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MINISTRY OF INFRASTRUCTURE

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unofficial translation

FINAL REPORT

ON THE ACCIDENT INVESTIGATION

Of the Jonker JS MD-3 Rapture glider,

reg. marks D-KXBL,

in Hudi kot, Ribnica na Pohorju,

February 26, 2022

Republic of Slovenia

» 2022 «

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INTRODUCTION

The final Aircraft Accident Investigation Report contains the facts, analysis, causes, and safety recommendations of the Aircraft Accident Investigation Board based on the circumstances under which the accident occurred.

In accordance with point 3.1, Chapter 3, Annex 13 to the Convention on International Civil Aviation (12th edition, July 2020), Article 1 of 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 (OJ L No 295, 12 November 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, 46/16, 47/19 and 18/23) and Article 2 of the Regulation on the Investigation of Aviation Accidents, Serious Incidents and Incidents (Official Gazette of the Republic of Slovenia, No. 72/03, 110/05 and 53/19), **the purpose of the final report on the investigation of the aircraft accident is not to establish guilt or responsibility.**

The final investigation report must undoubtedly serve the purpose of aviation safety.

It is important that the final investigation report be used to prevent aviation accidents or incidents. Using the final aircraft accident investigation report for other purposes may lead to misinterpretation.

SUMMARY

Date and time of accident: February 26, 2022 at 16:15 p.m. lokal time

Place of the accident: Hudi kot, Ribnica na Pohorju (N 45°58'17.52" / E 14°32'45.09")

Type of flight: private, VFR flight

Aircraft: glider with an auxiliary JET engine

- **Aircraft manufacturer:** M & D Flugzeugbau GmbH & Co. KG,Germany
- **Manufacturer's mark:** JS-MD 3
- **Aircraft registration:** D-KXBL
- **Aircraft serial number:** 3.MD123
- **Year of production:** 2021
- **Airworthiness validity:** 24.11.2022[1]

Owner/operator: private

User: private, Slovenia

Crew and passenger information:

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

Consequences:

Injuries	*Crew*	*Passengers*	*Others*
Fatal	/	/	/
Major	/	/	/
Minor/None	**0/1**	/	

Aircraft and equipment: The tail of the aircraft was broken off, and the fuselage and the wing were damaged.

[1] Airworthiness Review Certificate (ARC) issued by the German aviation authorities. Approval number: T406

1 FACTS

1.1 Flight information

On February 26, 2022, the pilot flew a single-seat glider equipped with an auxiliary jet engine in an aircraft sled from Moškanjci Airport with the aim of maintaining his flight qualifications in the category of flying gliders. Due to the northerly and north-easterly winds, the weather conditions in north-eastern and north-western Slovenia were favourable for sailing that day. After a few hours of sailing in the area of north-western Slovenia and the Carnic Alps in Austria and reaching an altitude of around 3,000 metres, the pilot returned to his home airport on the previously planned route. In the gliding area between Radlje ob Dravi and Ribnica na Pohorju, the pilot assessed that the altitude and weather conditions (without thermal lift or sufficient slope updraft) did not ensure a safe return to the departure airport, so he decided to gain altitude by starting the engine's JET (jet), which did not work after two starting attempts. Then, at approximately 4:15 p.m. local time (LT), the pilot decided to make an emergency landing outside the airport, which is a normal emergency procedure in the glider category. During the landing on the chosen terrain, which was icy and covered with snow, the aircraft skidded, hit the ground, and the tail structure of the aircraft broke. The aircraft skidded across the local road, knocked over a wooden fence, and stopped just short of the building (Figure 1). After landing, the pilot left the aircraft uninjured and called for help.

Figure 1: Landing direction and position of the aircraft at the accident site

1.2 Crew information

The pilot involved in the accident is a Slovenian citizen, 41 years old, and holds a valid gliding licence:

- A valid glider pilot's licence with ratings (take-off in aerofoil, take-off with the help of an auxiliary engine, and take-off with the help of a winch),
- Medical certificate class 2 and LAPL, both valid at the time of the event, until May 30, 2022, issued by the authorised organisation SI-AME No. 18 on June 14, 2019.

The information provided by the pilot shows that he has flown the glider in total:

- Flight time up to the date of the glider crash: 1242 hours
- Flight time in the last 30 days: 3 hours, 40 minutes
- Flight time with the Jonker JS-3 glider up to the day of the crash: 6 hours, 52 minutes
- last flight with the Jonker JS-3: 14 days before the crash

1.3 Aircraft information

Figure 2: Jonker JS-MD 3 glider with auxiliary JET engine

The Jonker JS-MD 3 aircraft is equipped with an auxiliary jet engine and is intended for private use for sport flying and participation in competitions in the glider category.

- **Manufacturer of the aircraft:** M & D Flugzeugbau GmbH & Co. KG, Germany[2]
- **Manufacturer's designation:** JS-MD 3
- **Aircraft registration:** D-KXBL
- **Serial number of the aircraft:** 3.MD123
- **Validity of airworthiness:** 24.11.2022

The JS-MD 3 is (according to MD10-DWL-00-001-R02 or later approved revisions) a jet-powered, self-sufficient, single-seat glider of fully composite construction with a folding jet engine behind the cockpit and a conventional T-tail unit. The main and tail wheels are

[2] https://md-flugzeugbau.de/en/home-en/

retractable. The auxiliary jet engine JS-MD 3 Jet Sustainer System is the propulsion system of a sailplane that is used according to the manufacturer's instructions during flight in a position where weather conditions do not allow altitude maintenance. The engine is used to reach the appropriate altitude for the approach to the destination airport. After reaching the appropriate altitude, the pilot switches off the engine, which is then retracted into the fuselage so that it does not cause any additional drag during the subsequent flight. It is not permitted to use the engine for take-off and landing in accordance with the manufacturer's instructions.

