# Air Accident Investigation Unit Ireland

## FACTUAL REPORT

## ACCIDENT

**Piper PA-28-181 (Archer II), G-BHNO**

**Milltownpass Airstrip, Co. Westmeath**

**28 June 2022**


An Roinn Iompair
Department of Transport

## Foreword

This safety investigation is exclusively of a technical nature and the Final Report reflects the determination of the AAIU regarding the circumstances of this occurrence and its probable causes.

In accordance with the provisions of Annex 13[1] to the Convention on International Civil Aviation, Regulation (EU) No 996/2010[2] and Statutory Instrument No. 460 of 2009[3], safety investigations are in no case concerned with apportioning blame or liability. They are independent of, separate from and without prejudice to any judicial or administrative proceedings to apportion blame or liability. The sole objective of this safety investigation and Final Report is the prevention of accidents and incidents.

Accordingly, it is inappropriate that AAIU Reports should be used to assign fault or blame or determine liability, since neither the safety investigation nor the reporting process has been undertaken for that purpose.

Extracts from this Report may be published providing that the source is acknowledged, the material is accurately reproduced and that it is not used in a derogatory or misleading context.

[1] **Annex 13**: International Civil Aviation Organization (ICAO), Annex 13, Aircraft Accident and Incident Investigation.
[2] **Regulation (EU) No 996/2010** of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation.
[3] **Statutory Instrument (SI) No. 460 of 2009**: Air Navigation (Notification and Investigation of Accidents, Serious Incidents and Incidents) Regulations 2009.

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**State File No: IRL00922027**

**Report Format: Factual Report**

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**In accordance with Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No 996/2010 and the provisions of SI No. 460 of 2009, the Chief Inspector of Air Accidents, on 30 June 2022, appointed Ray Jordan as the Investigator-in-Charge to carry out an Investigation into this Accident and prepare a Report.**

| | |
|---|---|
| **Aircraft Type and Registration:** | **Piper PA-28-181 (Archer II), G-BHNO** |
| **No. and Type of Engines:** | **1 x Lycoming O-360-A4M** |
| **Aircraft Serial Number:** | **28-8090211** |
| **Year of Manufacture:** | **1980** |
| **Date and Time (UTC)[4]:** | **28 June 2022 @ 13:18 hrs** |
| **Location:** | **Milltownpass Airstrip, Co. Westmeath, Ireland** |
| **Type of Operation:** | **Private** |
| **Persons on Board:** | **Crew – 1** **Passengers – Nil** |
| **Injuries:** | **Nil** |
| **Nature of Damage:** | **Substantial** |
| **Commander's Licence:** | **Private Pilot Licence (PPL) Aeroplane (A), issued by the Civil Aviation Authority (CAA) of the United Kingdom (UK)** |
| **Commander's Age:** | **52 years** |
| **Commander's Flying Experience:** | **359 hours, of which 250 were on type** |
| **Notification Source:** | **Pilot-in-Command** |
| **Information Source:** | **AAIU Report Form submitted by the Pilot**<br>**AAIU Field Investigation** |

[4] **UTC**: Co-ordinated Universal Time. All times in this report are quoted in UTC unless otherwise stated; local time was UTC + 1 hour on the date of the accident.

## SYNOPSIS

The Piper PA-28-181 aircraft, touched down on Runway 24 at Milltownpass Airstrip in gusty conditions. During the landing roll, it departed the right-hand side of the runway and entered rough ground. The aircraft's right wing struck a wooden post and the aircraft pivoted by approximately 180 degrees before it came to rest. The aircraft sustained substantial damage. The Pilot, who was the sole occupant of the aircraft, was uninjured and exited the aircraft unaided. There was no fire.

## NOTIFICATION AND RESPONSE

The Pilot of the aircraft notified the AAIU on 30 June 2022, two days after the accident. Two Inspectors of Air Accidents deployed to the site to commence an Investigation.

