

MINISTRY OF INFRASTRUCTURE

AIR, MARINE AND RAILWAY ACCIDENT AND INCIDENT
INVESTIGATION UNIT

Tržaška cesta 19, 1000 Ljubljana

T: 01 478 81 10

E: mzi.airsafety@gov.si

www.mzi.gov.si



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PRELIMINARY REPORT

ON THE INVESTIGATION OF AN AIRCRAFT ACCIDENT INVOLVING Mooney Ovation2 GX, reg. mark N595RJ, in the area of Velika planina, March 10, 2025

Republic of Slovenia

» 2025 «

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INTRODUCTION

The Preliminary Report on the investigation of the aircraft accident contains the basic factual information related to the occurrence. Depending on the scope of the investigation, all data will be presented in the Final Report, as is customary in investigations concerning civil aviation safety.

In accordance with paragraph 3.1 of chapter 3 of Annex 13 to the Convention on International Civil Aviation (13th edition, July 2024), Article 1 of Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on investigations and prevention of accidents and incidents in civil aviation (OJ L 295, 12.11.2010, p. 35), the fourth paragraph of Article 137 of the Aviation Act (Official Gazette of the Republic of Slovenia, No. 81/10 – official consolidated text, with all subsequent amendments), and Article 2 of the Regulation on the Investigation of Air accidents, Serious Incidents and Incidents (Official Gazette of the Republic of Slovenia, No. 72/03 with amendments), **the purpose of the final report on the investigation of the aircraft accident is not to apportion blame or liability.**

The investigation of the aircraft accident is conducted in accordance with the applicable international and national legislation. A Final Report will be issued presenting the findings regarding the circumstances that led to the accident and the information collected during the investigation.

1 SUMMARY

Date and time of the incident: 10 March 2025, at 09.20 local time
Place of the incident: Velika planina, N 46°18'31.90" E 14°38'7.88"
Type of flight: Private VFR flight (VFR – Visual Flight Rules)
Aircraft:

- **Aircraft manufacturer:** Mooney Aircraft Company, Inc., USA
- **Manufacturer's mark:** M20R Ovation2 GX
- **Aircraft registration:** N595RJ (registered in the United States, FAA registry)¹
- **Aircraft serial number:** 29-0389
- **Airworthiness:** Standard Airworthiness Certificate (FAA)²

Owner/Operator: Private

Crew and passenger information:

- **Crew:** pilot (1)
- **Number of passengers:** 0
- **Total number:** 1

Consequences:

- **Injuries:**

<i>Injuries</i>	<i>Crew</i>	<i>Passengers</i>	<i>Others</i>
Fatal	1	/	/
Major	/	/	/
Minor / None	/	/	

- **Aircraft and equipment:** Destroyed

¹ The FAA Certificate of Registration was issued on 13 August 2020, with a validity period of seven years.

² A Standard Airworthiness Certificate (FAA Form 9100-2) was issued by the Federal Aviation Administration (FAA). The aircraft held a Type Certificate and was certified in the Normal category.

2 FACTS

2.1 Flight Information

Note: The preliminary information presented below is based on data obtained from aviation and other safety services, on-site examination of the accident location, and statements from individuals. All information will be verified during the course of the investigation, which will be concluded with the publication of the Final Report.

The pilot had filed a flight plan with the competent Croatian air traffic control ³unit for a VFR flight, which included passing the VFR waypoints along the route from Zagreb Airport (LDZA) via LJCE – NIPPEL – TOBSO – DORAP, with the intended destination of St. Gallen–Altenrhein Airport (LSZR) in Switzerland. The estimated flight time according to the flight plan was 2 hours 30 minutes.

The aircraft took off from Zagreb Airport at 08:47 local time. Shortly after entering Slovenian airspace, the pilot first established radio contact with Cerklje ob Krki Air Traffic Control. As the aircraft climbed, the flight proceeded in accordance with the flight plan and without any irregularities. Subsequently, the pilot established radio communication with Ljubljana Air Traffic Control. The flight was conducted at an altitude of 9,500 ft. Following instructions from *Ljubljana Radar*, the pilot contacted the FIC⁴ controller on frequency 118.480 MHz at 09:17. In accordance with the flight plan, the controller expected the arrival of aircraft N595RJ:

9:17:22 LT	N595RJ	<i>Ljubljana N595RJ checking in at 118,480</i>
	FISO	<i>N595RJ Ljubljana Information dober dan. QNH 1007</i>
	N595RJ	<i>1007</i>
	FISO	<i>NRJ confirm inbound NIPPEL</i>
	N595RJ	<i>Confirm inbound NIPPEL RJ</i>
	FISO	<i>NRJ and confirm requesting 9.500ft overhead NIPPEL</i>
	N595RJ	<i>I do confirm RJ</i>
	FISO	<i>Roger. Repor 3 minutes before NIPPEL</i>
	N595RJ	<i>Next 3 minutes before NIPPEL RJ</i>
9:18:33	N595RJ	<i>Ljubljana N595R</i>
	FISO	<i>NRJ go ahead</i>
9:19:06	FISO	<i>N595RJ Ljubljana Information...</i>

³ <https://www.crocontrol.hr/>

⁴ Slovenia Control – Ljubljana Information 118.480 MHz – AIP Slovenia, ENR 2 Air Traffic Services Airspace

At 09:18:33, the pilot transmitted on the radio frequency: “Ljubljana N595R...”. No further transmissions were received, and the pilot did not respond to subsequent calls from the controller. Shortly thereafter, the aircraft disappeared from the radar screen.

