

ACCIDENTS INVESTIGATION BRANCH
Department of Trade and Industry

**Piper PA 28 Cherokee 140 G-AZYP
Report on the accident at Illgill Head,
Wast Water, Cumberland on 25 March 1973**

List of Civil Aircraft Accident Reports issued by AIB in 1973

<i>No.</i>	<i>Short title</i>	<i>Date of publication</i>
1/73	Douglas DC3 PH-MOA at Southend Airport, June 1971	February 1973
2/73	Bolkow BO 208C Junior G-ATVB near Hambledon, Surrey, January 1972	February 1973
3/73	Beagle 206 Series 2 G-AVAL at Chouppes (Vienne) near Poitiers, France, March 1971	May 1973
4/73	Trident I G-ARPI near Staines, June 1972. Report of the Public Inquiry	May 1973
5/73	Jodel DR 1050 Ambassadeur G-AYEA in Bridgwater Bay, Somerset, March 1972	May 1973
6/73	Fournier RF 4D G-AXJS in the sea about ¼ mile northeast of Skateraw, Kincardine, October 1972	June 1973
7/73	Piper PA-28R Series 200, Cherokee Arrow G-AYPW at Six Ashes Road, Halfpenny Green, Staffordshire, August 1972	September 1973
8/73	Nipper T66 Mark 3 G-AVKT at Burton Constable Hall, Yorkshire, August 1972	August 1973
9/73	Piper PA 30-160 Twin Comanche G-AVJV at Crib-y-Ddysgl, Snowdonia, October 1972	August 1973
10/73	Helicopter Bell 47D1 G-ASJW 1 mile northwest of Saxilby, Lincolnshire, July 1971	September 1973
11/73	Piper PA 30 Twin Comanche G-ASRN at Newbury, Berkshire, June 1972	September 1973
12/73	Brantly B-2B Helicopter G-ATJY at Oxford Airport (Kidlington) Oxfordshire, November 1972	September 1973
13/73	Hiller 360-UH 12 E Helicopter G-ATVN at Balderton, near Newark, February 1972	September 1973
14/73	Piper Comanche PA 24-250 G-ATAE at Bordesley Park near Redditch, June 1971	December 1973
15/73	HFB 320 Hansa D-CASY off Blackpool Airport, June 1972	December 1973
16/73	Piper PA 28 Cherokee 140 G-AZYP at Illgill Head, West Water, Cumberland, March 1973	December 1973

Department of Trade and Industry
Accidents Investigation Branch
Shell Mex House
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2 October 1973

The Rt Honourable Peter Walker MBE MP
Secretary of State for Trade and Industry

Sir,

I have the honour to submit the report by Mr N S Head, an Inspector of Accidents, on the circumstances of the accident to Piper PA 28 Cherokee 140 G-AZYP which occurred at Illgill Head, West Water, Cumberland on 25 March 1973.

I have the honour to be
Sir
Your obedient Servant

V A M Hunt
Chief Inspector of Accidents

Accidents Investigation Branch
Civil Aircraft Accident Report No 16/73
(EW/C442)

Aircraft: Piper PA 28 Cherokee 140 G—AZYP

Engine: Lycoming O-320-E2A

*Registered Owner
and Operator:* Air Navigation and Trading Co Ltd

Pilot: Mr G G Austin — Killed

Passengers: Three — Killed

Place of Accident: Illgill Head, Wast Water, Cumberland

Date and Time: 25 March 1973 at 1025 hrs

All times in this report are GMT

Summary

During a private flight from Kirkbride to Blackpool the aircraft deviated from the planned route along the coast and flew inland. The pilot and his passengers were killed when it struck the rock face of the cloud-covered Illgill Head in the Lake District. The report concludes that the accident resulted from the pilot entering cloud at a height too low for safe terrain clearance for the area in which he was flying.

1. Investigation

1.1 History of the flight

The pilot and three passengers in G-AZYP were four of a party of twenty who had flown in six private aircraft from Blackpool to attend a social function in the hotel on Kirkbride aerodrome on the evening before the accident. The party stayed the night at the hotel and after breakfast there was an informal discussion regarding the return trip. The weather at Blackpool was checked by telephone and found to be satisfactory although the high ground of the Lake District was covered by cloud. This prompted a reference in the discussion to the dangers of flying into clouds with 'hard centres' and it was agreed that the route to be followed to Blackpool was along the coast over which they had flown the previous evening.

