Aviation Safety Investigation Report 199601265

Beech Aircraft Corp Baron

21 April 1996

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Aviation Safety Investigation Report

199601265

Occurrence Number: 199601265 **Occurrence Type:** Accident
Location: Probably in the water north of Palana, Flinders Island
State: TAS **Inv Category:** 3
Date: Sunday 21 April 1996
Time: 2030 hours **Time Zone** EST
Highest Injury Level: Fatal
Injuries:

	Fatal	Serious	Minor	None	Total
Crew	1	0	0	0	1
Ground	0	0	0	0	0
Passenger	1	0	0	0	1
Total	**2**	**0**	**0**	**0**	**2**

Aircraft Manufacturer: Beech Aircraft Corp
Aircraft Model: E55
Aircraft Registration: VH-WMD **Serial Number:** TE-1054
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Destroyed
Departure Point: Bankstown NSW
Departure Time: 1732 EST
Destination: Killiecrankie Tas

Approved for Release: Wednesday, May 7, 1997

FACTUAL INFORMATION

History of the flight

The pilot owned a property at Killiecrankie on Flinders Island and on several previous occasions he landed his aircraft at the Killiecrankie airstrip. Lights had recently been installed at the strip but as far as could be determined the pilot had not landed at Killiecrankie at night.

On the afternoon of 21 April 1996 the pilot submitted an Instrument Flight Rules (IFR) flight plan for a flight in VH-WMD from Bankstown to Killiecrankie. The plan showed the aircraft would proceed to Flinders Island aerodrome and from there to Killiecrankie under night Visual Flight Rules (VFR) at an altitude of 1,000 ft, along a coastal route.

The aircraft was equipped with two automatic direction finders (ADF), two very high frequency omni directional radio range (VOR) receivers, a Trimble TNL 2000 global positioning system (GPS) with an Icarus 3000U serialiser, and an ELT 10 emergency beacon. The plan indicated the total fuel endurance was 330 minutes. The planned total flight time to Killiecrankie was 154 minutes.

Prior to departure, the pilot obtained NOTAMs and meteorological forecasts. The amended Flinders Island terminal aerodrome forecast, valid till 2100, predicted 2 octas of stratus cloud at 1,500 ft, 4 octas of stratocumulus cloud at 2,500 ft and 6 octas of altocumulus cloud at 12,000 ft. The forecast also predicted intermittent periods between 1700 and 2100 when the visibility would be 6,000 m, rain showers, with 5 octas of stratus at 1,200 ft.

The aircraft departed Bankstown at 1732 with the pilot giving normal position reports en route. At 1950 the pilot advised Melbourne Centre that his position was 25 NM from Killiecrankie. At 1957 he contacted the crew of another aircraft about to land at Flinders Island, stating that WMD was 20 NM north of Flinders Island, in cloud, leaving 5,000 ft and proceeding to Killiecranie, at the northern end of the island. The pilot of WMD then told the other aircraft crew that if he was not visual at Flinders Island he would conduct an instrument letdown to circling altitude and then proceed night VFR to the north.

In response to a request from Melbourne Centre at 1957 the pilot said he would make an operations-normal call by 2020. At 2000 the pilot stated he was not visual at 3,700 ft and was proceeding to Flinders Island to do a letdown. The pilot of the other aircraft told the pilot of WMD that the cloud base was at about 2,000 ft. The pilot of WMD reported at Flinders Island at 2005 and said he was commencing a letdown.

Melbourne Centre called WMD at 2021. In response, the pilot gave an operations-normal call and said they were now proceeding to Killiecrankie. He also said he would make another operations-normal call at 2045. No other calls were received from the pilot. Melbourne Centre commenced calling WMD at 2045. These calls were continued and checks were made with a person living near the Killiecrankie airstrip. This person advised he had seen a sustained flash of light at about 2030, towards the north. The distress phase of search-and-rescue procedures was declared at 2100 and search action commenced.

An air search continued until the evening of 24 April 1996. During this time a few pieces of aircraft wreckage were found either on or close to the north-western shore of the island, mainly between Killiecrankie Bay and Stanley Point. Police continued a ground search for several more days. The main wreckage was not located.