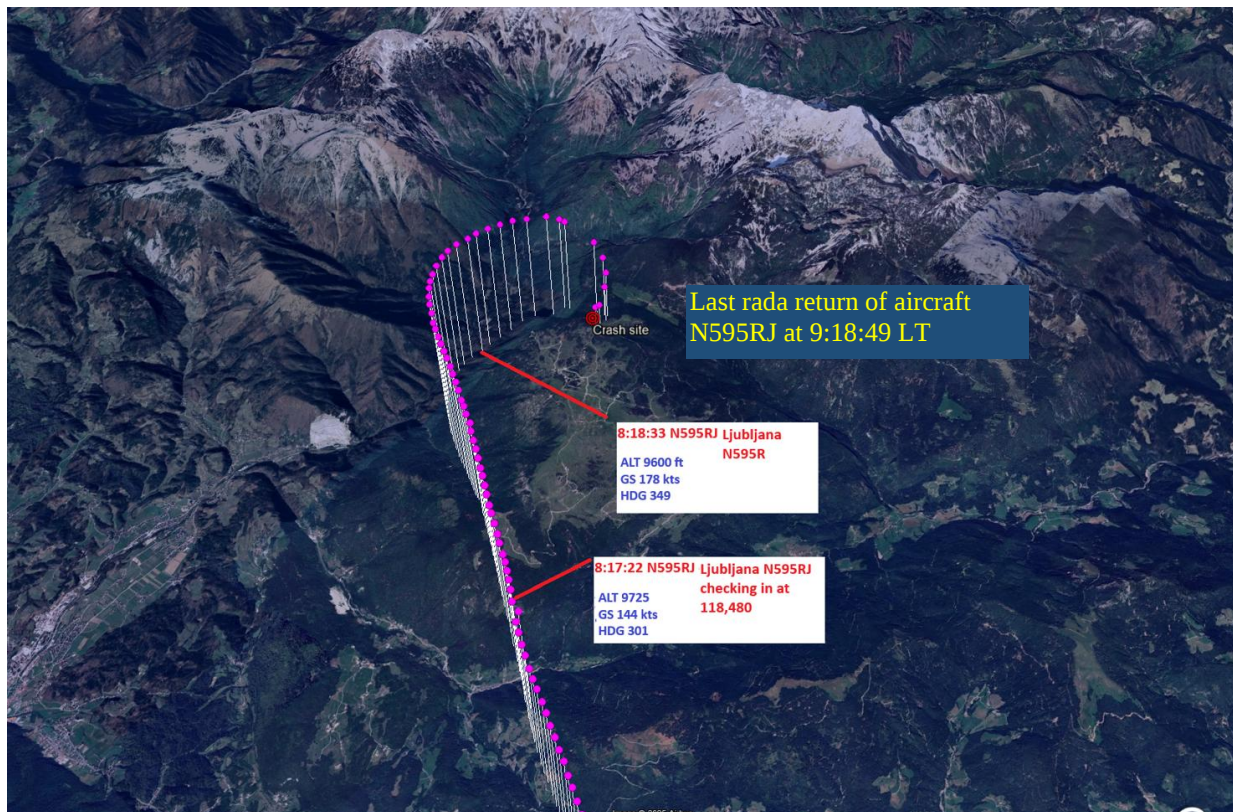


Figure 1: Radar track of the aircraft trajectory in the final minutes before the accident

At 09:31, the Regional Notification Centre (ReCO) informed the investigation authority that, according to information from ATC, a small single-engine aircraft had disappeared from radar in the area of Velika planina, and that, based on its last radar trajectory, an aircraft accident had most likely occurred. ReCO immediately activated the search and rescue operation, involving Mountain Rescue Service Kamnik (GRS Kamnik), firefighters, and the police.

At 12:20, GRS Kamnik reported that the wreckage of the aircraft had been located at a mountain hut in the Velika planina area. The pilot was fatally injured in the crash.

2.2 Pilot Information

The pilot, a 64-year-old Swedish national, held the following valid licences and certificates:

- PPL(A), issued on 4 November 2008.
- SEP (land) class rating, valid until 28 February 2027.
- Medical Certificate, Class 2, valid until 19 April 2025, and LAPL Medical Certificate, issued on 19 April 2024, valid until 19 April 2026, issued by the authorized medical examiner HR.AME.17.

The pilot's total flight time as of the date of the accident was 732 hours and 04 minutes.⁵

2.3 Meteorological data

Data provided by ARSO – Slovenian Environment Agency.

2.3.1 Synoptic situation on 10 March 2025

A low-pressure area was present over Western Europe, with its centre located over the Atlantic Ocean east of Portugal. A weather front was moving across Western Europe and the Mediterranean towards the east.

A cold front passed over Slovenia during the day. Prior to the frontal passage, moist air was advected from the southwest. During the night, the Primorska, Notranjska, and Gorenjska regions experienced cloudy conditions with local precipitation. In the morning, the precipitation intensified and spread across the western half of Slovenia. In the Dolenjska and Štajerska regions, the morning was mostly cloudy and generally dry, with little low cloud present.

2.3.2 Wind and turbulence

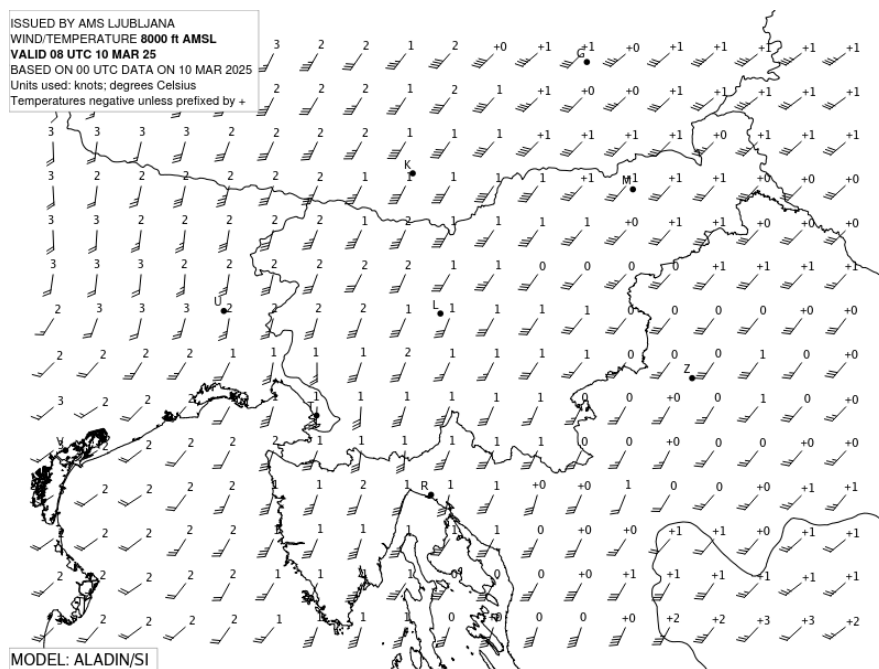


Figure 2: Forecast from the ALADIN meteorological model - wind and temperature at 8,000 ft at 08:00 UTC

⁵ According to the pilot's logbook, the last entry was dated 27 September 2024. The pilot's total flight time as of the date of the accident is still under verification.