As there are no refueling facilities at Kirkbride each of the aircraft had carried sufficient fuel for the return flight. There are no Air Traffic Control services at the aerodrome and none of the pilots 'booked out' or filed flight plans. G-AZYP, piloted by Mr G G Austin (with a Mr S R Rogerson in the right hand seat) was the third aircraft to take-off at about 1000 hrs. During the flight G-AZYP made R/T contact for a short period with G-AWXV, but no mention was made of an intention to deviate from the agreed coastal route. This was the last and only R/T contact with G-AZYP. Subsequently it made visual contact with another aircraft of the group, G-AVBM, when it passed about 50 yards away on the port side. Both aircraft were then flying at about 2,000 feet above mean sea level in the vicinity of Whitehaven. The occupants of the aircraft waved to each other and then, as G-AZYP pulled ahead, it was seen to make a descending turn to the left. It descended to a low altitude and appeared to be following the ground contours towards the cloud-covered mountains and went out of sight in the distance as it climbed over a ridge. That was the last time it was seen before the accident occurred.

Between 1015 hrs and 1030 hrs witnesses near Illgill Head heard the steady note of an aircraft engine and then a thump but they did not see the aircraft because of mist. After the thump, one witness saw rocks falling down the mountain slope nearby. A search was put into operation and some two to three hours later the wreckage of the aircraft was found by an instructor from the Eskdale Outward Bound School. He was later joined by other instructors from the school, and then by a doctor and a police officer.

The wreckage site was reached by the use of ropes and it was then found that the aircraft had flown into a vertical rock face at an altitude of about 1,800 feet, approximately 50 feet below the summit of a ridge on the side of Illgill Head. It had then fallen about 200 feet down the mountain side and had come to rest on sloping scree below. At that time the mist was down to an altitude of about 1,000 feet and this remained until several hours after the accident.

1.2 Injuries to persons

<i>Injuries</i>	<i>Crew</i>	<i>Passengers</i>	<i>Others</i>
Fatal	1	3	—
Non-fatal	—	—	—
None	—	—	—

1.3 Damage to aircraft

Destroyed.

1.4 Other damage

None.

1.5 Crew information

Graham George Austin, aged 28, held a Private Pilot's Licence endorsed for Group A aircraft, and a restricted radio telephony licence. He was last medically examined for his licence on 14 April 1971. At the time of the accident he had flown 66 hours in powered aircraft, of which 55 were in the Cherokee, and in addition he had completed 172 hours in gliders. He did not hold an IMC rating.

1.6 Aircraft information

The aircraft was a four seater, single engined, low wing monoplane. It was equipped with dual controls, a normal blind flying panel and one radio transmitter receiver. No radio navigation equipment was fitted. It had flown approximately 1,000 hours since new. The certificate of airworthiness in the general purpose category, was valid until 1 August 1974, and the aircraft had been maintained in accordance with an approved maintenance schedule.

A maintenance check carried out on 16 March 1973 was still in force, being valid for either 45 days or 75 flying hours if this was completed before the 45 day period expired. The aircraft had flown for 28 hours since the check was completed.

1.7 Meteorological information

Observations made by the occupants of some of the other aircraft in the group which followed the coastal route from Kirkbride to Blackpool, indicate that on this route, and generally to the west of the Lake District, the weather was good with visibility of 25 to 30 kilometres, and less than four octas of cloud, base about 2,000 feet. Over the hills, there was very low cloud in fairly solid layers down to about 1,000 feet.

An appreciation of the weather in the Wasdale area at about the time of the accident, prepared by the Meteorological Office, is as follows:

Synoptic situation:	A trough of low pressure in an unstable airstream was moving eastwards across the area.
Surface wind:	Southwesterly 18 knots.
Upper wind and temperature:	At 2,000 feet 260°/30 knots +4°C.
0°C Isotherm:	3,500 feet.

Cloud:	6/8 to 8/8 cumulus and cumulo-nimbus, base 1,000 to 1,500 feet above sea level covering all high ground.
Visibility:	Reduced to about 1,500 metres in showers and to less than 100 metres in hill fog. Otherwise good.
Weather:	Rain showers. Hill fog over high ground.
Icing and turbulence:	Severe icing above 3,500 feet. Moderate or severe turbulence.
MSL pressure:	1,003 millibars.