# 1. FACTUAL INFORMATION

### 1.1 History of the Flight

The aircraft departed Wolverhampton/Halfpenny Green Airport (EGBO) in the UK at approximately 11:28 hrs for a VFR[5] flight to Milltownpass Airstrip, Co. Westmeath, Ireland. The Pilot informed the Investigation that prior to departure, he obtained relevant weather information for the flight, which indicated strong winds for the Milltownpass area. The Pilot stated that while enroute he listened to the Dublin Airport (EIDW) ATIS[6] but was not unduly concerned by the weather reported. As the Pilot neared Milltownpass Airstrip, he closed his flight plan by radio with Dublin Flight Information Service (FIS).

The Pilot, who regularly operated to Milltownpass, completed an overhead join[7] procedure rather than flying a straight-in approach for Runway (RWY) 24. The aircraft flew on a south-westerly track to the north of the runway, it then turned onto a crosswind leg, downwind leg, base leg and eventually turned onto final approach (**Figure No. 1**). The Pilot stated that this was his preferred arrival procedure as it allowed him to assess the condition of the airstrip and to check for any obstacles which may have affected the safety of his approach and landing.

As the Pilot turned onto final approach, he noticed that the wind was stronger than expected and that the aircraft had drifted to the right of the extended centreline and was slightly above the ideal approach path. To regain the centreline and approach path, the Pilot said he performed a side slip manoeuvre[8] before crabbing the aircraft into wind during the latter stage of the approach.

[5] **VFR:** Visual Flight Rules.
[6] **ATIS:** Automatic Terminal Information Service. The provision of current, routine information to arriving and departing aircraft by means of continuous and repetitive broadcasts throughout the day or a specified portion of the day (ICAO).
[7] **Overhead Join:** A method that helps a pilot to integrate with any other aircraft, join the circuit, and land.
[8] **Side Slip Manoeuvre:** An out of balance flight condition which can be used to increase drag and steepen an approach.

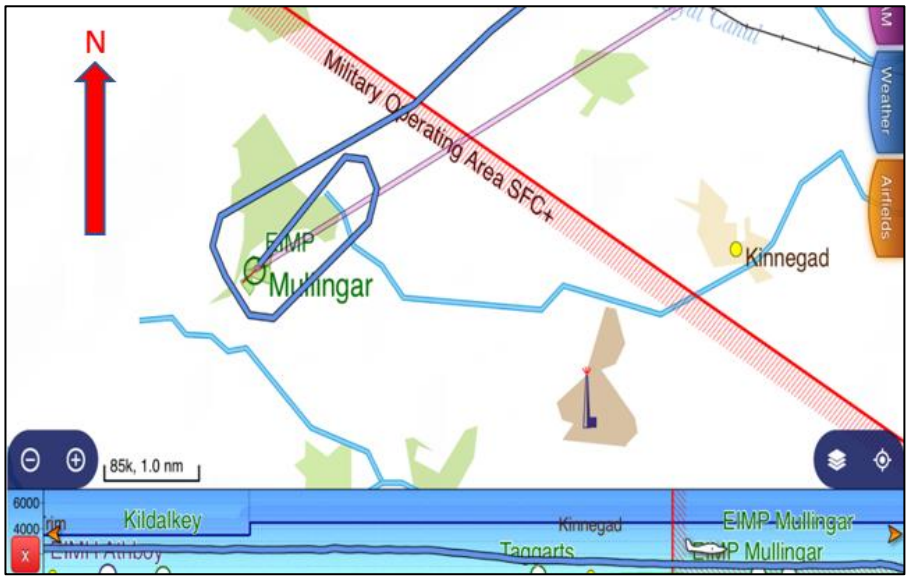



**Figure No. 1:** Aircraft approach to Milltownpass (as recorded by Pilot's navigation app)

The aircraft touched down to the right of the centreline approximately 105 m after the threshold of RWY 24. The Pilot informed the Investigation that during the landing roll, the aircraft departed the right-hand edge of the runway, and entered rough ground where its right wing struck a wooden post; and that the aircraft came to rest having rotated approximately 180 degrees from its original direction of travel. **Photo No. 1** shows the damage to the right wing and the final position of the aircraft which was approximately 261 m from the runway threshold. The Pilot, who was the sole occupant of the aircraft, was uninjured and he exited the aircraft unaided. There was no fire.