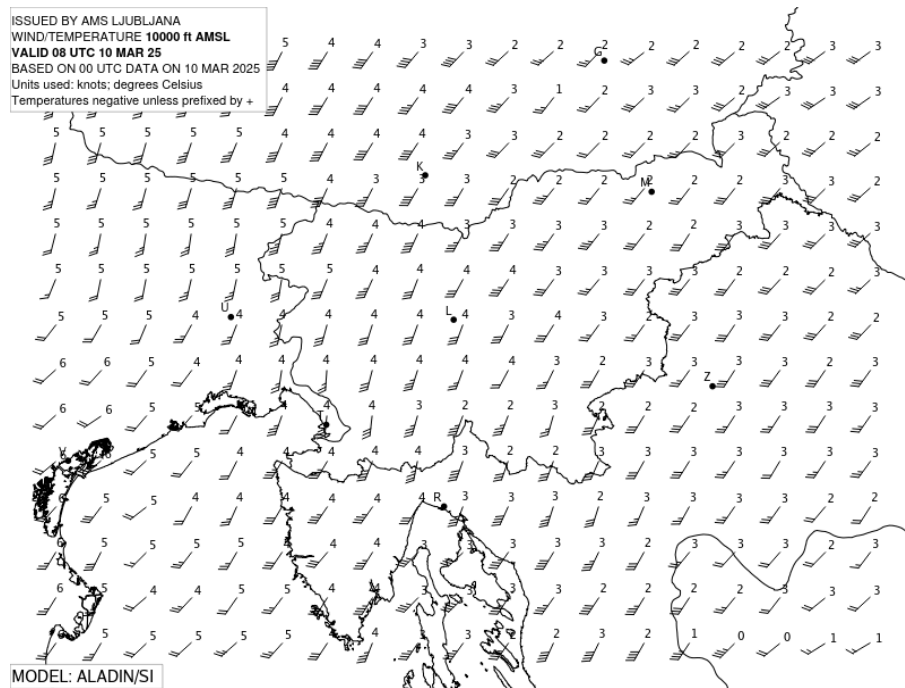


Figure 3: Forecast from the ALADIN meteorological model - wind and temperature at 10,000 ft at 08:00 UTC

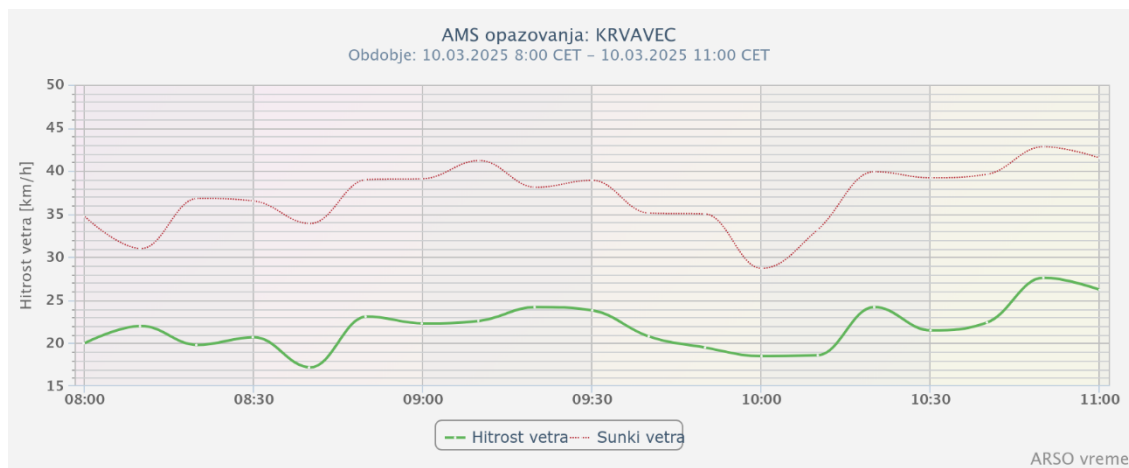


Figure 4: Wind measurements at the Krvavec meteorological station (5,700 ft)

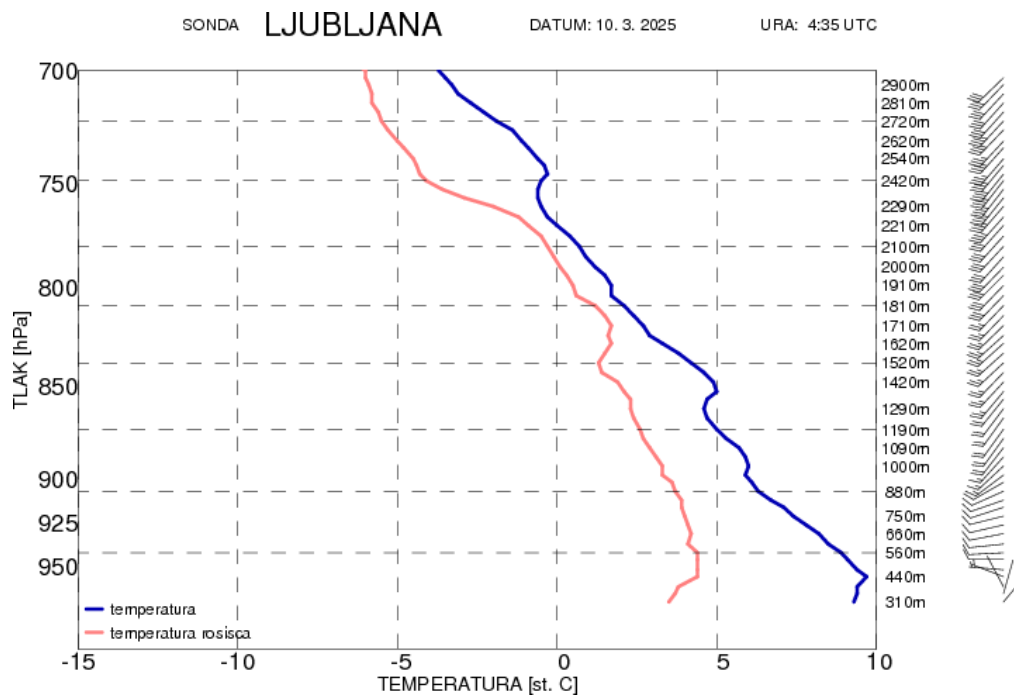


Figure 5: Radiosonde measurement in Ljubljana

According to the ALADIN meteorological model forecast, the wind was blowing from the southwest. The forecast wind speed in the layer between 5,000 ft and 10,000 ft was approximately 30 knots.

The radiosonde measurement from the Ljubljana area confirmed this forecast. The measured wind speed at 5,000 ft was 25 knots, and at 10,000 ft approximately 30 knots. At the Kravavec meteorological station, the measured wind speed was around 20 knots.