1.8 Aids to navigation

The aircraft was not fitted with radio navigation equipment other than a VHF transmitter/receiver. Various topographical maps and charts, and the remains of a radio navigation chart were found at the accident site. A 1:500,000 ICAO Aeronautical Chart of Northern England had the track for the coastal route from Kirkbride to Blackpool marked on it. This chart showed the high ground into which the aircraft had crashed and also a spot height of 3,210 feet about 3 miles to the east.

1.9 Communications

None, other than the R/T contact referred to in para 1.1.

1.10 Aerodrome and ground facilities

Not applicable.

1.11 Flight recorder

Not required or fitted.

1.12 Wreckage

Inspection at the scene of the accident showed that the aircraft had flown into a rock face with its wings in a laterally level attitude, on a heading of about 110° (T). The impact point was at an altitude between 1,800 and 1,900 feet and some 50 feet below the summit of Illgill Head. Following the impact the wreckage had fallen about 200 feet down the mountain side and had come to rest near the top of sloping scree.

The condition of the wreckage was consistent with a head on impact within the normal speed range for the aircraft type. The starboard aileron and nose and starboard undercarriage units had become detached and were found further down the mountain side below the main wreckage. In addition the cockpit area had also been damaged by a fire which had broken out after impact. The propeller, which had broken up, had been rotating under power. The power unit had sustained considerable damage. Parts of several instruments were recovered, of these the following revealed useful evidence:

- (a) Altimeter – set to 1003 millibars
- (b) Vertical speed indicator (VSI) – indicating a climb of 600 feet per minute
- (c) Suction indicator (for gyro instruments) showing 5 inches of mercury.

The fuel cock in the main wreckage was found selected to the left tank; the flaps were retracted. Both stabilisers and tabs were still attached to the main wreckage; they had suffered considerable damage but were probably the least damaged portion of the aircraft. The rudder and stabilator controls were still attached to their control surfaces from the point where they emerged from the rear fuselage, however, due to the excessive damage forward of this point it was not possible to trace them through to the cockpit area. No evidence of pre-crash malfunction was found.

1.13 Medical and pathological information

A post mortem examination was carried out on the four occupants of the aircraft. This established that death in each case was instantaneous and the result of multiple injuries. There was no evidence of any pathological condition which could have contributed to the accident.

A toxicological examination was also carried out. With regard to the pilot this established that there was an alcohol blood level of 7 mg per 100 ml. It is expert opinion that this low level did not contribute to the cause of the accident and represents the excretory phase of alcohol taken the previous evening.

1.14 Fire

There had been a small fire at the accident site which had further damaged the cockpit area and caused some superficial burning on one of the bodies.

1.15 Survival aspects

The accident was non-survivable.

1.16 Tests and research

Not applicable.

2. Analysis and Conclusions

2.1 Analysis

The investigation brought to light no evidence which could indicate that there was any pre-crash defect in the aircraft. Witnesses near to the scene of the accident heard a steady engine note and examination of the wreckage established that the engine was running under considerable power at impact.

From the evidence of the occupants of the aircraft G-AVBM, it is clear that G-AZYP's departure from the planned route along the coast was intentional and most probably for reasons such as sightseeing. The accident site is about 6 minutes flying time from the position where the alteration of course was made and there was ample time for the pilot to have turned clear of cloud before reaching the high ground had he wished to do so.

There is no doubt that the pilot was aware of the proximity of high ground when he entered cloud — this is confirmed by the evidence of high engine power and the indication of a rate of climb on the appropriate flight instrument — but, it is clear that he had misjudged his own position in relation to it and had left the climb too late.

The toxicological examination of the pilot showed a blood alcohol level of 7 mg per 100 ml. This low level is not significant in itself but as it represents the residue of an alcohol intake during the previous evening, the possibility that the pilot's judgment had been affected by a 'hangover' was considered. However, the evidence, particularly that regarding the way in which the aircraft had left the planned route, argues strongly against this possibility.

2.2 Conclusions

(a) Findings

- (i) The documentation of the aircraft was in order.
- (ii) The aircraft was properly loaded and had been properly maintained.
- (iii) There was no evidence of failure or malfunction of the aircraft, its engine or equipment.
- (iv) The pilot was properly licensed but did not hold an IMC rating.
- (v) The aircraft struck a mountainside at a height of about 1,800 feet whilst climbing in cloud.

(b) Cause

The accident resulted from the pilot entering cloud at a height too low for safe terrain clearance for the area in which he was flying.

N S Head
Inspector of Accidents

Accidents Investigation Branch
Department of Trade and Industry
October 1973