**Photo No. 1:** Final position of G-BHNO (image provided by the Pilot)

## 1.2 Interview with the Pilot

The Pilot informed the Investigation that he was familiar with the airstrip and had landed there on previous occasions. The Pilot stated that his usual flight plan was to fly to Abbeyshrule Aerodrome (EIAB)[9] first, refuel and then fly to Milltownpass Airstrip. On the day of the accident, he deviated from his usual way of doing things and filed a flight plan, with Milltownpass Airstrip as the destination. The Pilot said that upon closing the flight plan with Dublin FIS he became more aware of the time and that he *'needed to get certain things done'.* The Pilot stated that he had a business meeting to attend near the airstrip, which was due to take place upon his arrival, and he intended to be '*on the ground for only two hours'.* The Pilot's plan after the meeting was to fly to EIAB, refuel and return to EGBO because the tower at Wolverhampton/Halfpenny Green Airport *'closes at six'.*

The Pilot said that after completing his turn to final approach at Milltownpass Airstrip he became more aware of the wind strength because he had been blown quite a lot off the extended centreline. The Pilot advised that he had selected second stage of flap (25°) and his airspeed was indicating approximately 65 knots which '*was about right for the approach*'. The Pilot stated that he performed a sideslip manoeuvre to lose height and to regain the centreline but that he felt comfortable throughout the approach and was confident he was going *to 'touch down on the area I was now focused on'.*

The Pilot stated that the aircraft touched down to the right of the centreline, and that during the landing roll, '*a gust of wind hit the aircraft, veering the aircraft to the right.'* The Pilot recalled that the aircraft departed the runway to the right-hand side when its right wing struck a wooden post and the aircraft pivoted around by approximately 180 degrees from its original direction of travel. The Pilot said that as the aircraft came to rest it had a nose up attitude before settling again, which he believed may have damaged the tail of the aircraft. The Pilot shut down the engine and exited the aircraft. The Pilot informed the Investigation that he had been expected at the airstrip, but that no one was there immediately following the accident. He said that he then made a mobile phone call to an acquaintance who arrived at the accident site and was able to provide some assistance.

The Pilot noted that there was no windsock at the airstrip to indicate the strength and direction of the wind, but that he was comfortable with the approach and did not feel it necessary to perform a go around. The Pilot was initially uncertain of the maximum demonstrated crosswind of the aircraft but upon consulting the Pilot's Operating Handbook, he confirmed to the Investigation that this was 17 knots. In the Pilot's opinion, the airstrip would benefit with '*white markings down the sides*' which would have helped him '*be more visual with the edge'* of the runway. The Pilot also reported the surface condition of the runway on the day of the accident to be poor and wet.

The Pilot stated that his alternate airfield in the event of a diversion on the day was EIAB.

[9] **Abbeyshrule Aerodrome (EIAB):** A licenced aerodrome approximately 17 nautical miles north-west of Milltownpass Airstrip.

## 1.3 Damage to Aircraft

Following the accident and prior to notifying the AAIU, the aircraft was removed to another location on the airstrip. The AAIU inspected the aircraft at this location. The leading edge of the right wing sustained significant damage (**Photo No. 2**). The right wing had partially separated from the wing root (**Photo No. 3**). The anti-servo tab on the left elevator sustained significant crush damage (**Photo No. 4**). There was damage observed to the right trailing edge flap and adjacent fuselage due to the rearward movement of the right wing during the accident (**Photo No. 5**).

**Photo No. 2:** Damage to right wing

**Photo No. 3:** Damage at wing root

**Photo No. 4:** Damage to left anti-servo tab


**Photo No. 5:** Damage to flap and fuselage

## 1.4 Injuries to Persons

No injuries were reported to the Investigation.

