

Final Report

ULM A-020/2018

Accident involving an Aerospool Dynamic WT9 aircraft, registration D-MEFU, in Valdecebro (Teruel, Spain) on 22 November 2018

Please note that this report is not presented in its final layout and therefore it could include minor errors or need type corrections, but not related to its content. The final layout with its NIPO included (Identification Number for Official Publications) will substitute the present report when available.



Foreword

This report is a technical document that reflects the point of view of the Civil Aviation Accident and Incident Investigation Commission (CIAIAC) regarding the circumstances of the accident object of the investigation, and its probable causes and consequences.

In accordance with the provisions in Article 5.4.1 of Annex 13 of the International Civil Aviation Convention; and with articles 5.5 of Regulation (UE) nº 996/2010, of the European Parliament and the Council, of 20 October 2010; Article 15 of Law 21/2003 on Air Safety and articles 1., 4. and 21.2 of Regulation 389/1998, this investigation is exclusively of a technical nature, and its objective is the prevention of future civil aviation accidents and incidents by issuing, if necessary, safety recommendations to prevent from their reoccurrence. The investigation is not pointed to establish blame or liability whatsoever, and it's not prejudging the possible decision taken by the judicial authorities. Therefore, and according to above norms and regulations, the investigation was carried out using procedures not necessarily subject to the guarantees and rights usually used for the evidences in a judicial process.

Consequently, any use of this report for purposes other than that of preventing future accidents may lead to erroneous conclusions or interpretations.

This report was originally issued in Spanish. This English translation is provided for information purposes only.

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ABBREVIATIONS

° ‘ “	Sexagesimal degrees, minutes and seconds
°C	Degrees centigrade
CAVOK	Current visibility, clouds and meteorological conditions better than the prescribed values or conditions
ft	Foot
h	Hour
HP	Horsepower
kg	Kilogram
km	Kilometer
kt	Knot
m	Meter
m ²	Square meter
N	North
rpm	Revolutions per minute
S/N	Serial number
W	West

SYNOPSIS

Owner and Operator:	Unknown
Aircraft:	Aerospool Dynamic WT9, registration D-MEFU
Date and time of accident:	Thursday, 22 November 2018, time unknown
Site of accident:	Valdecebro (Teruel, Spain)
Persons on board:	Unknown
Type of flight:	Unknown
Phase of flight:	Landing
Flight rules:	Unknown
Date of approval:	30 October 2019

Summary of investigation:

On Thursday, 22 November 2018, a passerby found an Aerospool Dynamic WT9 aircraft, registration D-MEFU, charred and without occupants on an old, disused forest landing strip some 2.5 km east of the town of Valdecebro (Teruel).

At one end of this forest landing strip there were two thick, short metal posts joined by a metal cable that prevented vehicles from entering it. The aircraft was entangled in this cable while landing, which broke off its main landing gear.

The aircraft had Czech registration markings (OK-OUU-55), which have been confirmed to be false. It is not known how many occupants were on board, the exact time when the accident occurred or any details of the operation it was engaged in.

The police investigation has determined that the accident aircraft had been stolen in March 2018 from a hangar at the aerodrome of Pohlheim (Germany).

The accident occurred when the aircraft collided with an obstacle at the start of the property where it was preparing to land.

No safety recommendations are issued.

1 FACTUAL INFORMATION

1.1 History of the flight

On Thursday, 22 November 2018, a person walked into to the provincial police office in Teruel who, at 08:30¹, had seen in the vicinity of an old, disused forest landing strip, the burned wreckage of what appeared to be an aircraft. Since there were no emergency services in the area, and the site was not cordoned off, he decided to go to the police station to report the event.

The accident site was on rural land some 2.5 km east of the town of Valdecebro (Teruel, Spain).

The witness stated that the previous day (21 November 2018), he had walked by the same site at around 11:00, and it was empty; as a result, he assumed that the accident could have taken place at night since the wreckage, when he found it, was not smoldering or hot to the touch.

Officers at the station made inquiries to determine if other emergency services were aware of the accident, only to find out that the Teruel police and firefighters did not know anything.

They went to the accident site with the witness and once there, they observed the following:

- They found the wreckage of an aircraft on an old, disused landing strip. It was near one end of the strip. The wreckage was on top of a metal cable that was attached at both ends to metal posts.
- At the end of the strip there were two thick, metal posts (some 80 cm tall) that were anchored vertically to the ground and joined by the metal cable to prevent access to the property.
- One of the two metal posts had been torn from its anchorage.
- The aircraft wreckage, almost completely charred, was near the place where the metal posts were anchored. The registration marking OK-OUU 55 was visible on one wing, and the word “Dynamic” was visible on the vertical stabilizer.