At Velika planina, at 08:20 UTC (09:20 local time), the wind was blowing from the southwest. Near the surface, gusts reached approximately 20 knots, and above the terrain around 30 knots. Conditions were favourable for the occurrence of moderate turbulence.

2.3.3 Cloud Cover, Visibility, Weather Phenomena and Icing

In the Primorska, Notranjska and Gorenjska regions, the sky was overcast. The cloud base (ceiling) was between 3,000 and 3,500 ft MSL, and in areas with precipitation between 2,500 and 3,000 ft MSL. The tops of hills and mountains were obscured by clouds and fog. In the Dolenjska and Štajerska regions, the sky was mostly cloudy, with predominantly middle and high-level cloud layers.

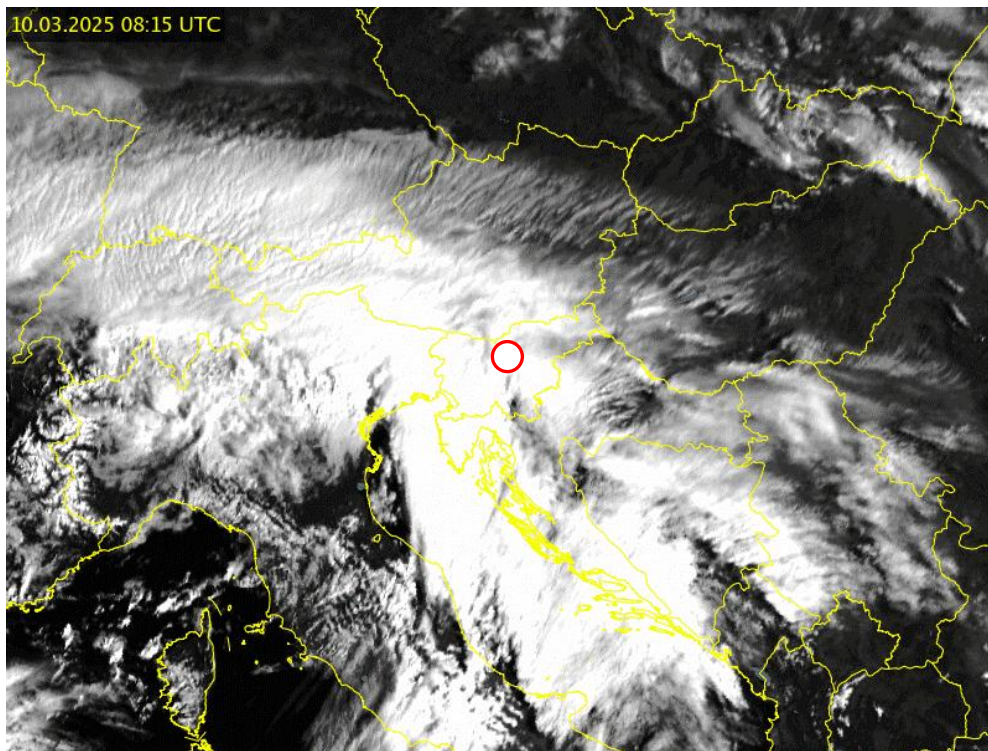


Figure 6: Satellite image - cloud cover in the visible spectrum

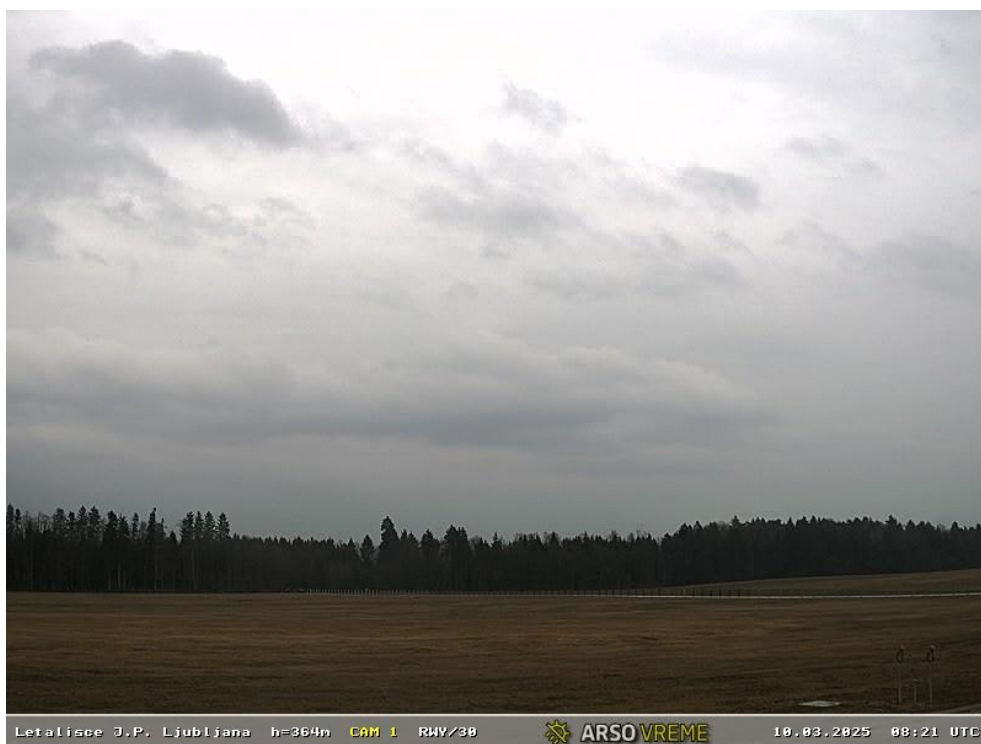


Figure 7: Image from the meteorological camera at Ljubljana Jože Pučnik Airport - northeast direction (towards Velika planina), at 09:21 local time



Figure 8: Image from the meteorological camera (altitude approx. 5,700 ft) at the Krvavec meteorological station - west direction, at 09:20 local time

METAR reports from LJLJ:

METAR LJLJ 100800Z 33004KT 7000 -RA BKN020 OVC032 09/07 Q1007 NOSIG=

METAR LJLJ 100830Z 32007KT 7000 -RA BKN020 OVC032 09/08 Q1007 NOSIG=

Rain was observed in the Primorska, Notranjska, and Gorenjska regions. In the Dolenjska and Štajerska regions, local precipitation was present. In areas with precipitation, surface visibility ranged between 5 and 10 km, while elsewhere it was approximately 20 km.

