

Technical report

ULM - A-015/2020

Accident on the 13 November 2020 involving an ICP BINGO aircraft, registration EC-EJ8, in the municipality of Turre (Almería).

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Notice

This report is a technical document that reflects the point of view of the Civil Aviation Accident and Incident Investigation Commission regarding the circumstances of the accident object of the investigation, its probable causes and its 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 (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010; Article 15 of Law 21/2003 on Air Safety; and Articles 1, 4 and 21.2 of RD 389/1998, this investigation is exclusively of a technical nature, and its objective is the prevention of future aviation accidents and incidents by issuing, if necessary, safety recommendations to prevent their recurrence. The investigation is not intended to attribute any blame or liability, nor to prejudge any decisions that may be taken by the judicial authorities. Therefore, and according to the laws detailed above, the investigation was carried out using procedures not necessarily subject to the guarantees and rights by which evidence should be governed in a judicial process.

Consequently, the use of this report for any purpose other than the prevention of future accidents may lead to erroneous conclusions or interpretations.

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Abbreviations

°	Sexagesimal degree
°C	Degrees Celsius
%	Per cent
AEMET	Spain's State Meteorological Agency
AESA	Spain's National Aviation Safety Agency
CV	Metric horsepower
DGAC	Civil Aviation General Directorate
ft	Feet(s)
h	Hours
hPa	Hectopascal
kg	Kilogrammes
km	Kilometres
km/h	Kilometres per hour
kt	Knots
LT	Local Time
m	Metres
MAF	Multi-axis fixed-wing
min	Minutes
METAR	Meteorological Aerodrome Report
QNH	Altimeter setting to obtain elevation above sea level when on the ground
TULM	Ultralight Aircraft Pilot License
ULM	Motorised ultralight aircraft
UTC	Coordinated Universal Time
VFR	Visual Flight Rules

Synopsis

Operator:	Private
Aircraft:	ICP BINGO, EC-EJ8
Date and time of accident:	13/November/2020, 17:15 LT ¹
Site of accident:	Municipality of Turre (Almería)
Persons on board:	1, unharmed
Type of flight:	General Aviation - Private
Flight rules:	VFR
Phase of flight:	En route - cruising

Date of approval: **28/04/2021**

Summary of incident:

On Friday, 13 November 2020, the ICP BINGO aircraft, registration EC-EJ8, suffered an accident while making an emergency landing on an abandoned runway in the municipality of Turre (Almería).

The aircraft had taken off from Totana Aerodrome (Murcia) to carry out a local round-trip flight with only the pilot on board. During the return leg back to the aerodrome, the pilot noticed a loss of engine power and decided to make an emergency landing.

After landing, the aircraft's right wing hit some vegetation, causing it to pivot 180° on that wing. It came to a halt with a broken nose leg.

The pilot was uninjured, but the aircraft sustained significant damage.

The investigation has determined the cause of the accident was the performance of an emergency landing on an unmaintained airfield due to an in-flight engine power loss as a result of insufficient fuel supply.

¹ Unless specified otherwise, all times in this report are local. On the day of the accident, local time was equivalent to UTC+1 hours.

1. FACTUAL INFORMATION

1.1. History of the flight

On Friday, 13 November 2020, the ICP BINGO aircraft, registration EC-EJ8, had taken off from Totana Aerodrome (Murcia), intending to carry out a local round-trip flight to Vera (Almería) with only the pilot on board.

Since the current owners purchased the aircraft, it had made approximately 12 flights, during one of which, with the other co-owner as the pilot, it suffered a loss of power caused by a malfunction in one of the carburettors.

According to the pilot, his intention was to accrue flight hours and practice piloting the aircraft.

The first approximately 45 minutes of the flight passed without incident. When the aircraft was flying to the south of the Vera area, the pilot decided to return to Totana Aerodrome.

On the way back, the pilot noticed a loss of engine power and immediately decided to make an emergency landing on a disused runway at the abandoned Cortijo Grande Aerodrome, which he had spotted moments before.

