

Bavarian Air Crash

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August 9 this year, marks the 40th anniversary of the crash in Germany of British Eagle Viscount G-ATFN, "City of Truro" in which all 44 passengers and 4 crew perished. Amongst the 44 passengers were 13 from the Merseyside area, and amongst them; a group of 8 young women, all in the prime of their lives, from the Catholic Ramblers Association which still exists and thrives today. In remembrance of this tragic loss, 40 years on, this is the story of those girls, the terrible details of the crash and the catalogue of engineering failures that led to the loss of this aircraft.

The Human Cost

At midnight on Thursday 8 August 1968, a group of 7 girls from the Liverpool Catholic Ramblers Association set off from Liverpool's Lime Street station on the first part of their journey to Seefeld in the Austrian Tyrol for a walking holiday. The group was made of Maureen McLindon (20), a nurse at Broadgreen Hospital. Barbara O'Keefe (25), a popular gym teacher at Blessed Ambrose Barlow secondary school, West Derby. Valerie Humphreys (22), a teacher at St Hugh's primary school. Jean Baxter (24), a well-liked teacher at Our Lady of the Assumption school, Gateacre. Mary Byron (25) a devoted teacher at Blessed Edmund Arrowsmith secondary school, Whiston. Irene Rawlinson (23), a civil servant from Wavertree, and Monica Hanna a shorthand typist for an engineering firm.

Two of the girls, Valerie Humphreys and Monica Hanna were last-minute replacements for two other girls who couldn't travel.

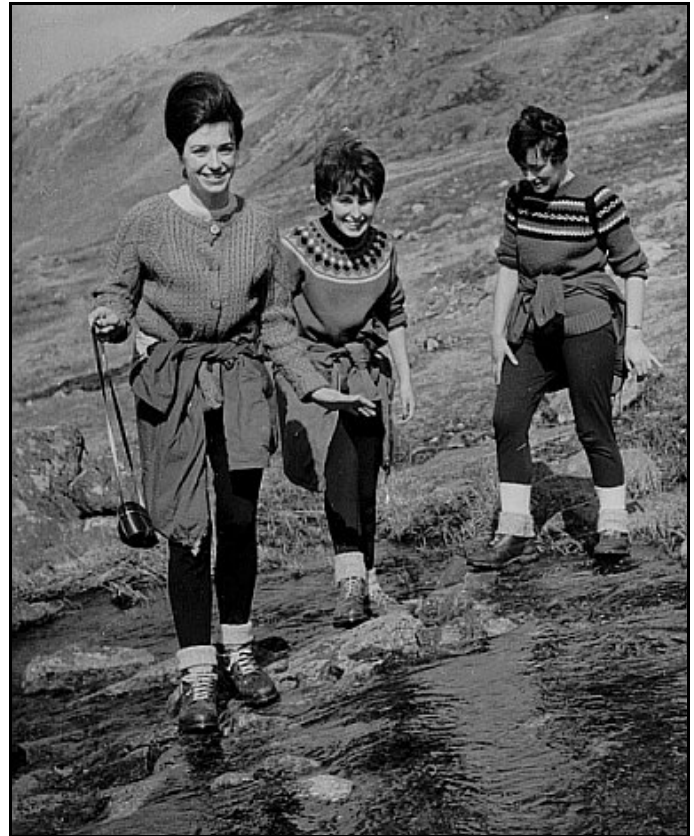
A crowd of their rambling friends waved them off from the station after an evening spent dancing at their weekly social in the Building & Design Centre in Hope Street. The group were in high spirits and there was much laughter as the train pulled out of Lime St. Station. The girls were headed for London where they would meet up with an eighth Rambler, Mary Fletcher, a cousin of Maureen McLindon. Then the group would take a British Eagle scheduled flight from Heathrow Airport to Innsbruck in Austria.

Mary was anxious about flying; she had not flown before and was a little scared. Likewise, Barbara had never been on board an aeroplane and she had been having premonitions of a crash, but decided she was just being fanciful. She was due to meet up with her boyfriend, Mike, in Innsbruck, so she was looking forward with pleasure to doing that. Mike's sister, Valerie, was also going on the holiday and she too was looking forward to seeing her brother.