Fig. 1: Photographs of the aircraft after the accident

¹ All times in this report are local unless otherwise indicated.

Both the aircraft wreckage and the surrounding area were searched for clues that could reveal the presence of any casualties, but none were found, nor were any biological remains of the potential occupants. No personal effects were found either.

This initial inspection revealed that the aircraft had tried to land and seconds before touching down, the main landing gear was entangled with the metal cable, causing the accident.

Finally, the relevant safety measures were taken and police cordoned off the area and started making inquiries as to the pilot, potential occupants and the point of departure of the airplane.

1.2 Injuries to persons

Injuries	Crew	Passengers	Total in the aircraft	Others
Fatal	Unknown			
Serious				
Minor				
None				
TOTAL				

1.3 Damage to aircraft

The aircraft was almost completely burned, with the exception of much of its left wing, the rear part of the aircraft and the tail section.

1.4 Other damage

One of the two metal posts that had been vertically anchored to the ground, and was attached to the other with a cable to prevent access to the property, was torn from the ground.

1.5 Personnel information

It is not known who was piloting the aircraft at the time of the aircraft, or if the pilot was accompanied or not.

1.6 Aircraft information

The Aerospool Dynamic WT9 aircraft has two seats, a maximum takeoff weight of 450 kg and one engine. It is a low-wing design with non-retractable landing gear and two fuel tanks, one in each wing.

It was outfitted with a ROTAX 912 ULS engine, with a maximum power of 100 HP (at 5800 rpm), and a three-blade propeller.

Its overall characteristics are as follows:

- Wingspan: 9.00 m
- Length: 6.40 m

- Height: 2.00 m
- Wing surface area: 10.30 m²
- Empty weight: 290 kg

The aircraft was also equipped with a ballistic parachute.

The accident aircraft had been stolen from its usual hangar in Pohlheim (Germany) in March 2018, that is, eight months before the accident.

1.7 Meteorological information

The routine weather reports for Teruel Airport (some 18 km northwest of the accident site) indicated:

- For the evening² of 21 November 2018: winds at 3 to 8 kt from 220°, veering to 120° by the end of the day, temperatures between 3 and 6° C, good visibility and few clouds.
- For the morning³ of 22 November 2018: variable winds at 4 to 7 kt from 120 to 160°, with a practically constant temperature of 3° C and CAVOK conditions.

In the town of Valdecebro, the sun set at 17:43 on 21 November 2018 and rose on the 22nd at 07:58.

There was a full moon on 22 November 2018.

1.8 Aids to navigation

Not applicable.

1.9 Communications

Not applicable.

1.10 Aerodrome information

The aircraft was found on a disused forest landing strip some 2.5 km east of the town of Valdecebro (Teruel, Spain); specifically, at coordinates (WGS-84) N 40° 21' 17.95" - W 01° 0' 42.33" and at an elevation of 1164 m (3819 ft).

The property, used years ago as a landing strip, was on flat and level ground some 500 m long that is currently barren, with small shrubs and bushes typical of the local flora. An inspection of the full length of the strip did not reveal any indications, such as tire tracks, to suggest that it had been used recently by landing or departing aircraft. It is on an approximate heading of southwest-northeast.

² Between 18:00 and 23:59

³ Between 00:00 and 06:00

At what would be the northeast threshold of the runway there were two metal posts anchored to the ground. Hanging from their top ends and connecting the posts was a thick, metal cable, attached to the posts using eyelets. The posts were about 15 m apart, spanning the width of the strip, and were intended to keep vehicles from entering it.



Fig. 2: Aerial image of the property and position and heading of the aircraft on its final approach

1.11 Flight recorders

The aircraft was not outfitted with a flight data recorder or a cockpit voice recorder, and neither was required to be installed on this aircraft type by the applicable regulation.

1.12 Wreckage and impact information

Some 10 m away from the two posts, on the landing strip proper, next to the nearby path, was the aircraft, with part of the propeller and the engine at the boundary between the path and the small mound that serves to separate the two areas, and which stopped the forward motion of the aircraft as it landed. The right wing was angled toward the northeast and the left wing toward the southwest.

