

FINAL REPORT

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Name of Operator:	Private.
Aircraft Make and Model	Piper PA28A 181 Archer III
Registration:	OY-PAW
Location:	Weston Aerodrome, Ireland
Date and Time (UTC):	22 May 2001, 14.30 hrs

SYNOPSIS

Following a flight from Denmark via the U.K, the aircraft made a high approach to Runway 25 at Weston and touched-down approximately 200 metres before the end of the runway. It failed to stop on the runway and struck a boundary hedge at the edge of airfield. There was substantial damage to aircraft but no injuries.

1. FACTUAL INFORMATION

1.1 History of the Flight

On arrival from the U.K, the aircraft was vectored by Dublin ATC along the valley of the River Liffey. When the pilot had Weston in sight, he closed the flight plan. Having observed a light wind from the North East, as indicated by the windsock on the airfield, he positioned for an approach to Runway 07 at Weston. At this point he established radio contact with the club-house at Weston. The pilot's recollection of this initial call was that he was advised to land on Runway 07. When he reported "Left base Runway 07" he was advised that he should land on Runway 25. He then positioned for an approach onto Runway 25. He flew a high approach, because of a housing estate in the approach path, and also because of some turbulence in this area. He then realised that he was somewhat too high, and that there was a tail wind of 5 to 10 kts, as indicated by the windsock located near the threshold of Runway 25. He pushed the nose down to get rid of the excess height, and maintained a speed of approx 80 kts. The pilot subsequently stated that he did not apply power to assist in the flare from this steep approach. Following the flare, the aircraft floated along the runway for a considerable distance. Finally the aircraft touched down less than 200 metres from the end of the runway. This was verified by tyre marks on the runway. In spite of heavy braking the aircraft failed to stop, and ran into a rough grass area at the end of the runway. After a run of approx 45 metres on the grass, along the extended centreline of the runway, the aircraft hit a wire fence and a hedge of low cut trees and bushes. The leading edges of both wings impacted on small trees in the hedge and this impact effectively stopped the aircraft. The aircraft stopped with the nose wheel in a deep ditch immediately beyond the hedge and the nose was within 1 metre of a solid stone wall.

The engine had stopped on the impact with the hedge and the pilot raised the flaps, turned off the fuel and power, and evacuated the aircraft with his passenger.

1.2 Injuries To Persons

Injuries	Crew	Passengers	Others
Fatal	0	0	-
Serious	0	0	-
Minor	0	0	-
None	1	1	-

There were no injuries. Both occupants were wearing a lap strap and a diagonal strap.

1.3 Damage To Aircraft.

The leading edges of both wings suffered substantial damage as a result of contact with the fence and small trees. There was also slight damage to the propeller and engine cowlings.

1.4 Other Damage

Nil.

1.5 Personnel Information

The pilot held a valid Private Pilots Licence.

Flying experience:	Total all types	450 hours
	Total on type	130 hours
	Last 90 days	40 hours
	Last 28 days	18 hours
	Last 24 hours	6 hours

1.6 Aircraft Information

The PA 28 is a low wing monoplane with tricycle undercarriage. There was no evidence of any pre-existing defect on the aircraft that might have had an influence on this accident. The aircraft had a valid Certificate of Airworthiness issued by the Danish Authorities.

The particular aircraft was manufactured in 2000 and carried the manufacturer's serial number 2843345.

1.7 Meteorological Information

At the time of the accident conditions were clear with good visibility. Local estimates indicated that there were light NE winds in the area, varying from 0 to 10 kts. Temperature was approx. 20° C. There is no wind speed and direction measuring equipment or recording system at Weston.

An aftercast provided by Met Eireann, The Irish Meteorological Service, stated:

General Situation: A large anticyclone anchored off the east coast of England maintained a slack, southerly airflow over the area. Tephigram analysis shows low level absolute instability, up to about 900 hPa.

Wind: At surface: 130-160/07-10 kts
At 2000ft : 18015kt

Weather: Nil

Cloud: FEW 2000 to 3000 ft

Temperature/Dew Point: 19/10 Celsius

MSL Pressure: 1024 hPa

1.8 Aids To Navigation

Not Applicable.

1.9 Communications

There is no control tower at Weston. The clubhouse provides advisory information on 122.4 MHz.

1.10 Aerodrome Information

Weston Aerodrome is located 8 NM West of Dublin City, 150 ft Above Mean Sea Level (AMSL). Runway 25/07 is the only tarmac runway, and is 890 metres long by 15 metres wide. There are also three grass runways. There is a windsock located to the right of Runway 25, approx 100 metres past the thresholds. Apart from other windsocks located about the airfield, there is no other equipment installed for measuring wind speed and direction.