Just as he was making contact with the ground, he noticed the presence of abundant vegetation. The right wing hit this vegetation and the aircraft pivoted on it, making a 180° turn and then stopping.

The pilot was uninjured, but the aircraft sustained significant damage.

1.2. Injuries to persons

<i>Injuries</i>	<i>Crew</i>	<i>Passengers</i>	<i>Total in the aircraft</i>	<i>Others</i>
Fatalities				
Serious				
Minor				
None	1		1	
TOTAL	1		1	

1.3. Damage to the aircraft

The aircraft sustained significant damage to the nose leg, the left horizontal stabiliser on the tail assembly, the leading edge of the right wing and the tips of both wings. Two of the propeller ends were also damaged.

1.4. Other damage

N/A.

1.5. Personnel information

1.5.1. Information about the crew of aircraft

The 33-year-old pilot had an ultralight pilot license (TULM) with a multi-axis fixed-wing rating (MAF), issued by Spain's National Aviation Safety Agency (AESA) on 06 May 2020 and valid until 28 February 2022. He also had a class 2 medical certificate, valid until 02 December 2023.

Since obtaining his license, the pilot had carried out two flights in July 2020 and the flight under investigation in this report. His total hours of flight experience, including the accident flight, amounted to 02:55 h, all of which were in the same type of aircraft.

1.6. Aircraft information

1.6.1. General information

The aircraft was an ICP BINGO motorised ultralight aircraft (ULM) with a maximum take-off weight of 450 kg. The serial number of the aircraft involved in the accident is 05-06-52-183. It was registered on 18 July 2005. It has a 60 CV HKS 700E engine and a three-bladed DUC propeller.

It had a restricted Airworthiness Certificate issued on 02 September 2005 by the Civil Aviation General Directorate (DGAC).

As stated in the aircraft's purchase documentation, it was acquired by the current owners on 18 June 2020 with 693 h 10 min of flight.

It has only one maintenance intervention documented, consisting of an engine overhaul following a power loss on 08 September 2020. During this overhaul, the carburettors were cleaned and adjusted, and the diaphragm, o ring seal and needle clamp in no. 2 were changed.

According to information provided by the pilot and co-owner of the aircraft, since its purchase, no other maintenance has been carried out on the aircraft.

Considering the flight hours accrued by the pilots, we can estimate that on the date of the accident, the aircraft had a total of 706 flight hours.

1.7. Meteorological information

According to the information provided by the State Meteorological Agency (AEMET), the meteorological conditions in the area at the time of the accident were scattered clouds, high humidity, good visibility and light winds (slightly stronger on the east coast and at higher altitudes inland) from the south.

Neither the remote sensing images nor the forecasts suggest any indications of significant weather phenomena.

AEMET does not have a meteorological station at the Cortijo Grande Aerodrome; the closest stations are in Garrucha (11 km to the northeast), Albox (34 km to the northwest) and Huerca-Overa (approximately 30 km to the north).

The data recorded at these stations was as follows:

Garrucha: Temperature 19 °C, relative humidity 87 %.

Average wind speed 21 km/h from the southeast, maximum 23 km/h from the southeast.

Albox: Temperature 18 °C, relative humidity 72 %.

Average wind speed 13 km/h from the east, maximum 21 km/h from the east.

Huerca-Overa: Temperature 17 °C, relative humidity 71 %.

Average wind speed 12 km/h from the southwest, maximum 20 km/h from the south.

The closest airport is Almería (located approximately 50 km to the southwest).

The aerodrome reports (METAR) from Almería Airport around the time of the accident showed wind speeds of 3-4 kt from the south-southwest, visibility in excess of 10,000 m, scattered clouds at 4,000 ft, a temperature of 20 °C, dew point 15 °C and QNH 1020 hPa.

METAR LEAM 131600Z 22004KT 190V250 9999 FEW040 20/15 Q1020=

METAR LEAM 131630Z 23003KT 9999 FEW040 19/15 Q1020=

1.8. Aids to navigation

N/A.