Propulsion is provided by a reaction turbine installed in the upper part of the fuselage behind the cockpit.

The turbine is mounted on a bracket that is automatically pulled out from inside the fuselage when the engine starts. The system is fully retractable and does not interfere with flight in normal sailing mode. When the turbine is retracted, the performance of the aircraft remains unchanged. Operating documents for use, maintenance, and more detailed safety information for safe flying have been published by the manufacturer on their website[3].

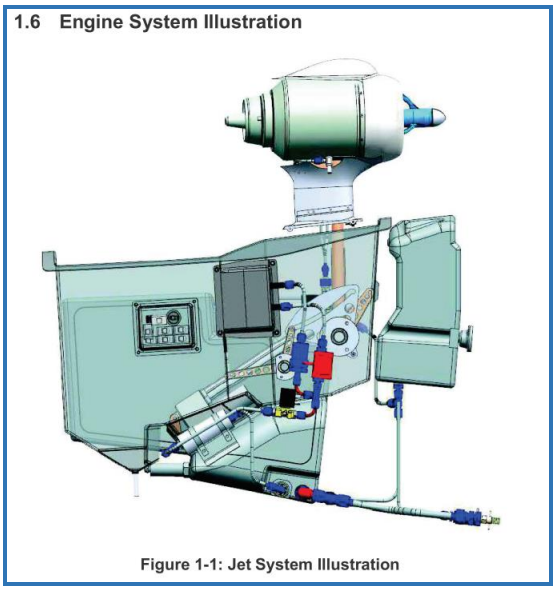


Figure 3: Jet Sustainer System

1.4 Meteorological data

Weather data for February 26, 2022, for the area between Radlje ob Dravi and Ribnica na Pohorju. (meteorological data received from ARSO[4])

1.4.1 Weather situacion

There was an extensive area of high air pressure over central Europe and a cyclone over the southern Adriatic and southern Italy. Slovenia was located at the intersection of the two air systems, which was also the area of air flow (convergence). Due to the rapid drop in temperature with altitude and the influx of moist air from the north-east, snow showers occurred in the Slovenian interior in the afternoon, as shown by the METAR data from Edvard Rusjan

[3] https://md-flugzeugbau.de/en/overview-current-manuals/
https://md-flugzeugbau.de/wpneu/wp-content/uploads/2024/01/MD01-LAM-00-001-R12-List-of-applicable-Manuals.pdf
[4] http://meteo.arso.gov.si/

Maribor Airport. Below 5000 metres, northerly to north-easterly winds prevailed, causing moderate turbulence below FL100.

Near the area between Radlje ob Dravi and Ribnica na Pohorju, there are the automatic weather stations Uršlja gora (1696 m), Šmartno pri Slovenj Gradcu (455 m), Rogla (1495 m), and Zgornja Kapla (722 m) (Figure 1). The nearest airport with METAR data is Edvard Rusjan Airport Maribor. There are also synoptic stations at Edvard Rusjan Maribor Airport and in Slovenj Gradec. Slovenia was located at the intersection of an anticyclone from the north and a cyclone from the south, where there was also a convergence zone. North-easterly winds blew in the lower layers of the atmosphere (below 5000 metres) and caused moderate turbulence. The inflow of moist air, the sharp drop in temperature at altitude, and the vertical mixing of the air due to the turbulence resulted in showers.

1.4.2 Summary of weather conditions

- The wind blew from north to north-east, with an average speed of 6 to 10 knots and gusts of 10 to 28 knots.
- Visibility was over 25 kilometres. With the showers, it dropped below 8 km locally.
- It was mostly cloudy, 3/8 to 5/8 cumulus clouds, with the presence of cumulus congestus (showers) with a base between 4300 ft and 5000 ft above the ground. There were also 4/8 to 6/8 stratocumulus clouds, with a base between 6000 and 7500 feet above the ground.
- The air temperature at an altitude of about 400 m above sea level was 3 °C, at an altitude of about 700 m above sea level 1 °C, at an altitude of about 1500 m above sea level -5 °C, and at an altitude of about 1700 m above sea level -7 °C.
- The relative humidity was 80% at the Šmartno pri Slovenj Gradcu and Zgornja Kapla stations and 95% at the Rogla and Uršlja gora stations.
- The ARSO forecast for sailors at 8:00 a.m. local time was "It will be possible to sail in north-easterly winds."

Weather conditions were forecast and warnings of dangerous phenomena were issued, as shown in the text forecast for aviation, the TAF forecast for Edvard Rusjan Maribor Airport, and AIRMET warnings.

METAR LJMB 261330Z 34012KT 9999 VCSH FEW043TCU SCT053 SCT083 04/M00 Q1027=
METAR LJMB 261400Z 01005KT 300V080 9999 VCSH FEW043TCU FEW053 SCT083 05/M01 Q1027=
TAF LJMB 261100Z 2612/2712 04008KT 9999 FEW033 PROB30 TEMPO 2612/2616 -SHSNRA BKN050TCU=

Figure 4: The red circle shows the wider geographical area of the accident. The blue triangles show the locations of the automatic weather stations around the accident area

1.5 Information on radio communication

At the time of the accident, a radio link was established on the frequency of 118.480 MHz. Before the start of the flight, the pilot checked the operation of the radio station and established radio communication with the ATC controller on the specified frequency during the flight. During the investigation, recordings were made of the pilot's conversation with the responsible ATC.

