

ACCIDENT

Aircraft Type and Registration:	Beech F33A, G-MOAC	
No & Type of Engines:	1 Continental Motors Corp IO-550-B piston engine	
Year of Manufacture:	1989 (Serial no: CE-1349)	
Date & Time (UTC):	9 September 2022 at 1615 hrs	
Location:	Alderney Airport, Guernsey	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 2
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Damage to leading edge of right wing and outer leading edge of left wing. Aircraft damaged beyond economic repair	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	83 years	
Commander's Flying Experience:	2,520 hours (of which 2,313 were on type) Last 90 days - 13 hours Last 28 days - 4 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The aircraft was approaching Runway 26 at Alderney. The pilot lost sight of the runway due to the glare from the sun and descended below the glide path. The aircraft struck the runway approach lights with both wings and the propeller before reaching the threshold. The aircraft was extensively damaged but all those on board were uninjured.

History of the flight

The aircraft (Figure 1) departed Guernsey at approximately 1630 hrs for the short flight to its home airfield of Alderney. The pilot recalled descending to 1,000 ft on a QFE of 1002 hPa and joining downwind for Runway 26. He stated that his usual practice was to set the QNH on both altimeters for departure, but to set the QFE on only the main altimeter for an approach.

The pilot stated that the visibility was good with no low cloud and that the runway was clearly visible from the downwind leg. The pilot recalled turning onto base leg and believed he was correctly positioned. He then turned onto final at 500 ft QFE at 75 kt. There was some glare from the low evening sun, but the pilot continued the approach on the centreline. The glare significantly reduced the pilot's vision ahead but he could see the approach lights and so knew that the runway lights were on. He did not recall seeing the APAPI (Abbreviated

Precision approach Path Indicator)¹ lights. He continued the approach expecting the runway edge and threshold lights to become visible. As the glare continued to reduce the pilot's visibility, he concentrated on looking out to visually acquire the runway lights. As he did so the aircraft descended below the glidepath and struck the approach lights.



Figure 1
Beechcraft Bonanza

The aircraft struck the last three approach lights before the threshold and then a threshold light before reaching the runway. It ran for a short distance along Runway 26, before exiting the runway to the right onto the grass and coming to a stop on grass Runway 03/21. The aircraft's fuel tanks were ruptured by the collisions with the lights and fuel was spilled on to the grass next to the approach lights and onto the surface of Runway 26. Air Traffic Control (ATC) at Alderney were not immediately aware of the collision with the lights but alerted the RFFS when the aircraft left Runway 26 and the pilot stopped responding to ATC calls on RTF. When the aircraft stopped on the grass runway, ATC directed the RFFS to attend and on reaching the aircraft they found all three occupants had already disembarked the aircraft and were uninjured.

The aircraft was 33 years old, and the pilot considered that micro scratches on the transparency would have exacerbated the glare effects and compounded the difficulties of seeing the runway on final approach.

Aerodrome information

Alderney Airport (Figure 2) is the only airport on Alderney. The main runway, 08/26, is 880 m (2,887 ft) long and is mainly asphalt. Runway 26 has an APAPI glidepath indicator positioned 150 m from the threshold and adjacent to the touchdown markings. The approach lighting system on Runway 26 consists of a series of high intensity centreline lights with one cross

Footnote

¹ Abbreviated Precision Approach Path Indicator. A lighting system which gives pilots guidance to their vertical position relative to a runway. The system on Runway 26 at Alderney is set to indicate a 3° glidepath.

bar, extending 420 m from the threshold. The ground slopes up towards the Runway 26 threshold and therefore the approach lights are mounted on pylons. The first of the three light masts that the aircraft struck was 175 m from the threshold.