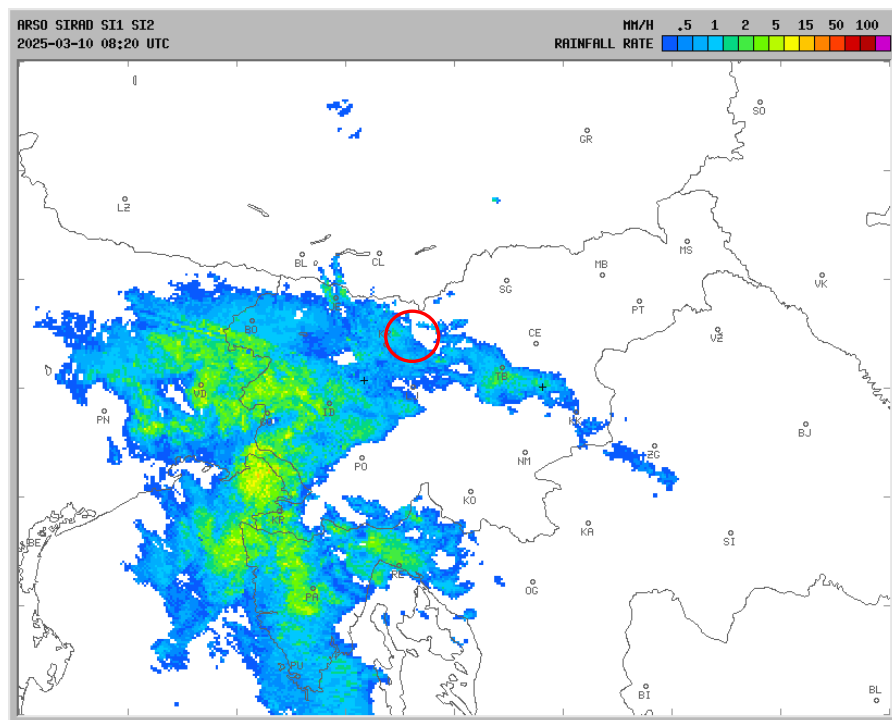


Figure 9: Radar image showing precipitation intensity at 09:20 local time

The freezing level was located at approximately 6,500 ft MSL. Consequently, above this altitude and in areas of precipitation and dense cloud cover, conditions were favourable for the formation of moderate icing.

The Velika planina area was covered by cloud and fog at 09:20 local time. The cloud base was between 2,500 and 3,000 ft MSL, with precipitation present. Above 6,500 ft and up to approximately FL160, conditions were conducive to moderate icing.

2.3.4 Temperature and Humidity

Altitude	Temperature (°C)
2500 ft	4 °C
5000 ft	1 °C
7500 ft	-1 °C
10000 ft	-4 °C

Table 1: Estimated temperature over the Velika planina area at 09:20 local time

The freezing level was located at approximately 6,500 ft MSL. The Velika planina area was within cloud, and consequently, the relative humidity was 100%.

2.3.5 Forecasts and Warnings Issued by the ARSO Meteorological Watch Office

GAFOR Forecast

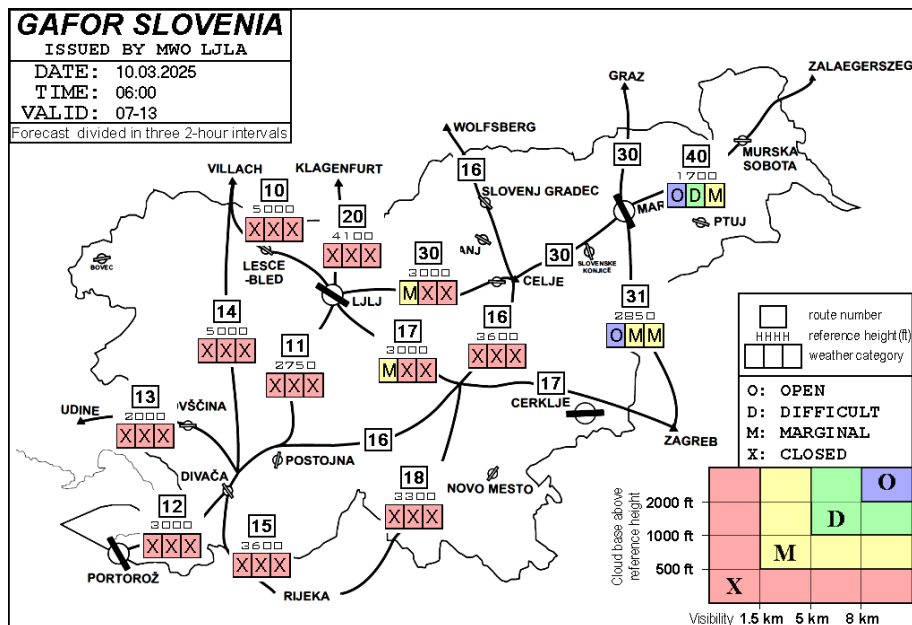


Figure 10: GAFOR forecast issued at 06:00 UTC

The meteorological office issued the GAFOR forecast at 06:00 UTC. For air routes leading from central Slovenia northwards across the mountainous area of northern Slovenia, conditions between 07:00 and 09:00 UTC were forecast to be unsuitable for visual flight (VFR).