1.6 The course of the investigation

The aviation investigation authority was informed about the incident at 16:30 by CORS, the local police station, and subsequently by the Celje police department. According to initial information, the chief investigator gave instructions to the pilot involved in the incident, who is also the co-owner of the aircraft, and coordinated with the representatives of the police the joint investigation and inspection, which was carried out the next day at Moškanjci Airport, where the aircraft had been brought in the late evening hours of the accident. Logistical assistance in the inspection of the aircraft was provided in the hangar by members of AC Ptuj.

During the inspection, which began at 10:30 on February 27, 2022, after the aircraft cabin was opened, the investigator examined and documented traces of damaged parts of the aircraft, the operation of the control system, the operation of the radio navigation system and other functions on the control panel in the aircraft cabin, and the operation of the turbine engine. During the inspection, fuel samples were taken from a container from which 5 litres of a 2% diesel fuel mixture had been poured into the aircraft's fuel tank before the flight, as well as a fuel sample from the engine's fuel system, which is driven by an engine pump. Both samples were submitted to the relevant laboratory for analysis. During the visit, the data from the LXnav GPS device was transferred to the data logger.

During the visit, the aircraft documents (airworthiness certificate, entry in the aircraft register, insurance, and documents of the manufacturer and designer of the aircraft) and the pilot's documents (flight records, medical certificate, and pilot's licence) were also seized.

In order to participate in the investigation, we forwarded information about the accident to the investigating authorities of the country in which the aircraft is registered, the country in which it was manufactured, EASA - the European Civil Aviation Agency, and the CAA.

2 ANALYSIS

2.1 Flight analysis

From the analysis of the data obtained from the recording device of the manufacturer LXnav, the trajectory of the flight after departure from Moškanjci airport to the southern crossing of Lienz in Austria and back along the border with the Republic of Austria, part of the flight east of Obertilliach and then towards Slovenj Gradec, at a linear distance of about 500 km in both directions (Figure 5).

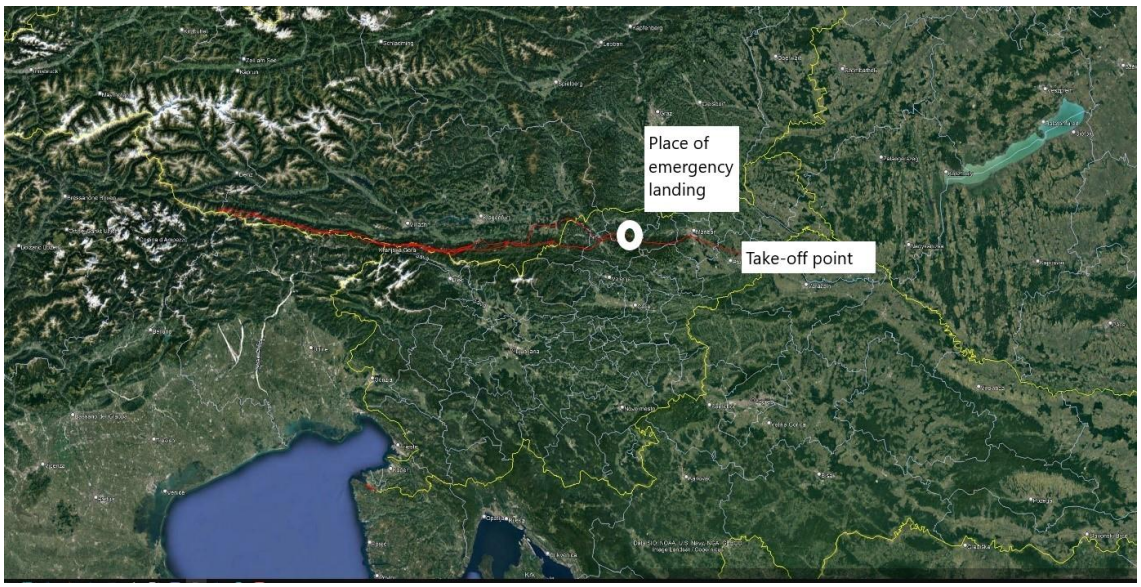


Figure 5: Display of flight route with departure from Moškanjci Airport and return journey

The data from the LXnav recorder also shows that the aircraft continuously lost altitude from 16:02 (Figure 7) until about 16:10, when the altitude over the terrain was so low that the pilot decided to make an off-airport landing or an emergency landing after unsuccessful attempts to start the engine.

The pilot gave a more detailed account of the flight during the investigation. There were rain showers in some areas, which caused him to change his planned route. To avoid snow showers, he stayed in the Karavanke area.

After a ten-minute wait in Karavanke and a look at the radar, I saw that the situation with the showers around Obir was calming down, so I decided to continue the flight eastwards. I made good progress as the northerly wind allowed me to maintain altitude. I wanted to continue

towards Peca, but a snow shower was approaching. So I informed the ATC that I would fly around the north side. I did so and lost quite a lot of altitude (about 1000 metres), so I flew back into Slovenia west of Dravograd and from there towards Slovenj Gradec. I took advantage of the orography, which, together with a moderate northerly wind and some sunshine, enabled me to maintain my altitude (between 1300 and 1400 m QNH). So I flew to the Slovenjgraška basin, which had recently been hit by a snow shower. From here, the weather conditions (visibility, no showers, north wind) were suitable to continue the flight home towards the east. However, as I was flying at an altitude that would not have ensured a sufficiently successful connection to the northern slope of Pohorje, I prepared to start the turbine...