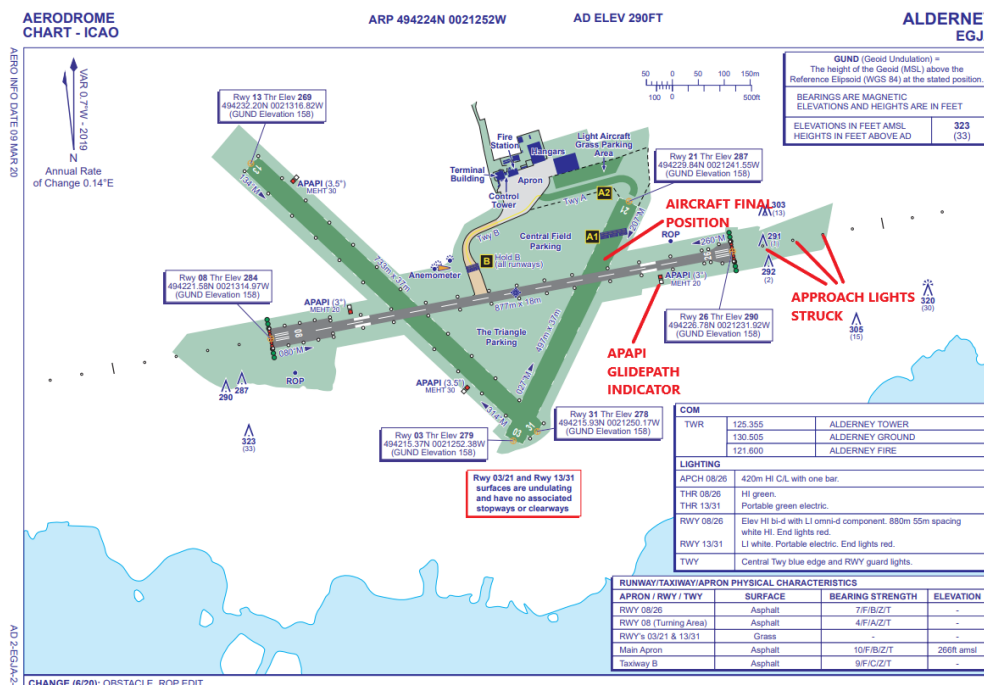


Figure 2
Alderney Airport Chart

Accident site

The light masts are shown in Figure 3 in sequence with 1 being the first mast struck.



Figure 3
Approach light positions

A cross section view of the approach lights is shown in Figure 4. The lights were mounted on masts to give the correct perspective to pilots.

Mast 1 was severed approximately half way up and so the aircraft was already below the level of the runway at that point. Mast 2 appeared to have been struck low down and ground marks suggested it was likely the aircraft touched the ground at this point. It is probable

that the most serious damage to the right wing occurred at Mast 2, still approximately 117 m from the runway threshold. The fuel spill trail began at Mast 2 and continued until the aircraft was 90 m along the runway surface.

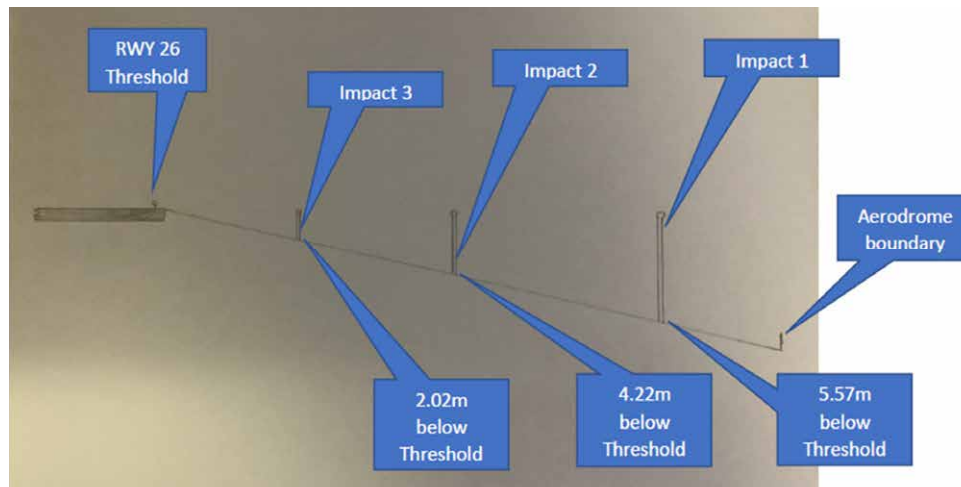


Figure 4

Cross section of the approach showing mast position

Figure 5 shows an image, taken by the RFFS, of a view from the approach lights looking toward the Runway 26 threshold.



Figure 5

View towards Runway 26 threshold

The sun is relatively low in the sky and aligned with the runway.

Aircraft information

The aircraft was not examined by the AAIB but the airport authority supplied pictures of the damage. Figure 6 shows the damage to left wing believed to have been sustained during the collision with Mast 1.



Figure 6

Left wing leading edge damage

The most serious damage was likely sustained on the right wing when the aircraft struck Mast 2 and this is shown at Figure 7.

There were several other areas of impact damage on the aircraft including to the propellor blades.



Figure 7

Right wing root damage

Analysis

The flight proceeded normally, in good weather, until final approach to Runway 26 at Alderney. The sun was low in the sky and aligned with the runway, and the glare of the sun, exacerbated by micro scratches on the aircraft windshield, caused the pilot to lose sight of the runway. The pilot stated that he turned onto final approach at 500 ft QFE.

The pilot could see the approach lights and continued his approach on the centreline. He could not, however, see the threshold lights, the runway edge lights or the APAPIs. The APAPIs would have given an accurate indication of the aircraft's vertical position with respect to the glidepath. With the lack of the vertical information and the degraded visual references it is likely that the pilot allowed the aircraft to descend well below the glidepath.

The aircraft descended below the glidepath and the level of the airfield, and struck the final three approach lighting masts. The aircraft was extensively damaged but did run onto the runway surface before exiting onto the grass.

Despite the poor visual references, the pilot did not consider a go-around as he was sure the aircraft was correctly positioned.

Conclusion

The pilot lost visual references and descended below the glidepath on final approach due to the glare of the sun on a scratched windshield. The aircraft struck the last three approach lighting masts and a threshold light, suffering extensive damage.