Wreckage items found

The items of aircraft wreckage found included one front seat, a sun visor, lining from the roof, and a front seat belt. Inspection of these items established they were from a Beech Baron aircraft but definite identification of the registration of the aircraft they were fitted to could not be determined.

Weather conditions

A gusty change passed through Flinders Island aerodrome at about 1800 hours, bringing a small amount of rain. At the time, it was estimated there were three octas of cloud at 3,000 ft, beneath an overcast at 10,000 ft. By 2000 hours it was possible that some low cloud was present to the west of hills on the island. The surface wind at the aerodrome was from the west at about 15 kts.

The pilot of the other aircraft which landed at Flinders Island at the time WMD was in the vicinity, reported there were 3-4 octas of cloud at 2,000 ft. He did not think there was any cloud below 1,200 ft and he reported it was not raining.

Witnesses indicated that it was a very dark night. The moon had set at 1951, which was 30 minutes before the last call received from the pilot. The phase of the moon was such that prior to moonset only a small portion of the moon surface was illuminated, (approximately 13 per cent).

Background information

The coastal areas north of Flinders Island aerodrome were very sparsely populated and there may have been little if any light sources on the ground. The strip at Killiecrankie was equipped with a set of runway lights that could be activated by a series of coded radio transmissions from an aircraft VHF radio. These lights were capable of normal operation. When turned on, the lights remain on for approximately 30 minutes. The lights were not activated at or after the time at which the flash of light was seen.

To operate under night VFR procedures, a pilot is required under Civil Aviation Regulation 174B (1) to observe a lowest safe altitude of not less than 1,000 ft above any obstacles within 10 NM of the aircraft. An exception to this is stated in the Aeronautical Information Publication (AIP) RAC section, paragraph 41.9. This indicates that if the position of the aircraft is positively fixed as having passed a critical obstruction, it is permitted to immediately descend to a lower altitude, provided that the required obstacle clearance above significant obstructions ahead of the aircraft is maintained.

There are a number of high hills between Flinders Island aerodrome and Killiecrankie. These include Mount Brougham, elevation 1,484 ft, and Mount Tanner, elevation 1,086 ft. Also, there are a number of significant hills/mountains approximately 2.5-3 miles from the airstrip at Killiecrankie.

There is a further requirement in AIP RAC paragraph 44.2 which requires that when operating at or below 2,000 ft above ground or water on a VFR flight, the pilot must be able to navigate by visual reference to the ground or water.

The direct line distance from Flinders Island aerodrome to Killiecrankie airstrip is about 16 NM. On the flight plan the pilot indicated the distance as 48 NM, the expected ground speed as 165 kts and the planned time interval as 18 minutes.

Pilot history

Since obtaining his licence in 1967, the pilot had been the subject of many air safety incident reports. As a result, he was required on occasions to undergo flight tests. He failed several of these tests, but later passed re-tests.

The pilot held a command instrument rating which was current until January 1997.

ANALYSIS

The few pieces of wreckage found could not be positively identified as coming from WMD. However, they were from a Beech Baron type aircraft and it is considered beyond reasonable doubt that they were from WMD. The damage to the pieces found indicated that the aircraft had been subjected to significant impact forces. Their general location indicated the main wreckage is probably in the sea near the north-west coast of Flinders Island.

There was an apparent anomaly in the pilot's flight planning in that he indicated he was proceeding coastal, night VFR, at 1,000 ft. The general interpretation of coastal is that it indicates the intention to fly along or close to the coast, commonly within 1 km. The pilot could not have done this at 1,000 ft without operating below the lowest safe altitude.

The actual flight path the pilot intended to follow after leaving Flinders Island aerodrome is uncertain. This is because the distance and time intervals shown on the flight plan for this leg were about three times longer than for a direct track to Killiecrankie.

The very dark conditions would have made it almost impossible to navigate by visual reference to the ground. Also, the dark conditions would have made flying by reference to external visual cues relatively difficult, if not impossible, and in turn would have created orientation problems for the pilot. Even so, in the absence of direct evidence, the reason for the aircraft not reaching the intended destination is unknown.

SIGNIFICANT FACTOR

Weather conditions in the vicinity of Killiecrankie airstrip were dark and probably not suitable for night VFR flight.