1.9. Communications

N/A

1.10. Aerodrome information

Totana Aerodrome is a restricted-use aerodrome located in the municipality of Totana, in the province of Murcia.

It has a fully paved 450 m-long by 15 m-wide runway designated 03-21.

Its elevation is 656 ft.

Cortijo Grande Aerodrome is located in the municipality of Turre (Almería). It has a paved 690 m-long by 15 m-wide runway designated 05/23. Its elevation is 495 ft.

The aerodrome is abandoned, and its runway is in disuse. Its surface area has several irregularities along its length in addition to abundant low scrub vegetation on the right side of the last 380 m section of runway 05.

The distance between the two aerodromes is 81 km.

1.11. Flight recorders

N/A

1.12. Aircraft wreckage and impact information

The aircraft made an emergency landing on the last section of runway 05 at an abandoned aerodrome located in Paraje de Cortijo Grande in Turre (Almería).

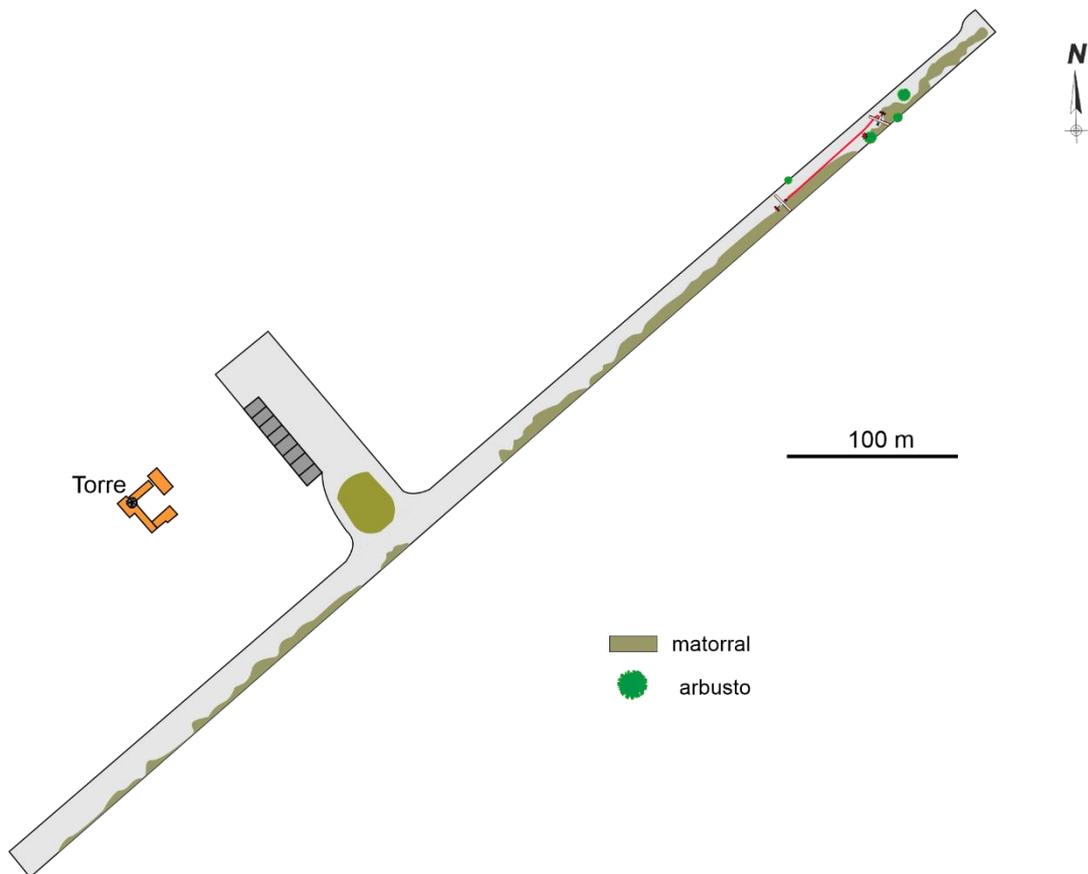


Fig. No. 1.- Diagram of the runway and location of the aircraft

The aircraft stopped between some bushes to the right-hand side of the end of the runway, facing in the opposite direction to which it landed.