Significant Weather Chart – SWL

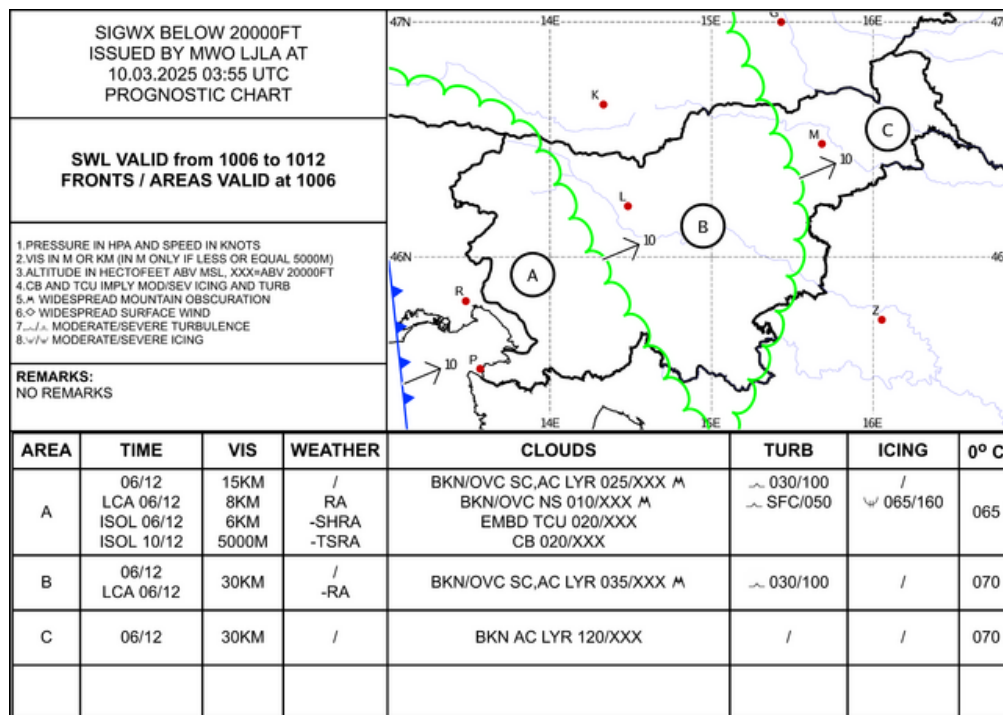


Figure 11: Significant Weather (SWL) forecast, valid from 06:00 to 12:00 UTC

The Significant Weather Chart indicated a cold front already at 06:00 UTC, moving eastward across the region. With the arrival of the cold front, overcast conditions prevailed over the wider Alpine area, with mountain tops obscured, reduced surface visibility, precipitation, occasional thunderstorms, turbulence, and icing.

For the Velika planina area (marked as area B on the SWL chart), the forecast at 06:00 UTC indicated BKN/OVC cloud cover with a cloud base at 3,500 ft MSL, and mountain tops in cloud. Turbulence was forecast between 3,000 ft and FL100. The boundary between areas A and B was moving east-northeast, and by 08:20 UTC, the conditions for the Velika planina area corresponded also to area A, which was associated with lower cloud bases, moderate turbulence, and moderate icing.

Due to the presence of such conditions, an AIRMET warning for turbulence was issued for the period between 08:00 and 10:00 UTC. A previous AIRMET warning for turbulence had been issued for the period between 05:00 and 08:00 UTC.

LJLA AIRMET 5 VALID 100800/101000 LJLJ

LJLA LJUBLJANA FIR MOD TURB FCST WI N4606 E01319 - N4631 E01325 - N4645 E01536 - N4552 E01548 - N4523 E01522 - N4522 E01318 - N4606 E01319 3000FT/FL100 STNR NC=

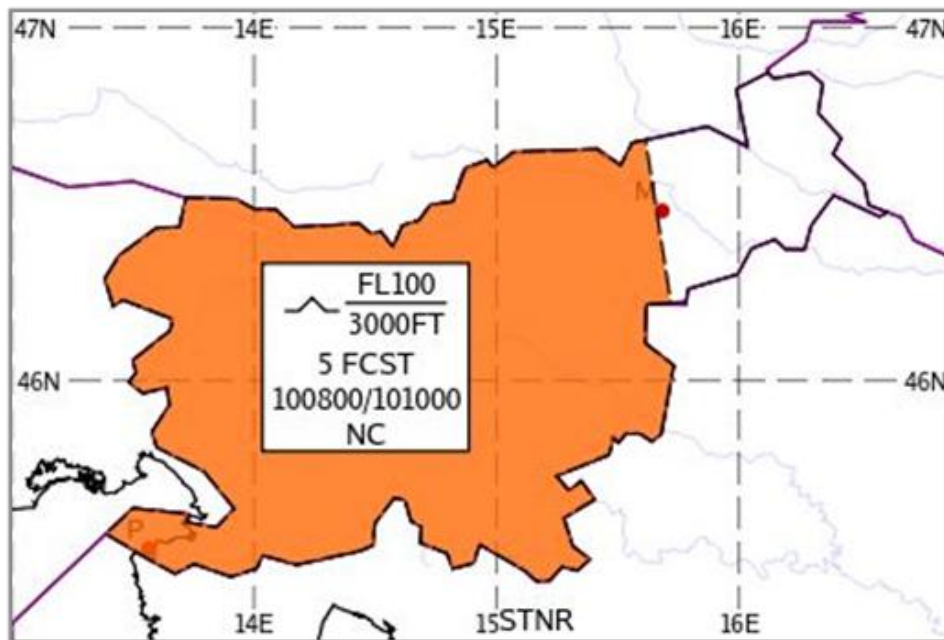


Figure 12: Graphical representation of AIRMET warning for forecast moderate turbulence

At the time of the accident, an AIRMET warning for moderate icing between 6,500 ft and FL160 was also in effect. The warning, issued at 08:00 UTC, covered the western half of Slovenia. The area of moderate icing was moving eastward at a speed of 5 knots. A previous AIRMET warning for icing had been issued for the period between 05:00 and 08:00 UTC.

LJLA AIRMET 6 VALID 100800/101000 LJLJ-

LJLA LJUBLJANA FIR MOD ICE FCST WI N4641 E01442 - N4524 E01452 - N4521 E01322 - N4638 E01316 - N4641 E01442 6500FT/FL160 MOV E 05KT NC=

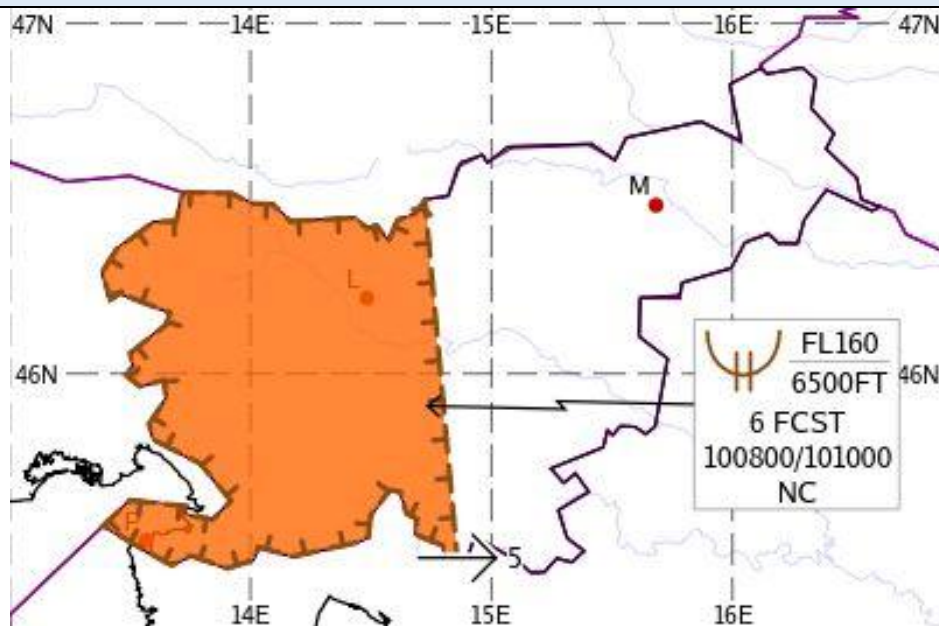


Figure 13: Graphical representation of AIRMET warning for forecast moderate icing