A solid hedge is located approx 50 metres beyond the end of Runway 25, running at right angles to the runway. Immediately beyond the hedge is a deep ditch, the far side of which is lined by a stone wall. The club-house, where the radio is located, is situated South of the end of Runway 25, which is approximately 800 metres from the windsock near the threshold of Runway 25, on a bearing of approximately 230°T from this windsock. There is another windsock located directly in front of the club-house.

1.11 Flight Recorders

Not applicable. The Weston frequency is not recorded.

1.12 Wreckage And Impact Information.

The leading edges of the wings were substantially damaged, and indicated that the aircraft struck the hedge at a ground speed of the order of magnitude of 20 kts. The propeller and engine cowling were also damaged.

1.13 Medical and Pathological Information

Not Applicable.

1.14 Fire

There was no fire. The fuel tanks did not leak or rupture in the accident.

1.15 Survival Aspects

The use of diagonal straps may well have saved the occupants from injuries. There is only one exit from the PA 28, via a door located above the wing, on the right passenger side of the aircraft. Notwithstanding that the aircraft came to a stop in the hedge, the ability to open the cockpit door was not restricted by any portion of the hedge.

1.16 Tests And Research.

Nil.

1.17 Organisation And Management.

Nil.

1.18 Additional Information.

Due to the presence of a large area of housing on the approach to Runway 25, the management of the Aerodrome favour operations on this runway. This reduces noise complaints from the local residents arising from aircraft climbing out on reciprocal Runway 07. It is also considered to be a safety measure, as an engine failure on take-off on Runway 07 could result in an aircraft coming down into the residential area, whereas there are a number of large fields available if such an event occurred while taking-off on Runway 25.

In discussions with the pilot after the accident, he stated that he liked to maintain plenty of speed on approach, and also strove to have plenty of speed, approx. 70 kts, before climbing out or attempting a go-around. He also stated that this was his first visit to Weston, that his own preference was to land on Runway 07, and that he had initially set up an approach to this runway. He further added that he recognised that the final decision on runway selection was his, but as a stranger to the airfield he was influenced by the advice from the Aerodrome club-house.

1.19 Useful And Effective Investigation Techniques.

Nil.

2. ANALYSIS.

- 2.1** The final approach was too high, and was probably conducted at a speed at the high end of the approach range. In the pilot's attempt to get rid of the excess height, there was probably an increase in speed due to a steep approach angle. Because the flare from the steep approach was accomplished without power, it is probable that the flare was initiated at a higher than normal altitude. The combination of the foregoing, allied with a light tailwind, resulted in a long high-speed float down the runway. The net result was that the aircraft did not touch down until approximately 700 metres past the threshold. Given the high ground speed of the aircraft, it was impossible to stop the aircraft in the remaining runway distance of 200 metres. The pilot's predisposition towards a relatively high speed for a climb-out / go-around precluded this option being selected in the final stage of the landing.
- 2.2** The pilot allowed the advice from the aerodrome to overcome his own judgement with regard to runway direction selection. However, as a foreigner arriving for the first time at a strange airfield, he was unlikely to ignore the aerodrome advice.
- 2.3** The club-house, where the radio is located, is in a somewhat sheltered location. The only method available to access the wind speed is to estimate the angle at which the windsock is being blown from the vertical. At the time of the accident, both the windsock near the threshold of Runway 25 and the windsock in front of the club house were trailing in the general direction of the clubhouse. This would make estimation of the windsock angle, and subsequent deduction of the wind speed, problematical.
- 2.4** An anemometer would have permitted a more accurate wind speed assessment, and may have resulted in the selection of Runway 07.

3. CONCLUSIONS.

3.1 Findings:

- 3.1.1** The aircraft had a valid Certificate of Airworthiness.
- 3.1.2** There is no evidence of mechanical failure being a factor in this accident.
- 3.1.3** The pilot was properly licensed.
- 3.1.4** The height of the final approach was excessive.
- 3.1.5** The combination of excess approach height, high airspeed and tailwind resulted in a late touchdown, with inadequate runway left to stop the aircraft.
- 3.1.6** The operational runway advised by the aerodrome was not optimal for the prevailing conditions.
- 3.1.7** The decision to advise that Runway 25 was the active runway may have been based on inaccurate determination of the wind speed.

3.1.8 The presence of housing development on the approach to Runway 25 was a factor in deciding to advise the aircraft that this runway was the active runway at the time of the accident.

3.2 **Causes**

3.2.1 **Primary Cause**

The pilot failed to recognise, sufficiently early in the approach, that he was too high and too far down the runway, and that he should have initiated a go-around prior to touchdown.

3.2.2 **Secondary Causes**

3.2.2.1 The absence of an accurate system for measuring the wind speed and direction at the airfield.

3.2.2.2 The use of a down-wind runway as the active runway.

4. **SAFETY RECOMMENDATIONS**

4.1 Weston Aerodrome should consider the installation of an anemometer to facilitate accurate determination of wind speed and direction. **(SR 32 of 2001)**