

COMMONWEALTH OF AUSTRALIA-BUREAU OF AIR SAFETY INVESTIGATION  
 AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT

REFERENCE NO.  
 SI/802/1075

1. LOCATION OF OCCURRENCE

15 km southeast of Tumut, NSW		Elevation: 3900 feet
Date: 16.12.80	Time: 2212 hours	Zone: ESuT

2. THE AIRCRAFT

Make and Model: Britten-Norman BN2A Mk III-2	Registration: VH-EGU
Certificate of Airworthiness: Issued on 21.7.78	
Certificate of Registration Issued to:	Operator:
Degree of Damage to Aircraft: Destroyed	Other Property Damaged: Nil
Defects discovered: Nil	

3. THE FLIGHT

Departure Point: Bankstown	Time of departure: 2029 hours
Destination: Essendon	
Purpose of flight: Carriage of Cargo	Class of Operation: Charter

4. THE CREW

Name	Status	Age	Class of Licence	Hours on Type	Total Hours	Degree of Injury
	Pilot	28	Senior Commercial	32	2397	Fatal

5. OTHER PERSONS (ALL PASSENGERS AND PERSONS INJURED ON GROUND)

Name	Status	Degree of Injury
	Passenger	Fatal

## 6. RELEVANT EVENTS

The pilot was employed as a second officer by a major airline operator. As such, most of his recent flying experience had been on multi-engined turbojet transport aircraft that have a high performance, cruise at levels above most adverse weather conditions and are equipped with a range of anti-icing and deicing systems. The pilot also worked on a part-time basis with the operator of VH-EGU and had been endorsed on that aircraft on 2.10.80.

VH-EGU was not fitted with an oxygen system, and hence was restricted to a maximum operating altitude of 10 000 feet. The only anti-icing equipment fitted were carburettor and pitot heating systems and accordingly, operations in known or forecast icing conditions were prohibited.

It was arranged that on 16.12.80 the pilot would fly the operator's regular cargo charter to Essendon, scheduled to depart Bankstown at 1945 hours. A load of 1000 kg of general cargo was carried. The aircraft's weight at take-off has been calculated as 4463 kg, some 73 kg less than the maximum permitted weight. The calculated centre of gravity was within permitted limits.

The weather forecasts provided to the pilot at the Bankstown Briefing Office indicated that a cold front was crossing the southern mountains of New South Wales. Broken stratocumulus up to 6000 feet was forecast for the mountain area, with layers of broken altostratus above 10 000 feet and isolated thunderstorm activity. Severe icing and turbulence were associated with the thunderstorms. Due to an oversight, the freezing level was omitted from the forecast for southern New South Wales but the forecast for the Victorian segment of the flight gave a freezing level of 6000 feet.

The operator provided its pilots with a pre-printed flight plan for the flight to Essendon. The plan, designed for operations under the Instrument Flight Rules (IFR), contained two different routes for the Bankstown to Albury segment of the flight and a common track from Albury to Essendon. The first route was titled 'Preferred Route' and was via Marulan, Wee Jasper and Marmi. The lowest safe altitude on the Wee Jasper to Marmi leg was 6700 feet. The second route on the plan, titled 'Standard Route', was further to the west and tracked via Marulan, Yass and Holbrook. The lowest safe altitude on this route to Albury did not exceed 5200 feet. The difference in distances via the two routes was only 11 km.

The pilot of VH-EGU submitted a flight plan in which details for both the Preferred Route and the Standard Route had been completed. The Preferred Route was planned at 4000 feet to Marulan, 6000 feet to Wee Jasper and then 8000 feet for the remainder of the flight. The Standard Route was planned at 4000 feet to Marulan and then 6000 feet for the remainder of the flight.

Following a normal departure, VH-EGU was tracked to Marulan and climbed to 6000 feet. At 2053 hours the pilot sought from Sydney Flight Service Centre an airways clearance on the Preferred Route, through the controlled airspace surrounding Canberra. This was approved by Air Traffic Control (ATC) and at 2119 hours the aircraft was cleared through controlled airspace, on track Marulan to Wee Jasper, at 6000 feet.