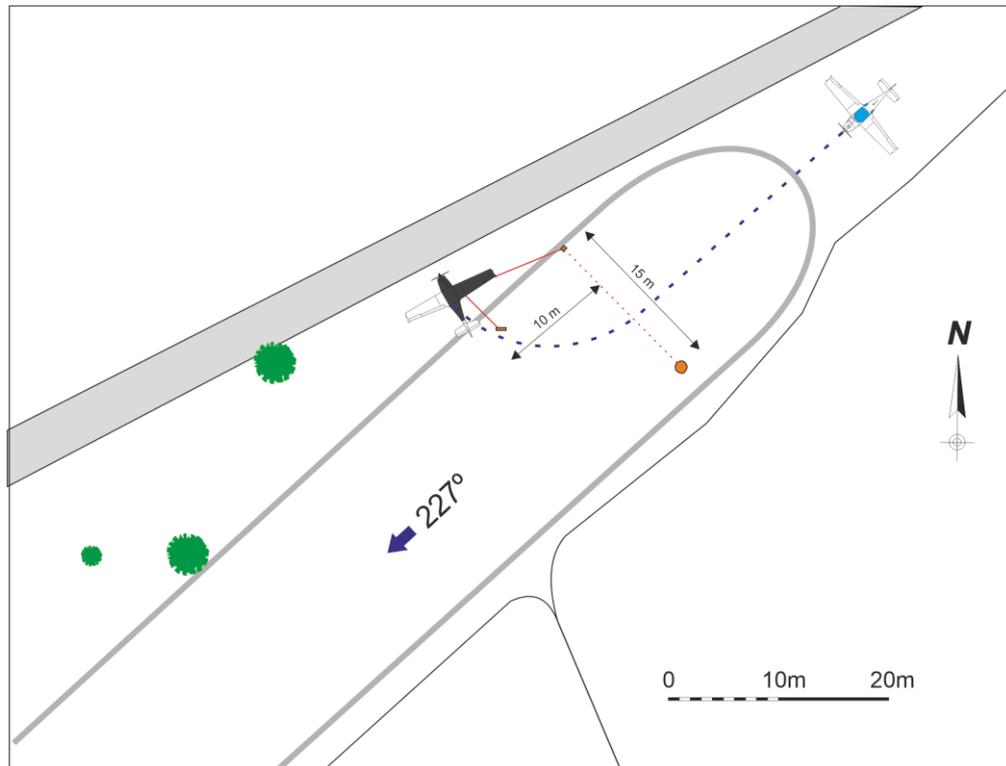


Fig. 3: Diagram showing position of aircraft wreckage

The aircraft's wreckage was not scattered; rather, it was concentrated around the fuselage, with the exception of a burned, cylindrical metal part that was found some 380 m to the northeast of the accident site. This part belongs to the ballistic parachute system, and its distance from the accident site, and the fact that it was burned, is explained by the detonation of the pyrotechnic device, which was caused by the fire once the aircraft was on the ground.

The integrity of the aircraft and the absence of components ejected away from it rule out an explosion.

The impact occurred as the aircraft was landing on a southwesterly course (approximately 227°), when its main gear was entangled in the strong, metal cable that was used to close off the property.

As a result of this contact, the left post (in the forward direction of motion of the aircraft) was ripped out, which caused the aircraft to travel in a semicircular motion, anchored around the fixed right post (which remained in place), before coming to a stop against the small mound that separated the runway from the adjacent path.

The aircraft was almost entirely scorched, save for much of its left wing, the rear section of the fuselage and the tail section.

At the rear of the structure, the horizontal and vertical stabilizers were unaffected, and the word "Dynamic", written in gold letters, was visible on both sides of the vertical stabilizer.

At the rear of the fuselage was a series of letters and numbers corresponding to the aircraft registration. The letters "OK-" were visible on the right side, and "-OUU 55" on the left, which combined, yield the complete registration number, "OK-OUU 55". This was confirmed when the entire registration number was found written on the underside of the left wing in black letters.

The two main landing gear legs were ensnared in the metal cable that closed off access to the strip. Their associated tires had been burned in the fire. The nose gear leg and its tire were not affected by the fire. The metal cable was attached to the two posts.

1.13 Medical and pathological information

Not applicable.

1.14 Fire

A fire broke out after the impact, though investigators could not determine if it was accidental or deliberate. The fire did not affect the surrounding vegetation and went out by itself.

1.15 Survival aspects

The aircraft was in its original shape, with no apparent deformations (beyond the damage caused by the fire).

1.16 Tests and research

The police investigation determined that the registration OK-OUU 55 was associated with an Aerospool Dynamic WT9 aircraft that was registered in the Czech Republic to an individual who was living in Germany.



Fig. 4: Aircraft OK-OUU 55

The German police confirmed that this aircraft was at the aerodrome of Reidelbach (Germany), and also verified that this aircraft looked different from the one found in Valdecebro, both in terms of its color and the shape of the wings (specifically, the accident aircraft had winglets, and the one in Germany does not).

