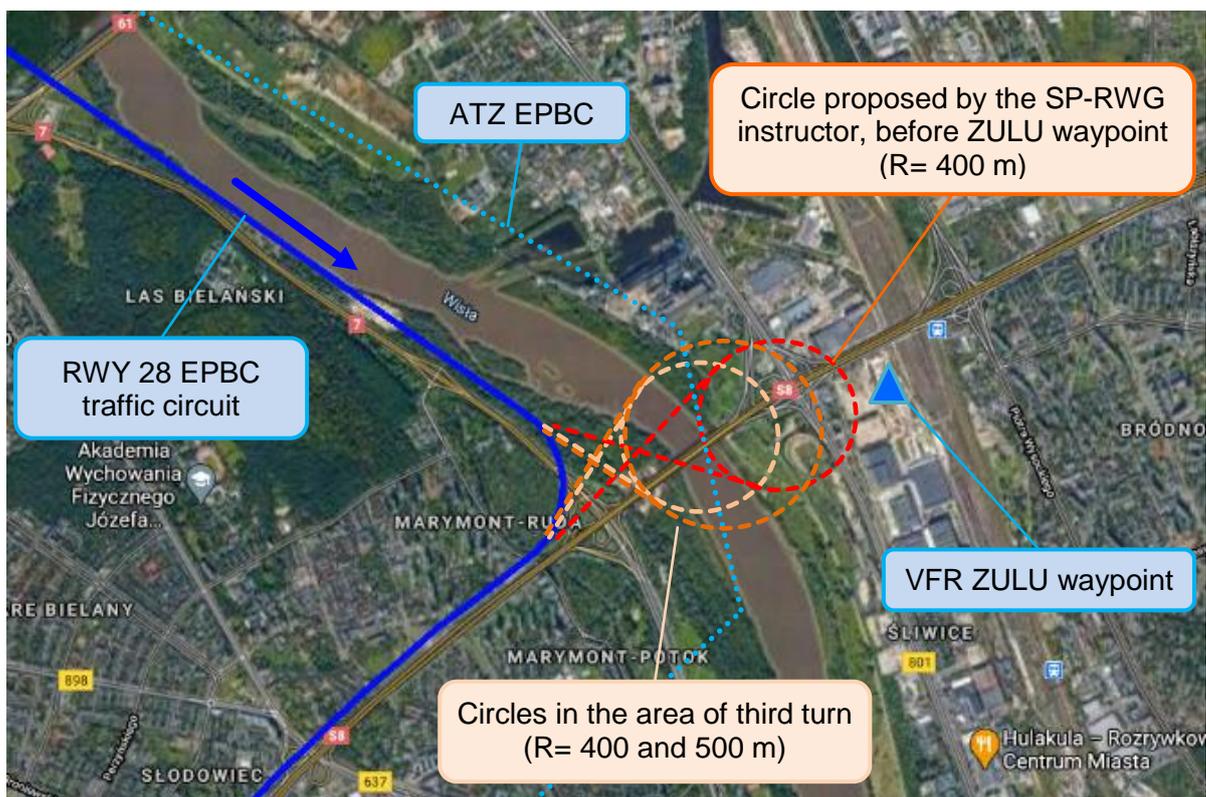


Fig. 5 Circling flight lap locations maintaining the separations between aircraft in the EPBC aerodrome traffic circuit – RWY 28 [source: internet, Google Earth, PANSA]

Two instructors of AT-3 stated that, the UR-ISA overtook the SP-RWF on the final. The UR-ISA pilot should have noticed the SP-RWF in front of him. Even if he had not noticed this airplane, it should have reacted to the report of final by the SP-RWF crew. Overtaking another airplane on the final and not responding to the report on final indicate that the UR-ISA crew lost situational awareness in the aerodrome traffic circuit flight.

There were two licensed pilots on board the UR-ISA aircraft. The passenger declared extensive experience in flights on EPBC aerodrome. Flying the aircraft by the pilot-in-command and maintaining communication by the passenger in Polish, which was poorly understood or not understood at all by the pilot, contributed to the loss of situational awareness by the UR-ISA pilot.

In the large traffic circuit of the EPBC aerodrome, the observation of airspace on the downwind leg by a flight coordinator is difficult. Observation of the fourth turn and the final by the flight coordinator is essential for fulfilment of his duties and ensuring the flight safety. PKBWL did not obtain information about any reaction of the flight coordinator to the almost simultaneous reporting of final by the crews of two airplanes.

### 3. CONCLUSIONS

#### 3.1. Findings

- 1) The crews involved in the occurrence were authorized to perform the flights.
- 2) The UR-ISA pilot-in-command did not have confirmed the Polish language proficiency and the communication was maintained by the passenger.

- 3) The crew of the UR-ISA received information about the circuit traffic from the flight coordinator.
- 4) The crew of the UR-ISA maintained a speed greater by 20-30 kt than other aircraft in the circuit.
- 5) Due to specificity of the EPBC aerodrome, the UR-ISA crew was not able to use basic methods to achieve correct separations in the circuit.
- 6) The flight coordinator did not react to the almost simultaneous reporting of the final by the crews of two airplanes.

### 3.2. Cause of the incident

**The cause for overtaking another airplane on the final was probably loss of situational awareness by the UR-ISA pilot in the flight along aerodrome traffic circuit.**

### 3.3. Contributing factors

- 1) UR-ISA speed approximately 20-30 kt higher than the speed of other airplanes in the aerodrome traffic circuit.
- 2) Inappropriate airspace observation by the UR-ISA crew.
- 3) Communication in Polish maintained by the passenger, while the pilot-in-command did not have appropriate proficiency in this language.
- 4) Incorrect monitoring of Babice Radio frequency by the crew of the UR-ISA aircraft.
- 5) Flight coordinator failure to react to almost simultaneous reporting final by the crews of two aircraft.
- 6) The shape of the EPBC aerodrome traffic circuit and the related limitations resulting from the urban character of the aerodrome area.

## 4. SAFETY RECOMMENDATIONS

### **Recommendation No. 1/2021/1141 for "Centrum Usług Logistycznych" Logistics Service Center – operator of the Warsaw-Babice, EPBC aerodrome**

The literal and functional analysis of the flight rules in the area of EPBC aerodrome published by the airport operator in AIP VFR Poland shows that the crews flying in this area are deprived of the possibility of: overtaking of other aircraft on the outer side of the circuit, making circles, and the extension of downwind leg, i.e. the manoeuvres in many cases necessary to achieve separation from other aircraft. Moreover, the same shapes and altitudes of the traffic circuits are designed for different types of aircraft. At the same time, the above limitations and specific solutions are not presented clearly in the AIP VFR. This may lead to different interpretations of these provisions, which creates a hazard to air operations, especially when involving students in solo training flights.

Considering the above, State Commission on Aircraft Accidents Investigation recommends that the EPBC aerodrome operator will introduce to AIP VFR Poland regulations that will clearly indicate which manoeuvres are not allowed in EPBC traffic circuits.

## 5. ANNEXES

None.

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**THE END**

*Investigator-in-Charge*

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*(Signature on original)*