The pilot used the turbine engine for the first time during the flight, as it was not necessary due to the sufficient altitude he had before he came west of Dravograd on the return flight. After avoiding the precipitation areas, he lost about 1000 metres, the altitude at which, in the Commission's opinion, he should have made an immediate decision, namely whether to continue the flight towards the alternate airport, Slovenj Gradec, or to choose a suitable area for a landing outside the airport in case the turbine engine would not work.

2.1.1 Attempt to gain altitude by starting the engine

When the pilot realised that the altitude did not guarantee a safe return to the take-off airport, he decided to start the engine. During the first attempt, the display for engine operation in the cockpit, the JDU (Jet Display Unit), went out. The pilot suspected a battery failure and switched the engine ignition to another (spare) battery. On the second attempt, the engine did not start, and the JDU instrument displayed an error:

Fault description (according to the flight manual): An electromechanical actuator that moves the motor mount because it has not reached the end position within a specified time interval or

Possible cause of the fault (according to the flight manual): Mechanical failure in the area of the jet engine.

Pilot procedure (according to the flight manual): Attempt to retract and extend the engine.

The pilot then made a third attempt to start the engine, but was unsuccessful. An error was displayed on the instrument screen:

Error description (according to the flight manual): The temperature at take-off did not reach the required value. As a result, the take-off was aborted.

Possible cause of the error (according to the flight manual):

- The fuel valve is not open
- no fuel in the tank
- there is no fuel in the fuel system
- the glow plug is not sufficiently heated up

Pilot procedure (according to the flight manual):

- check the fuel valve and the amount of fuel in the tank
- try to restart the engine

After the third failed engine start, the aircraft lost so much altitude that the pilot was forced to land outside the airport.

From the analysis of the operation of the jet engine on the ground carried out the day after the accident, the analysis of the results obtained on the quantity and quality of the fuel, the operation of the two batteries, the analysis of the weather at the time of the incident, the analysis of the conversation with the pilot and the analysis of the instructions from the manufacturer's flight manual, it appears that the failed attempts to start the turbine (jet engine) in the air immediately prior to the accident were most likely the result of flying in low temperatures and exposure to the icing zone, which most likely occurred when flying in zones of increased humidity at temperatures around -10°C. This most likely impaired the ability of the aircraft to operate in the icing zone. This most likely affected the ability of the two batteries to start the turbine and mechanically pull the engine out of the casing, as well as the insufficient heating of the glow plug during takeoff. Prior to the accident, the aircraft was flying at an altitude between 7,000 feet and 4,000 feet between 15:10 and 16:00, when the temperature at these altitudes was between -10°C and -5°C with increased relative humidity (as shown in the data from the automatic stations around the accident area in Table No. 2 and 3 - Figure No. 6).

Temperatura zraka

Iz preglednice 2 je razvidno, da je bila temperatura okoli časa nesreče (med 15 in 17 uro po lokalnem času precej enakomerna in je z višino močno upadala.

Postaja	T (15:00)	T (16:00)	T (17:00)
Uršlja gora (1696 m)	-6,8°C	-6,4°C	-6,8°C
Šmartno pri SG (455 m)	3,5°C	2,5°C	3°C
Rogla (1495 m)	-5,4°C	-5,7°C	-5,7°C
Zgornja Kapla (722 m)	1,1°C	0,7°C	1°C

Preglednica 2. Temperatura na avtomatskih postajah okoli območja nesreče.

Relativna vlaga zraka

Iz preglednice 3 je razvidno, da je bil na območju nesreče v nižjih plasteh prisoten vlažen zrak, na postajama Uršlja gora in Rogla, ki sta višje ležeči, pa je bila relativna vlaga okoli 95%, kar nakazuje, da sta bili postaji v oblakih, kar potrjuje slika kamere na Rogli, slika 12.

Postaja	RH (15:00)	RH (16:00)	RH (17:00)
Uršlja gora (1696 m)	95%	94%	94%
Šmartno pri SG (455 m)	75%	85%	80%
Rogla (1495 m)	95%	95%	95%
Zgornja Kapla (722 m)	75%	84%	72%

Preglednica 3. Relativna vlaga na avtomatskih postajah okoli območja nesreče.

Figure 6: Temperature and relative humidity by altitude at the time of the event

The aircraft manufacturer's flight manual states that when starting the engine in the air, there must be sufficient altitude to allow landing on suitable terrain. It follows that it is not appropriate to start the engine to gain altitude if the aircraft is descending below a sufficient altitude to reach the destination airport. The flying technique and the pilot's decisions regarding the possible

choice of terrain for an off-airport landing remain the same for this aircraft as for a classic glider without an auxiliary engine.

Although a jet engine has very little additional drag when retracted, the pilot must ensure sufficient altitude to land on suitable terrain before attempting to start the engine in flight.

WARNING: Although the Jet Engine adds very little additional drag when extended, the pilot must ensure enough height is available to land on a suitable field before attempting in-flight engine start.