The next day, Friday, 9 August 1968, British Eagle Flight number EA802, lost all electrical power and crashed at 13.04 BST (14.04 Local) on to an embankment of the Nürnberg—München (Nuremberg—Munich) autobahn, near Langenbrück, Bavaria killing all 48 people on board.

The news of the crash was a double blow for Mike Humphreys. He and a friend had been waiting some hours at Innsbruck's terminal for the plane's arrival and, sadly, both his sister and his girlfriend were aboard and lost.

The girls' bodies were brought home for burial and the funeral services were attended by numerous friends from the Liverpool Catholic Rambler's Association. It was a very sad time for the



Monica Hanna (left) with fellow Ramblers, Hilda and Teresa

families and the club – each girl had a unique character and they were sorely missed.

On Sunday 25 August, some two weeks later, a memorial mass was held at Liverpool's Metropolitan Cathedral, led by Bishop Harris.

Today, the girls are still remembered with great affection and arrangements are being made for a memorial service to be held in their honour to mark the 40th anniversary of their deaths.

The Aircraft

G-ATFN was a Vickers V.739A Viscount aircraft. It was built in 1958 with the Makers Serial Number (MSN) 394 for the Egyptian airline, Misrair as SU-AKO. (Misrair changed its name to United Arab Airlines on 1 August 1960.) G-ATFN first flew on Tuesday, 15 July 1958 at Hurn, England powered by 4 Rolls-Royce Dart 506 engines. The aircraft was purchased by British Eagle International Airlines Ltd from United Arab Airlines on 3rd September 1965 and took the fleet name "City of Truro". She was leased to Air France between 20 March 1968 and June 1968.

On the morning of the crash, G-ATFN started its working day in Liverpool. It departed Speke Airport at around 08.00 for the short hop to Chester (Hawarden) where it landed at 08.30. It then continued on to Heathrow Airport where it touched down at 09.20. The next sector the aircraft was tasked with was to Innsbruck's Kranebitten Airport (INN/LOWI). The scheduled take-off time of 10.25 was delayed by more than hour due to a cloudburst in the London area which had flooded the tunnel access to the central area of the Airport.

At 11.37 flight EA802, call-sign *Eagle 802* finally got airborne for Innsbruck with its 44 passengers and crew of 4. At the controls were Captain Edward Earl Dawdy, a 42 year old Australian with considerable experience, and First Officer Garry David Holland (31). In the cabin were Senior Stewardess Caren Litton (23) and Stewardess Elizabeth Walsh (26)

By 12.02 the aircraft was over Dover and climbing at 191 knots



through flight level 175 (approx 17,500ft) to its cruising level of approx. 21,000ft (flight level 210). The aircraft was in R/T communication with the ATS units at London, Brussels, Frankfurt and Munich successively. This radio communication consisted mainly of the necessary directions for traffic handling from the ATS units on the ground and the appropriate acknowledgements and proscribed position reports above the individual reporting points from the aircraft.

At 13.53.05 the crew reported the aircraft passing overhead the Allersberg reporting point and expected 'Mike' (the next Non-Directional Beacon (NDB)) at "zero two" (two minutes past the hour). Munich Radar acknowledged this and confirmed that the aircraft was in radar contact with them. At 13.53.20 the last radio message from the crew was recorded and although the words were indistinct they were presumed to have been "Thank you" in response to the message just received from Munich Radar. Despite the lack of clarity, the signal strength was normal. At 14.02.10 Munich ATS observed the aircraft on radar passing the 'Mike' beacon and gave 'Eagle 802' clearance to descend to flight level 120 (12,000ft). There was no reply. Munich ATS continued to watch the flight for a further 10-13 nautical miles (NM) south of the NDB, "Mike". After that the aircraft disappeared from radar, probably because the aircraft was in a dead zone of the antenna.

At approximately 14.29 flight EA802 crashed into the ground at kilometre-stone 472.2 of the Nuremburg-Munich autobahn in a slightly nose-down attitude (calculated to be greater than 12.5°) and broke up on impact resulting in an explosion and intense fire.

Remarkably, only one car on the autobahn was damaged by debris with only minor injuries to the driver.

The general direction of the fragments of the main wreckage was more or less northerly. The wing sections beyond the outer engines were found some 1900m away from the main wreckage, part of the port elevator at about 350m and part of the elevator anti-balance tab at about 450m. From the scatter of the parts which had become detached in flight, beginning about 2,300m before the main wreckage, a turn having a radius of, at most, 1,000m can be ascertained.