## 1.5 Pilot Information

The Pilot held a non-expiring PPL (A) which was issued by the UK CAA on 17 August 2016. The licence contained a Single Engine Piston (Land) class rating which was valid until 30 November 2022. The Pilot held a Class 2 Medical Certificate which was valid until 14 April 2023. The Pilot's flying experience is outlined in **Table No. 1.**

| | |
|---|---|
| **Total all types:** | 360 hours |
| **Total on type:** | 250 hours |
| **Last 90 days:** | 22 hours |
| **Last 28 days:** | 6 hours |
| **Last 24 hours:** | Nil |

**Table No. 1:** Pilot's Flying Experience

## 1.6 Aircraft Information

The Piper PA-28-181 (Archer II) is a low wing, all metal aircraft, with a wingspan of 10.7 metres and a fixed tricycle type landing gear. It is powered by a Lycoming O-360-A4M reciprocating engine, driving a two-bladed Sensenich fixed pitch propeller. The aircraft's trailing edge flaps are manually operated by a lever in the cockpit. The flaps have three extended positions: 10°, 25° and 40°.

The aircraft has a maximum take off weight of 1,157 kgs with a maximum demonstrated crosswind[10] of 17 knots. In accordance with the Pilot's Operating Handbook (POH), this was placarded in the cockpit of the subject aircraft above and to the right of the airspeed indicator (**Figure No. 2**).

The Certificate of Airworthiness for the aircraft was issued by the CAA on 22 August 2008. The associated Airworthiness Review Certificate was valid until 16 June 2023.


**Figure No. 2:** Instrument panel of G-BHNO with placard

[10] **Maximum Demonstrated Crosswind:** Before an airplane is type certificated by the Federal Aviation Administration (FAA), it must be flight tested and meet certain requirements. Among these is the demonstration of being satisfactorily controllable with no exceptional degree of skill or alertness on the part of the pilot in 90° crosswinds up to a velocity equal to 0.2 VSO. This means a windspeed of two-tenths of the airplane's stalling speed with power off and landing gear/flaps down (FAA Airplane Flying Handbook).

## 1.7 Meteorological Information

*Met Éireann*, the Irish meteorological service, was asked to provide an aftercast of the weather conditions prevailing in the Milltownpass area on the day of the accident. Details from the report received are reproduced in **Table No. 2**.

| | |
|---|---|
| **Meteorological Situation:** | An area of low pressure centred approximately 150 Nautical Miles (NM) to the north-west of Erris Head brings a fresh to strong southerly flow across Ireland. |
| **Surface Wind:**<br>**Wind at 2,000 feet (ft):** | Southerly, 13-17 Knots (kt), gusting 18-25 kt<br>South-westerly, 25-30 kt |
| **Visibility:** | Generally, 30 km, falling to 12 km in showers |
| **Weather:** | Cloudy with showers |
| **Cloud:** | Broken (7/8$^{ths}$ oktas[11]) layered cloud with bases around 3,000-3,500 ft |
| **Surface Temperature/Dew Point:** | 17/11 degrees Celsius |
| **Mean Sea Level (MSL) Pressure:** | 1001 hectopascals (hPa) |
| **Freezing Level:** | 8,000 feet |
| **Other Comments:** | There had been persistent rain since the night before, breaking up into showers late in the morning of the 28$^{th}$.<br>2 mm of rain was recorded between 12:00 hrs and 13:00 hrs, with approximately 14 mm recorded since 19:00 hrs on the 27$^{th}$. |

**Table No. 2:** Meteorological aftercast for the Milltownpass area at the time of the accident

The meteorological information as provided to the Investigation was derived from a number of sources to give the best estimate of conditions for the Milltownpass area with a bias towards the most representative stations at Mullingar, Ballyhaise and Mount Dillon. Using the estimated wind data in the above table would give a possible crosswind for RWY 24 at Milltownpass Airstrip of approximately 11 to 15 kt, with gusts of 16 to 22 kt.