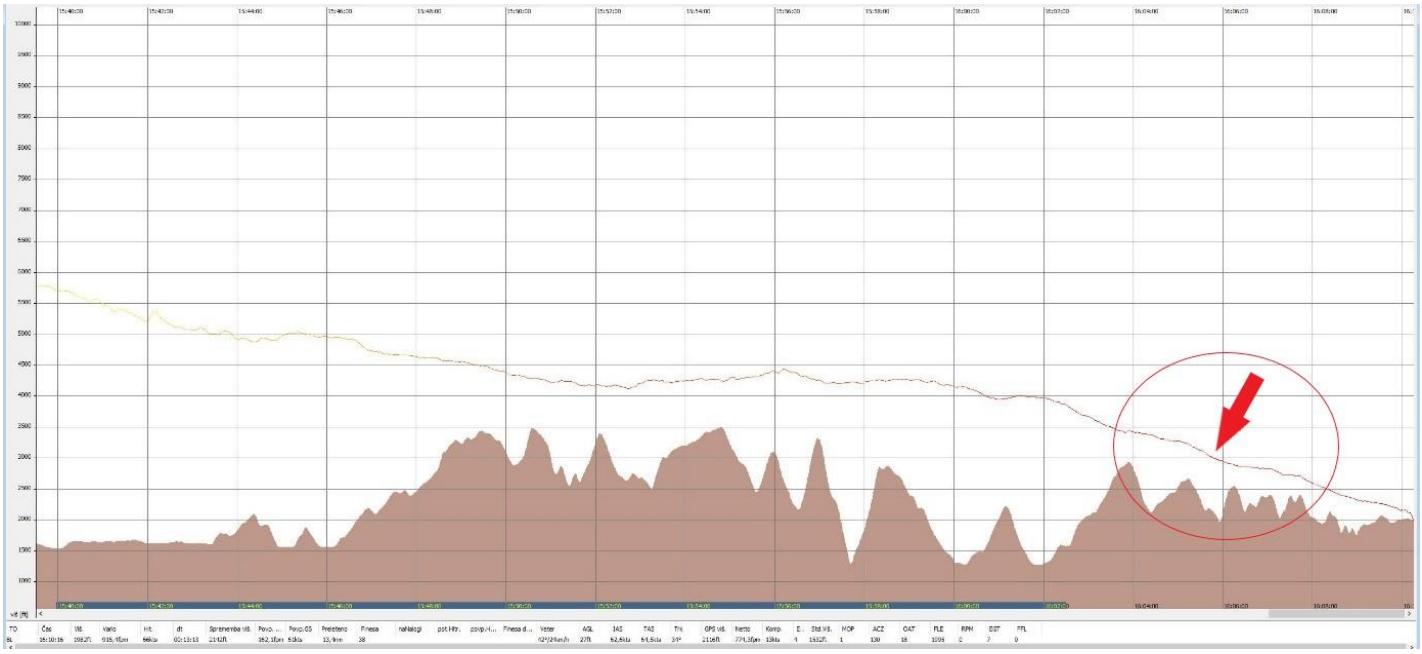


Figure 7: Display of the flight route by time and altitude, depending on the terrain configuration

2.2 Weather analysis

2.2.1 Cloudiness

On the day of the event, it was mostly cloudy, 3/8 to 5/8 cumulus clouds, with the presence of cumulus congestus (showers) with a base between 4300 ft and 5000 ft above the ground. There were also 4/8 to 6/8 stratocumulus clouds with a base between 6000 and 7500 feet above the ground. The extent of the cloud cover is also evident from the METAR data for Edvard Rusjan Maribor Airport, where cumulus congestus and showers are also recorded in the vicinity:

METAR LJMB 261330Z 34012KT 9999 VCSH FEW043TCU SCT053 SCT083 04/M00 Q1027=
METAR LJMB 261400Z 01005KT 300V080 9999 VCSH FEW043TCU FEW053 SCT083 05/M01 Q1027=
METAR LJMB 261430Z 34012KT 9999 VCSH FEW043TCU FEW053 SCT083 04/01 Q1027=
METAR LJMB 261500Z 35009KT 9999 VCSH FEW043TCU FEW053 BKN083 05/M00 Q1027=

METAR LJMB 261530Z 02009KT 330V060 9999 FEW043TCU SCT060 BKN083 06/M03 Q1028=
METAR LJMB 261600Z 04012KT 010V070 9999 FEW043 SCT060 BKN086 05/M04 Q1027=

2.2.2 Precipitation

Due to the rainfall in this area, precipitation was quite locally distributed, which is why it was only measured at two automatic stations, namely in Rogla and Uršlja gora.