## 6. RELEVANT EVENTS (Cont'd)

At 2143 hours the pilot requested and received a clearance to climb to 8000 feet. Some four minutes later he was asked if he could reach 8000 feet by Wee Jasper. When the pilot responded in the affirmative, Sydney Flight Service Centre advised that it was now an ATC requirement that he do so. The requirement was imposed to provide separation from another aircraft, VH-MCZ, proceeding on the reciprocal track at 7000 feet.

When the pilot did not report at Wee Jasper at the nominated time of 2149 hours, Sydney Flight Service Centre called the aircraft and requested its altitude and estimate for Wee Jasper. The pilot reported having left 7000 feet and revised the estimate for Wee Jasper to 2153 hours. Sydney Flight Service Centre then relayed a request from Canberra Approach Control, that VH-EGU expedite its climb to 8000 feet. The pilot replied that he was unable to expedite his climb because of airframe and carburettor icing and it would probably be 2155 hours before he reached 8000 feet.

VH-EGU was then instructed to transfer radio watch to Canberra Approach Control. This was effected at 2152 hours and three minutes later the pilot reported maintaining 8000 feet. At 2156 hours, VH-EGU was called by the pilot of VH-MCZ and asked what weather conditions were like between Wee Jasper and Sydney. The pilot of VH-EGU replied that the weather was patchy, that the worst patch he had encountered was whilst climbing between Marulan and Wee Jasper but that he was now in the clear.

At 2157 hours the pilot of VH-EGU advised that his estimates for Marmi and Albury were 2226 hours and 2241 hours, respectively. Some two minutes later it was calculated by Canberra Approach Control that VH-EGU was leaving controlled airspace and the pilot was instructed to change his radio watch back to Sydney Flight Service Centre. This was effected at 2200 hours.

At 2210:03 hours, the pilot made the radio transmission, "Pan Pan Pan, Sydney this is Echo Golf Uniform. Maintaining six thousand, request radar position, ah, just encountered severe turbulence and lost two thousand feet altitude. Presently heading three six zero". Seven seconds after the end of this transmission he said "Maintaining six thousand. I'm doing my best to climb to a higher altitude. Requesting radar position and, ah, steer away from, ah, a radar steer away from terrain." At 2210:51 hours, a final radio transmission was received from the pilot, advising that the aircraft's transponder equipment, which was used when under ATC radar control to identify the aircraft, had been selected to the emergency code setting. There was no response to further calls to the aircraft by both ground stations and other aircraft in the area.

Sydney Flight Service Centre was not equipped with radar and ATC units at Sydney, Melbourne and Canberra which are radar equipped did not have this facility available because of industrial work bans by radar technicians. Although not connected to the ATC centres, the radar was functioning and at about 2211 hours the transponder aural alarms at both Sydney and Melbourne were activated, probably by the emergency code of VH-EGU. Receipt of the signal was brief, however, the Canberra facility, which suppresses a received emergency signal for the first sweep of the radar head (5 sweeps per minute), did not activate. A visual inspection

## RELEVANT EVENTS (Cont'd)

of the radar screen made by technicians about one minute after the aural alarm was activated confirmed that VH-EGU was no longer in radar contact.

The Distress phase of Search and Rescue procedures was declared at 2213 hours. The wreckage of VH-EGU was located by a searching aircraft at 1634 hours on the following day. The accident site was on the northern slope of Mt. Hovell (elevation 4552 feet). The aircraft had struck the heavy timbered terrain whilst descending at an angle of approximately 6.5 degrees and on a heading of 145 degrees magnetic. It had disintegrated on impact and had been partly consumed by fire.

Examination of the wreckage indicated that structural integrity had been maintained until ground impact. A spectrographic analysis of the radio transmissions from the aircraft indicated that the engines were producing power, at a greater than cruise power setting, at the time of the final calls by the pilot.

The heading of 360 degrees magnetic that the pilot of VH-EGU last reported would have taken the aircraft away from the higher terrain in the area and, at 6000 feet, the aircraft would have cleared all mountains by more than 1000 feet.

7. OPINION AS TO CAUSE

There is insufficient evidence available to determine the cause of the accident. However, it is apparent that an encounter with severe weather conditions was a factor.

Approved for publication under the provisions of Air Navigation Regulation 283(1)

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Date:  
24.3.83