The accident site was approximately 7NM north of the Mike NDB, a point the aircraft had over-flown previously some 27 minutes earlier. The events of the intervening 27 minutes will never be truly known, however, the report into the crash by the German authorities was able to establish many facts and gave the probable cause as the aircraft's electrical power supply failing in cruising flight - possibly without the generator warning lights illuminating or illuminating distinctly - which meant that during the subsequent descent, which had to be carried out by



instruments because of the weather, the vital instruments for indicating the flight attitude showed increasingly incorrect readings and failed completely after the gyros had stopped rotating. Thus the crew had no means of determining the flight attitude of the aircraft while flying in cloud. Under these conditions it was unavoidable for the aircraft to get into uncontrolled flight attitudes, in which it was subjected to severe loading which exceeded the ultimate load whilst still in cloud and therefore led to the fracture of the two outer wings. It is clear that the aircraft, at least by this time, was in an uncontrolled flight attitude (as the failure of the outer wings was only possible at speeds exceeding 310 knots i.e. 52 knots above the maximum permissible speed.) Once the aircraft was visual with the ground—possibly less than 1,000ft—it was no longer possible to exert any decisive control over the flight path.

The Investigation

Although the aircraft was fitted with a flight data recorder or "Black-Box" it was fairly rudimentary (by today's standards) recording only five flight, and two reference, parameters. Also, owing to the unfavourable installation of the flight recorder below the main spar of the tailplane, the cassette and steel wire containing the recordings were broken into many pieces in the crash.

The electrical system on the Viscount consisted of 4 generators powered by the engines and 4 batteries feeding a main busbar (common rail) with DC power via control circuits. This busbar fed various services and instruments on the aircraft with DC



The ill-fated British Eagle Viscount G-ATFN, *City of Truro*

power whilst 2 inverters were also fed from it to provide power for the appropriate AC services. [An inverter converts DC to AC] Consequently when a fault developed in the DC control circuits all power for the aircraft was left being supplied by the 4 batteries which were quickly drained. As the batteries started to drain, various instruments would cease to function as the voltage reduced, such as the radio, transponder and weather radar, whilst others, such as the gyro compasses and artificial horizons would give increasingly incorrect readings until they failed completely when the gyro stopped completely. Furthermore, once the voltages of the batteries dropped below a certain level, it would have been impossible for the pilots to reconnect the generators to the busbar as the system didn't allow for it. A modification to allow this had been available from the makers since 3.11.1958 but was never fitted to this aircraft.

It was concluded by the investigation that the failure of DC supply had not been realised by the crew in sufficient time to have allowed them to turn off all non-essential, and in some cases very heavy current consumers, thus allowing essential navigational and communication equipment to function for sufficient time to effect an emergency landing at the nearest airport.

The investigation could not determine with certainty the cause of failure of the electrical system. It may be assumed, however, that a fault occurred in the DC generator control circuit. Faults had occurred repeatedly in the electrical supply system without their true cause being discovered.

As a result of the crash, several measures were taken to ensure this type of situation never occurred again: The British Aircraft Corporation (of which, Vickers was now a part) prescribed a drill for use in the case of failure of one or more generators, by means of which at least one generator could be reconnected to the power system. The 1958 modification to have manually operated switches for re-setting generators which had become disconnected from the power system was made mandatory. A modification to fit improved warning (flashing) lights should the DC busbar be supplied only by the aircraft batteries was approved and fitment made mandatory. A modification was made mandatory that an additional emergency busbar was fitted to ensure a supply of power to essential communication, navigational and flight instruments. Furthermore, the crash



investigation report made 2 recommendations relating to the safety of all passenger aircraft: that the navigation aids should be supplemented by an artificial horizon fed from an electrical supply independent of the aircraft's electrical power system, and, that an additional VHF emergency transmitter-receiver be fitted, fed independently of the aircraft's power system and employing at least the distress frequency of 121.5MHz.

Just two months after the accident, British Eagle closed its Liverpool base due to financial problems and a month later, on 6 November 1968 stopped flying completely.

All times given = BST (GMT +1)
Local time (Bavaria) = GMT +2

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