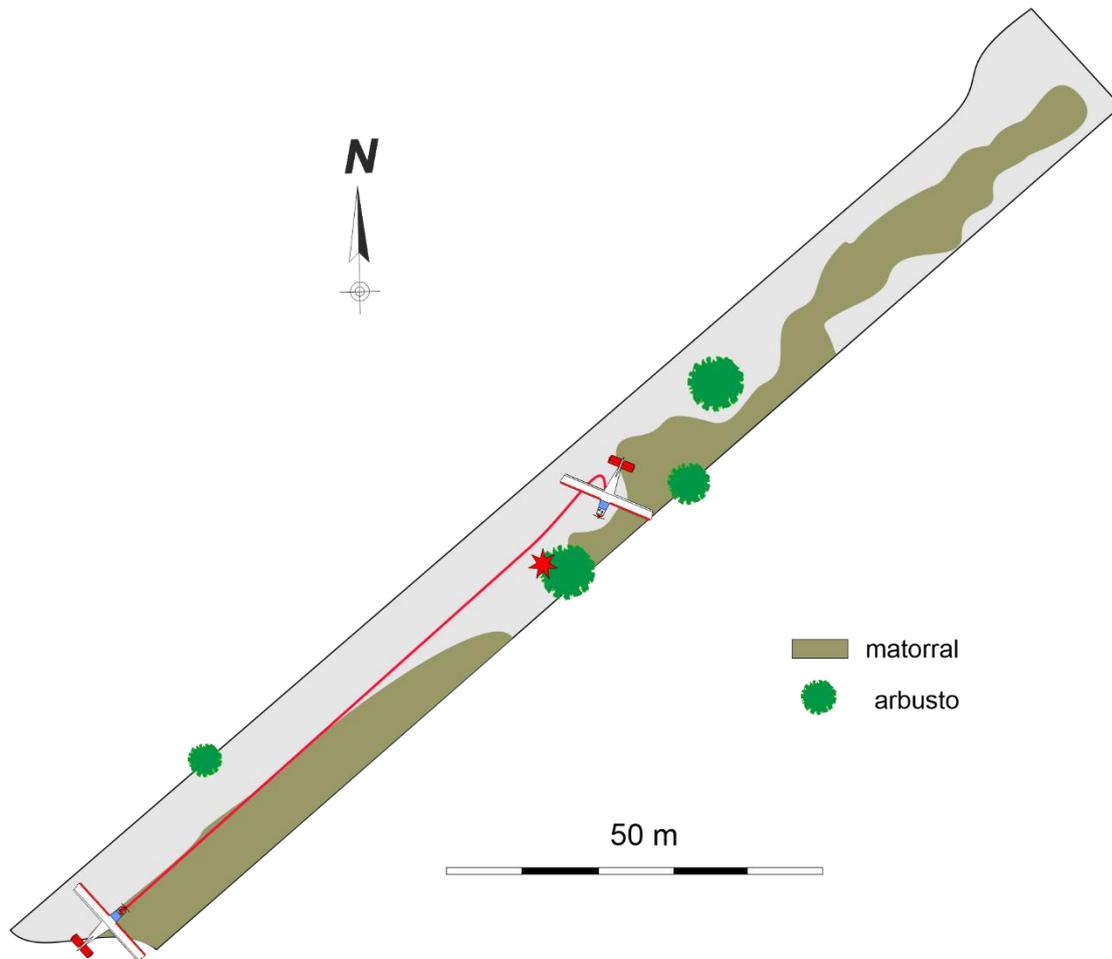


Fig. no. 2 - Detail of the emergency landing area

Some of the vegetation on the right side of the section prior to where the aircraft stopped was crushed, which is consistent with the aircraft's wheels having rolled over it.

Except for the nose wheel, which had detached and was found 3 m away, the aircraft was intact.