[11] **Okta:** Unit of cloud amount, expressed as number of eighths of the sky dome that is covered by clouds.

## 1.8 Airstrip Information

Milltownpass Airstrip is privately owned and is located six nautical miles south-east of Mullingar in Co. Westmeath, Ireland. Various flight guides describe the airstrip as having two runways which are designated 09/27 and 06/24. These guides are published with disclaimers which advise pilots that operating into airfields as described in these publications should be '*at your own risk'* and that they '*should be used as a guide only and should in no manner be taken as official work'.* RWY 24 in one guide is described as a gravel runway, 580 m in length. Another guide describes RWY 24 as being a grass runway, 580 m in length. The flight planning app as used by the Pilot describes the landing runway as a 670 m long grass runway with an orientation of 05/23.

Accurate measuring of RWY 24 in both length and width proved difficult for the Investigation as there were no runway markings and the edges were ill-defined. In addition, the surface was covered in loose stones/gravel, and there were weeds and other vegetation encroaching from both sides and ends of the runway (**Photo No. 6**). The Investigation located the approximate final position of the aircraft following the accident (**Photo No. 7**). A broken fence post was also found. The Investigation's site survey of the airstrip had difficulty locating the other runway, RWY 27, due to an abundance of foliage resulting in the runway being essentially overgrown.

**Photo No. 6:** View of RWY 24

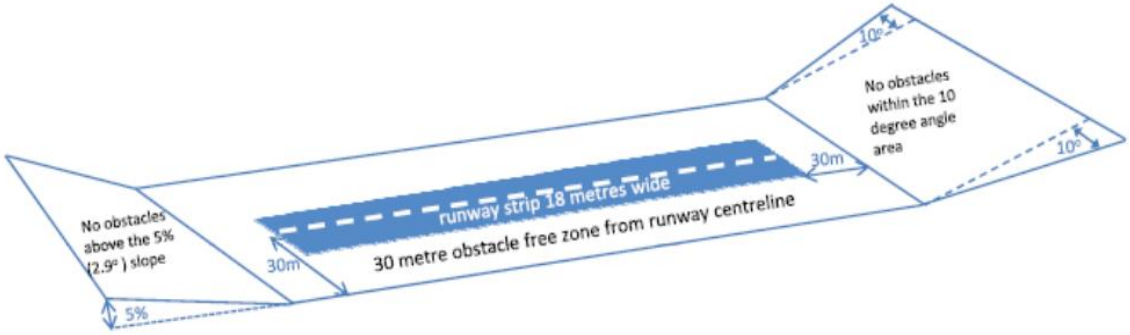

**Photo No. 7:** Approximate final position of G-BHNO

Milltownpass Airstrip is unlicensed and is therefore not subject to any regulatory oversight. The owner of the airstrip informed the Investigation that the windsock had been removed prior to the accident as it was unserviceable. Following the accident, the airstrip owner advised the Investigation that he closed the runway until such time as remedial works could be completed.

### 1.8.1 Guidance Material

The Irish Aviation Authority's '*Safety Promotion Leaflet',* AED 1, on '*Risk from Obstacles at Aerodromes'* discusses how airfield owners can mitigate the risks posed by obstacles in the vicinity of a runway. Obstacles by themselves may not be the primary cause of an accident; however, they may contribute to the severity of the outcome. The Leaflet, which makes reference to ten AAIU reports, states the following:

> *'Methods to Reduce the Risk:*
>
> *If you have an aerodrome:*
>
> • *Check you have a suitable obstacle free area. The following diagram provides guidelines. The check should be repeated regularly, at least once per year, to ensure tree growth, etc has not started to impinge into the obstacle free zone.*




*• Check the entire site adjacent to your established obstacle free zone and remove all solid objects where possible. Concrete and heavy timber posts, rocks, stone walls should be removed when possible to reduce the risk of collision.*

*• Where obstacles exist that cannot be removed ensure that these are well documented and all pilots are briefed prior to using the aerodrome.*