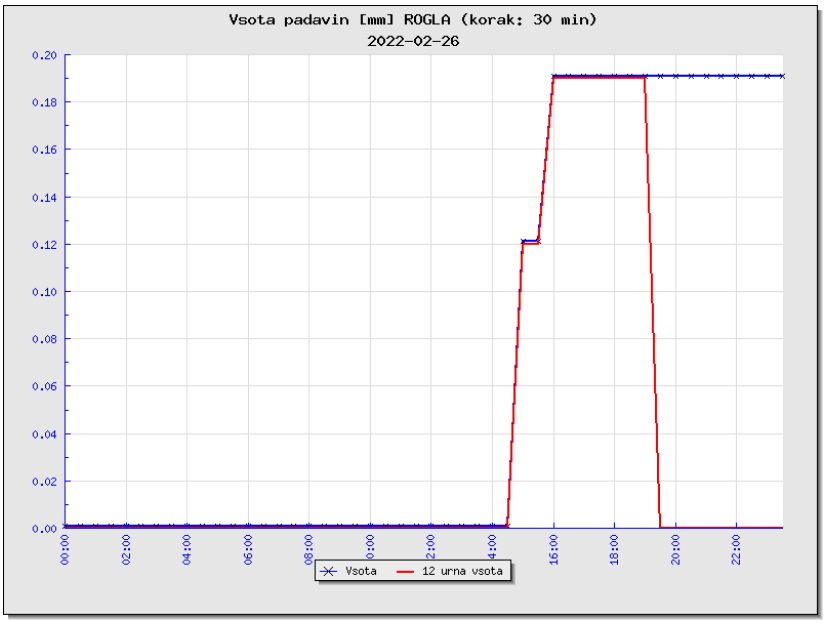


Figure 8: Total rainfall on Rogla

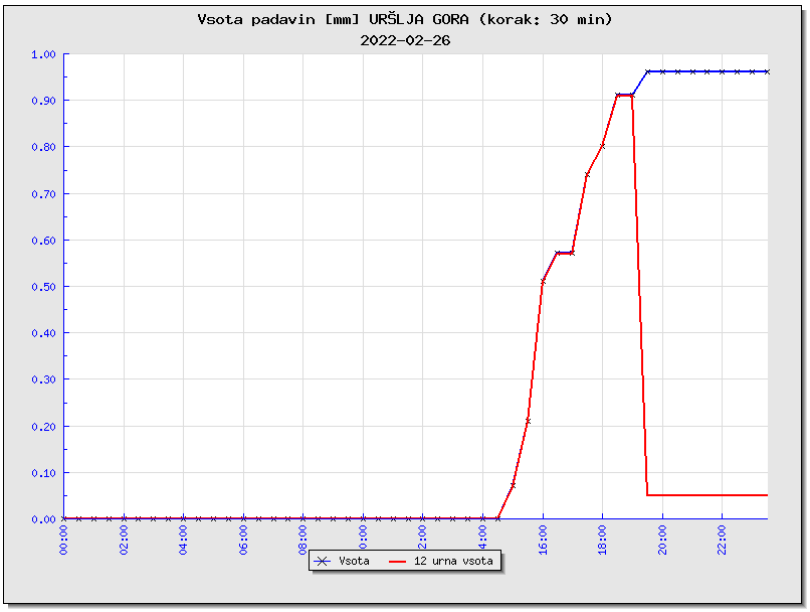


Figure 9: Total precipitation on Uršlja gora

TAF forecast for Edvard Rusjan Maribor Airport

TAF LJMB 261100Z 2612/2712 04008KT 9999 FEW033 PROB30 TEMPO 2612/2616 -SHSNRA BKN050TCU=

The TAF forecast for Edvard Rusjan Maribor Airport indicates that snow showers may occur in the afternoon.

2.2.3 Dangerous meteorological influences

According to modelled forecasts and measurements of wind speed and direction, moderate turbulence occurred between the ground and FL100 between 15:00 and 17:00, for which an AIRMET warning was also issued (Figures 10 and 11). The METAR data from Edvard Rusjan Maribor Airport, the radar images, and the images from the station cameras around the accident area show that cumulus congestus (TCu), which occur during showers, were present. There were no thunderclouds. The icing was limited to the area of the showers, so no special warnings were issued.