As a consequence of impacting the vegetation, the aircraft sustained significant damage to its nose leg, right wing (particularly its leading edge), left wingtip, and the horizontal stabiliser on the tail assembly. Creases and fractures were also observed on the engine fairing and doors. The tips of two of the propeller blades were damaged.



Fig. no. 3 - Frontal view of the aircraft's condition

1.13. Medical and pathological information

N/A.

1.14. Fire

There was no fire.

1.15. Survival aspects

The cabin maintained its structural integrity, and the harnesses functioned adequately.

1.16. Tests and research

1.16.1. Interview with the pilot

The pilot of the aircraft has provided an account of the event:

"... I was flying the Bingo when I realised that I lacked power and the revolutions had dropped by half. So, I look around and see a straight line, and given that I thought I had enough height, I decided to aim for it to make an emergency landing.

After lining up with the runway, I noticed that I suddenly had power again.

Just as I'm touching down, I notice the presence of numerous tall bushes on the runway. As I had retrieved power, I tried to take off again to avoid hitting them with the wings, but it was too late. The right wing hit the bushes, causing the aircraft to turn 180° sharply to the right to face back the way it had come.

After the aircraft stopped, I shut off the fuel valve and turned off the engine. Once outside, I saw the front wheel of the nose leg had come off and the right wing was damaged along its entire length as a result of hitting the bushes.

The incident was very minor".

When asked specifically, the pilot indicated that *"he had not flown through the area before"* and that *"he was not aware of the existence of the abandoned runway"*; he had spotted it moments before deciding to return to the aerodrome.

In addition, he pointed out that, although he had fully recovered power, he thought that *"it was more prudent to land because the runway offered a good surface to do so and he no longer trusted the aircraft"*. His decision was also influenced by the problem the engine had suffered two months previously and by the fact that *"he felt indecisive and nervous"* about the situation.

He added that on landing his speed was 70 km/h, as appropriate, and that he landed with full flaps.

1.16.2. Engine inspection

A post-accident inspection of the aircraft's engine and fuel system was carried out.

A lack of general maintenance was observed in the aircraft, such as the existence of expired and cracked fuel lines. This circumstance could have caused the fuel pump to ingest air and lose pressure, causing a temporary loss of power.

1.17. Organisational and management information

N/A

1.18. Additional information

According to the information provided in its manual, the aircraft is capable of landing on 40 m of runway with full flaps, and its landing speed is 70 km/h.

1.19. Useful or effective investigation techniques

N/A.

2. ANALYSIS

2.1 General aspects

The pilot held the required license and relevant medical certificates for the flight.

The aircraft had the necessary documentation for the flight.

2.2 Of the weather conditions

The data recorded at different meteorological stations in the area confirms non-limiting meteorological conditions for the flight.

2.3 Of the operation

The inspection carried out on the engine and fuel system determined that the deteriorated condition of some of the elements could have allowed air into the fuel circuit, resulting in a loss of pressure and power.

Of the 690 m of runway, the last 380 m had low vegetation on the right side, reducing the available width without actually preventing an aircraft from taxiing on it, except for the last 90 m, where the extent of the vegetation, both in terms of its height and density, made that section completely unusable. Therefore, it can be stated that, while not in good condition, 600 m of the runway was usable and available to make a safe landing.

Considering that, depending on the characteristics of the aircraft, it can land with a full flaps configuration on 40 m of runway, there was enough room for the aircraft to land on the clearest section of the runway.

As regards the aircraft, it was found between some bushes about 80 m from the end of runway 05, facing in the opposite direction to which it had landed, with damage along the full length of the leading edge of its right wing.

All this is consistent with the aircraft having landed on the final section of the runway.

3. CONCLUSIONS

3.1 Confirmed findings

There was sufficient space for the aircraft to land.

The aircraft landed on the unusable final section of the runway.

3.2 Causes/contributing factors

The investigation has determined the cause of the accident was the performance of an emergency landing on an unmaintained airfield due to an in-flight engine power loss as a result of insufficient fuel supply.