The aviation safety authority in the Czech Republic provided photographs of the original aircraft and the documentation for the aircraft with registration OK-OUU 55.

This all served to confirm that the wreckage did not belong to the original aircraft with registration OK-OUU 55, and that this registration had been illegally copied onto the accident aircraft, whose actual registration was then still unknown.

The serial number on the engine of the accident aircraft was then checked in an effort to ascertain the identity of the wreckage.

At the front of the ROTAX 912 ULS engine there was a nameplate bearing the number 6750056. Both the engine manufacturer and its distributor in Spain reported that this serial number did not correspond to any engine manufactured by ROTAX.

After a thorough cleaning of the oil sump, a subsequent visual inspection of the engine revealed the number 151134 punched into the sump.

ROTAX reported that the sump with S/N 151134 had been installed at the factory on the 912 ULS engine with S/N 6784890, which was delivered on 3 September 2015.

This information allowed investigators to determine that the engine had been installed on an Aerospool Dynamic WT9, registration D-MEFU.

German police, through Europol, reported that this aircraft had been stolen in March 2018 from a hangar at the Pohlheim aerodrome, in Germany.

The photo below shows the winglets, which match those found on the accident aircraft.



Fig. 5: Aircraft D-MEFU

In light of the evidence found, the Judicial Police brigade in Teruel concluded in its report that the accident aircraft may have been used to engage in some kind of illegal act, considering the aircraft had been stolen and its identifying markings had been altered. In addition, the aircraft's occupants had left the accident site and, from an operational point of view, the flight was highly irregular.

1.17 Organizational and management information

Not applicable.

1.18 Additional information

Not applicable.

1.19 Useful or effective investigation techniques

Not applicable.

2 ANALYSIS

The accident aircraft had a fake registration and had been stolen eight months earlier in Germany.

It is not known how many people were on board, or the qualifications (if any) of the person flying it.

The type of operation in question and the exact time of the accident are also unknown. Presumably it would have crashed late on 21 November or early on the 22nd, at a time when there was little natural light, since everything indicates that the pilot was unable to see and avoid the metal cable. Although as concerns the natural light present, it should be noted that there was a full moon and no clouds, meaning the natural lighting conditions were as good as could be expected for a night-time operation. This lends credence to the idea that the accident occurred in the time frame given, as does the fact that by the time the wreckage was found in the morning of the 22nd, it was not smoldering or hot to the touch.

Investigators were also unable to find any eyewitnesses who saw or heard the low-flying aircraft, probably because at that hour, and at that time of year, people are not usually in the field or outside their homes.

The analysis of the location of the aircraft wreckage in relation to that of the metal cable in which it became ensnared indicates that the aircraft was attempting to land and that its total energy when it impacted the cable was very low for two reasons: first, because the aircraft was practically already on the ground; and second, because at that altitude, it would have been logical for it to be flaring at a low speed. In fact, it stopped over a very short distance, with the right wingtip coming to rest some 10 m away from the post that remained in the ground. There was also no significant damage to the aircraft, other than that caused by the fire. The impact with the cable caused the aircraft to yaw some 90° to the right before its motion was fully arrested by the post that remained in the ground.

The possibility that parts detached from the aircraft before the impact is ruled out. The debris was not scattered.

As for the cause of the fire, the possibility exists that the fuel ignited when the aircraft impacted the ground, or that the person or persons on board deliberately set the fire (possibly aided by third parties). The occurrence of an explosion or deflagration is also ruled out, since there was no debris around the aircraft and at different distances.

As concerns the chosen landing site, the strip was not conditioned to act as a runway, and it was blocked by the cable. In no way can the practice of landing on terrain such as this one be deemed orthodox, save for an emergency situation.

3 CONCLUSIONS

3.1 Findings

- The accident aircraft had fake registration markings that belonged to a similar, but not identical, aircraft.
- The serial number on the engine had been altered.
- The number and identity of the individuals on board could not be determined.
- No human biological remains or any personal effects were found at the accident site.
- The accident aircraft, registration D-MEFU, had been stolen in March 2018.
- The aircraft was going to land on a disused forest landing strip when its main landing gear was ensnared in a metal cable, very close to the ground, that restricted vehicular access to the property.
- The aircraft's wreckage was concentrated and only 10 m away from the post that remained anchored to the ground.
- The aircraft retained its integrity until it impacted the cable.

3.2 Causes/Contributing factors

The accident occurred when the aircraft impacted an obstacle at the entrance to the property where it was preparing to land.

4 SAFETY RECOMMENDATIONS

None.