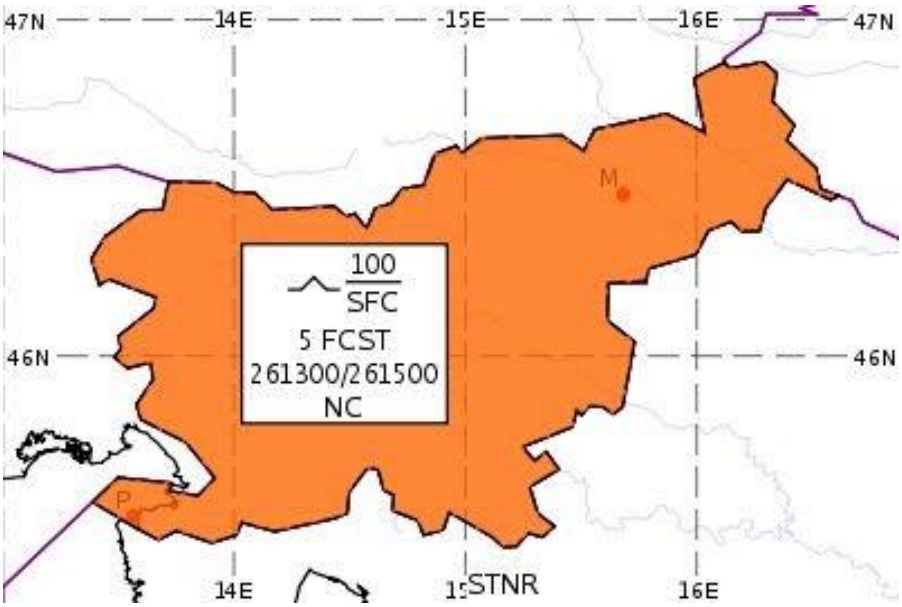


Figure 10: AIRMET Alert - 1

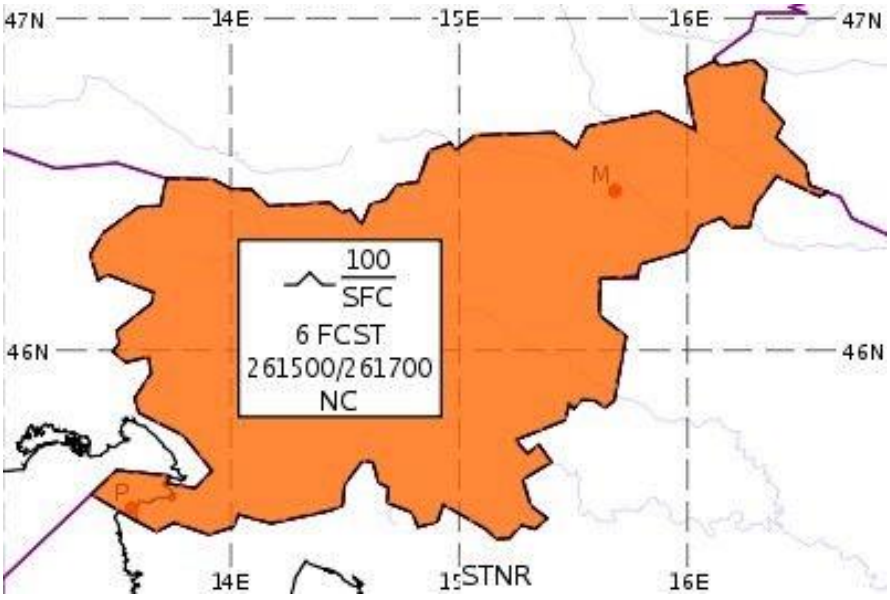


Figure 11: AIRMET Alert - 2

WALJ31 LJLJ 261250
LJLA AIRMET 5 VALID 261300/261500 LJLJ-
LJLA LJUBLJANA FIR MOD TURB FCST ENTIRE FIR SFC/FL100 STNR NC=

WALJ31 LJLJ 261444
LJLA AIRMET 6 VALID 261500/261700 LJLJ-
LJLA LJUBLJANA FIR MOD TURB FCST ENTIRE FIR SFC/FL100 STNR NC=

2.3 Fuel analiysis

For the purpose of analysis, fuel samples were taken from the aircraft the day after the event, namely from the container from which 5 litres of a 2% diesel fuel mixture were poured into the aircraft's fuel tank before the flight, and a fuel sample from the engine's fuel system, which is driven by the engine pump. Both samples were submitted to the relevant laboratory for analysis.

Lastnost	Enota	Preskusna metoda	Datum	Rezultat preskusa	Merilna negotovost	
Destilacija		SIST EN ISO 3405:19				
250°C	% (V/V)		10.03.2022	37,7	2,4	
350°C	% (V/V)		10.03.2022	91,6	2,4	
95 % (V/V)	°C		10.03.2022	366,9	2,6	
Filtrirnost		SIST EN 116:15				
	°C		09.03.2022	-20	2	
Gostota		SIST EN ISO 12185:98				
pri 15°C	kg/m³		09.03.2022	830,4	0,3	
IR spekter		DIN 51451				#
	-		11.03.2022	posnet	-	
Motnišče		SIST EN ISO 3015:19				
	°C		09.03.2022	-7	2	
Videz		PML.07.09:19				
	-		10.03.2022	bister	/	
	-		10.03.2022	rumen	/	
	-		10.03.2022	čist	/	
Vsebnost vode		SIST EN ISO 12937:01				
	mg/kg		10.03.2022	70	20	

Figure 12: Results of the fuel sample analysis

The analysis of the samples of the 2% diesel fuel mixture did not reveal any deviations in the quality or composition of the fuel that could lead to engine failure.

3 CONCLUSIONS

In accordance with the objectives of the investigation with respect to civil aviation safety and the prevention of the recurrence of such accidents and incidents in the future, the findings presented in this report do not constitute a determination of guilt or responsibility. The use of this report for purposes other than improving aviation safety may lead to misinterpretation.

3.1 Immediate cause

- Collision of the aircraft with the terrain during an off-airport landing or an emergency landing.

3.2 Indirect cause

- Recognises the pilot's decision to make an off-airport landing - an emergency landing. The pilot's reliance on the use of a turbojet engine that is not intended to regain the lost altitude necessary to safely continue the flight with the intention of returning to the intended landing site.

4 SAFETY RECOMMENDATIONS

Depending on the circumstances of the event, there are no safety recommendations.

Toni Stojčevski

IIC

ATTACHMENTS

ATTACHMENT 1 – Restrictions on the use a turbine engine in AFM by the manufacturer

(Refer to MD10-AFM-00-002 JS-MD 3 Jet Sustainer Flight Manual, Supplement Section 3)