2.3.6 Summary of Meteorological Conditions over the Velika planina Area at 09:20 Local Time, 10 March 2025

- A cold front was moving eastward across Slovenia. Over the wider Alpine region, the weather was overcast (Figure 6), with mountain tops obscured (Figures 7 and 8), reduced visibility, precipitation, occasional thunderstorms, and conditions conducive to turbulence and icing (Figure 11).
- The forecast indicated that VFR flight was not possible along the intended route (Figure 10).
- The actual weather conditions were also unsuitable for VFR flight (Figures 6, 7, 8).
- The wind was blowing from the southwest, with speeds of approximately 20 knots near the surface and 30 knots above terrain (Figures 2, 3, 4, 5).
- Conditions for moderate turbulence were present.
- The cloud base was between 2,500 and 3,000 ft MSL; the Velika planina area was within cloud and fog.
- Precipitation was present.
- The freezing level was at approximately 6,500 ft MSL.
- Above 6,500 ft and up to FL160, conditions were favourable for the formation of moderate icing.

2.4 Communication Information

After leaving Zagreb Air Traffic Control and entering Slovenian airspace, the pilot established radio contact with Cerklje ob Krki Aerodrome Control Service, and subsequently with the Ljubljana Flight Information Service (LJ FIS).

At the time of the occurrence, radio communication with Ljubljana Air Traffic Control (FIS) was established on frequency 118.480 MHz.

During the initial phase of the investigation, recordings of radar returns, as well as recordings of radio and telephone communications, were obtained. The radar data, radar plots, and voice communication recordings are subject to further analysis.

2.5 Investigation Information

The aircraft accident investigation authority was notified of the loss of contact with the aircraft at 09:31 local time by the Republic Notification Centre (ReCO), and subsequently also by the Operational Communication Centre Ljubljana (OKC Ljubljana) and KZPS.

After the location of the crashed aircraft had been determined, the arrival at the accident site was organised in coordination with representatives of the police and the Kamnik Volunteer Fire Brigade (PGD Kamnik). Upon the investigators' arrival, the site had been properly secured.

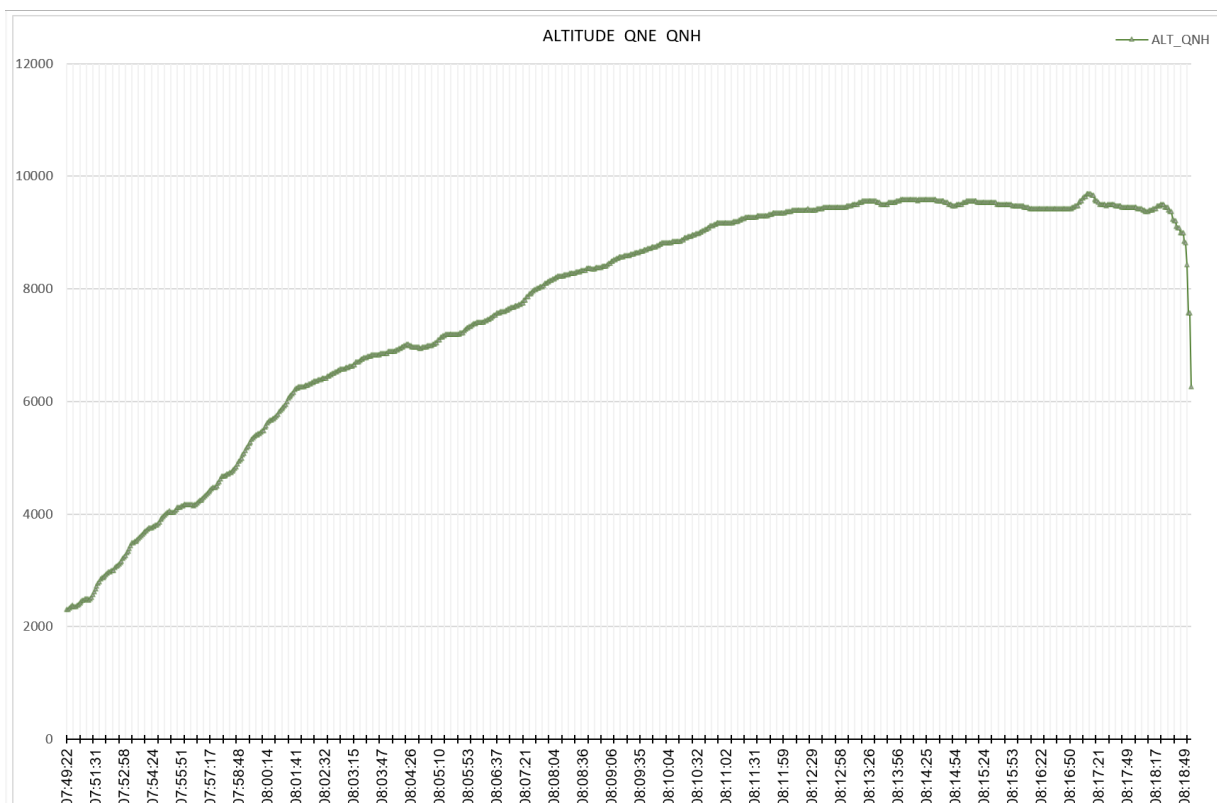
The on-site investigation was carried out over a period of two days, in parallel with the examination conducted by the Criminal Police Directorate of the Ljubljana Police Administration (SKP PU Ljubljana). Upon completion of the on-site work, the remains of the pilot were transported to the Institute of Forensic Medicine in Ljubljana (ISM Ljubljana) for post-mortem examination.

The documents and other materials recovered from the wreckage were transported to the secured facilities of the investigation authority at the Ministry of Infrastructure (MZI) for further analysis.