*• Try to engage with electricity and communication providers to relocate overhead wiring or, at least, have them more visible when they are in the flight path to and from your aerodrome.*

*• Keep runway surfaces reasonably level and firm. Unpaved surfaces should be regularly mown and inspected daily when in use.'*

### 1.9 Notification of Accidents

It is a requirement of SI No. 460 of 2009 that pilots notify the AAIU of any serious incidents or accidents as soon as practicable by the most rapid means available. Furthermore, Article 9 of Regulation (EU) No 996/2010 states that *'Any person involved who has knowledge of the occurrence of an accident or serious incident shall notify without delay the competent safety investigation authority of the State of Occurrence thereof'.* The AAIU was notified of this accident two days after it occurred.

The Pilot stated that he was unsure of the procedure for reporting an accident, as he was operating a UK-registered aircraft in Ireland. The UK's Air Accidents Investigation Branch (AAIB) provides pilots of UK-registered aircraft with guidance on who to contact if they have an accident or serious incident in a foreign country.

## 2. AAIU COMMENT

The Pilot was appropriately licensed for the flight and the aircraft's airworthiness certification was valid. The purpose of the flight was for the Pilot to attend a business meeting in the local area and the Pilot intended to be on the ground for two hours. After the meeting the Pilot's intention was to route to Abbeyshrule Aerodrome, refuel, and fly back to his home base of Wolverhampton/Halfpenny Green Airport before it closed for the evening.

The Pilot was experienced on the aircraft type and had landed at Milltownpass Airstrip on previous occasions. Prior to commencing the final approach, the Pilot conducted an overhead join procedure which he said allowed him to check for any obstructions and to observe the windsock. However, on this occasion the windsock had been removed for repair and the Pilot would not have been able to accurately assess the strength and direction of the wind.

RWY 24 at the airstrip was unmarked and its edges were ill-defined. This would have made it difficult for the Pilot to identify the runway centreline. In addition, the surface was covered in loose stones/gravel. Based on data from the meteorological aftercast, the wind at the time of the accident may have exceeded the maximum demonstrated crosswind of the aircraft, and this, combined with the condition of the runway, left little margin for error. The aircraft touched town in gusty conditions, veered off the runway and entered rough ground at the right-hand side of the runway. The Pilot reported that the aircraft's right wing struck a wooden post, and that the aircraft came to rest approximately 180 degrees from its original direction of travel. The extent of the damage to the aircraft suggests that the impact sequence was quite dynamic and involved significant forces. The Pilot was uninjured and notified the AAIU of the accident two days later, after the aircraft had been moved.

The airstrip was unlicensed, and therefore was not subject to regulatory oversight. Unlicensed airstrips are not required to meet a defined standard and conditions at such airstrips may vary widely. The IAA's Safety Promotion Leaflet, AED 1, provides helpful guidance to airstrip owners on how to mitigate the risks posed by obstacles in the vicinity of a runway. However, although the leaflet does not give guidance regarding aspects such as adequate surface conditions on non-grass runways, clear definition of runway thresholds and edges, or the presence of windsocks, these are obvious requirements. Following the accident, the airstrip owner informed the Investigation that he closed the runway until such time as remedial works could be completed.

There is no requirement for an airstrip to be attended, even when a flight is expected to arrive. In this accident, the airstrip was unattended at the time, but the Pilot, who was uninjured, was able to call for assistance using a mobile phone. However, this may not always be possible, and from a safety perspective, good practice would be to nominate a responsible individual to be in attendance upon arrival or be capable of proceeding to the airstrip if contact has not been made to confirm a safe arrival.

**- END -**

**In accordance with Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No. 996/2010, and Statutory Instrument No. 460 of 2009, Air Navigation (Notification and Investigation of Accidents, Serious Incidents and Incidents) Regulation, 2009, the sole purpose of this investigation is to prevent aviation accidents and serious incidents. It is not the purpose of any such investigation and the associated investigation report to apportion blame or liability.**

Produced by the Air Accident Investigation Unit

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