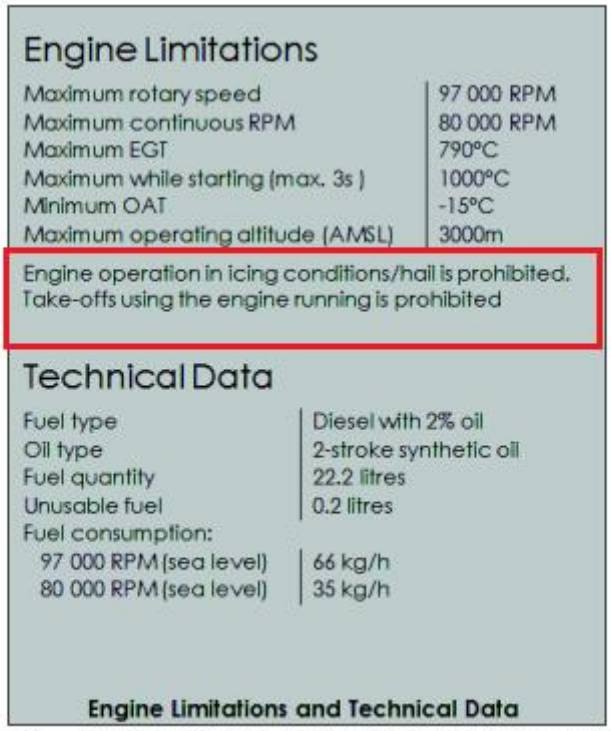
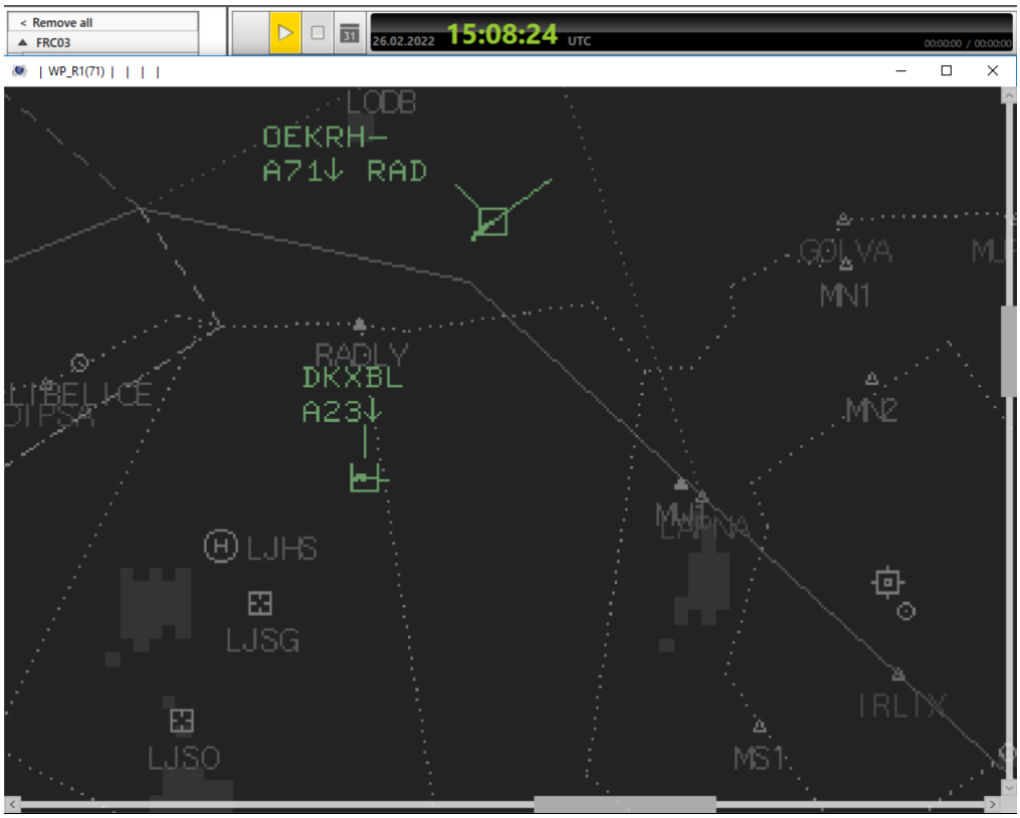


Figure 11-22: Placard Booklet – Engine limitations and Technical data

ATTACHMENT 2 – Plan – flight announcement submitted by the pilot to the competent ATC

FPL:
(FPL-DKXBL-VN
-GLID/L-Y/S
-LJPT1000
-K0040VFR LJPT DCT LJBL DCT LIVD DCT LJMB DCT LJBL DCT LJPT
-LJPT0700 LJMB LJMS
-DOF/220226)
FF LJLAZFZX LJPTZTZX LIPPZFZX LIMMZFZX LIIRZEZX LIMLZPZX
260240 LJLJZPZX
(FPL-DKXBL-VN
-GLID/L-Y/S
-LJPT1000
-K0040VFR LJPT DCT LJBL DCT LIVD DCT LJMB DCT LJBL DCT LJPT
-LJPT0700 LJMB LJMS
-DOF/220226)
FF LJLAZFZX LJPTZTZX LIPPZFZX LIMMZFZX LIIRZEZX LIMLZPZX
261536 LJLJZPZX
(ARR-DKXBL-LJPT1000-LJPT-ZZZZ1515)

ATTACHMENT 3 – Radar image of the last visible position



ATTACHMENT 4 – Off-airport landing maneuver

ATTACHMENT 5 – Information from the manufacturer's manual

Issue 00 of this JS-MD 3 Aircraft Flight Manual is approved under the authority of DOA EASA.21J.603.

Sections 2, 3, 4 and 6 are approved by the EASA through EASA.A.616.

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2.6 Power plant limitations

Parameter	Limitation
Maximum Engine RPM	97 000 RPM
Maximum Continuous RPM	80 000 RPM
Maximum EGT	790 °C
Maximum while Starting (max. 3 s)	1000 °C
Minimum operational outside air temperature	-15 °C
Maximum operating altitude (AMSL)	3000 m (10 000 ft)

Table 2.6-1: Power Plant Limitations