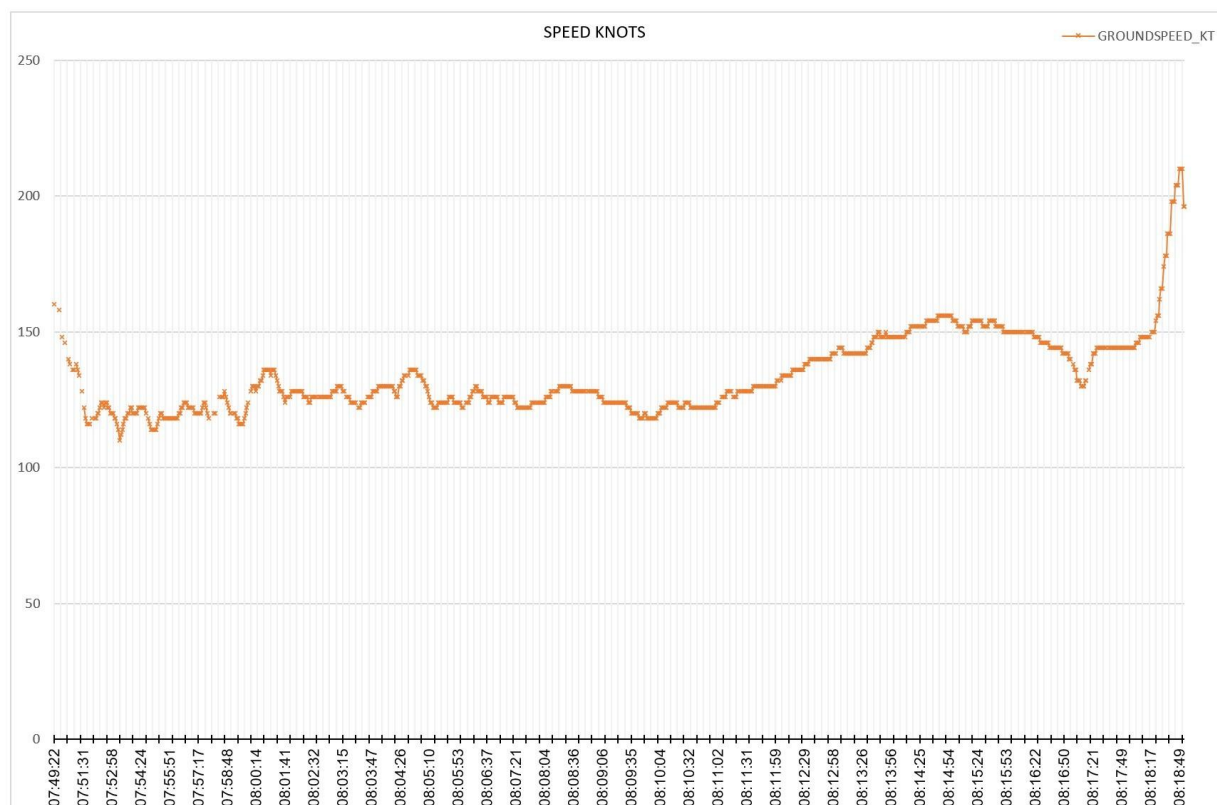
In the initial phase of the investigation, the investigation commission obtained the required data from cooperating investigation authorities — AIN Croatia, NTSB United States, STSB Switzerland — as well as from other aviation and safety authorities both domestic and foreign. The facts and circumstances leading to the accident will be presented in the Final Report upon completion of the investigation.

Toni Stojčevski
Head of Unit
Cheif Investigator

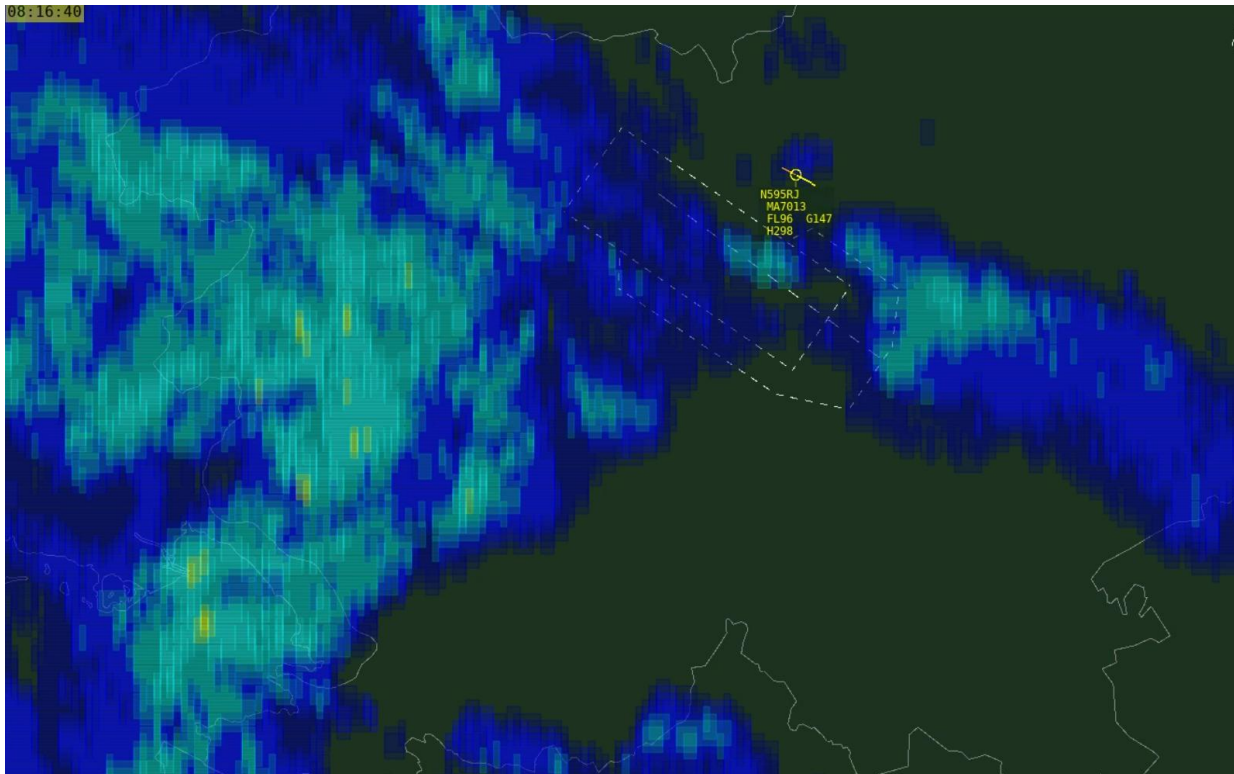
Annexes



Annex 1: Initial data - flight altitude of aircraft N595RJ



Annex 2: Initial data - ground speed of aircraft N595RJ



Annex 3: Initial data - rada image of aircraft N595RJ and precipitation area



Annex 4: Accident site of aircraft N595RJ