FINAL REPORT

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In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Air Accidents, Mr. Jurgen Whyte, appointed himself as the Investigator-in-Charge to carry out a Field Investigation into this Accident and prepare a Synoptic Report.

Aircraft Type and Registration:	Luscombe 8A, N2837K
No. and Type of Engines:	1 x Continental A65
Aircraft Serial Number:	5564
Year of Manufacture:	1947
Date and Time (UTC):	7 May 2006 @ 17.55 hrs
Location:	Navan Airfield
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - Nil Passengers - Nil
Nature of Damage:	Damaged beyond economic repair
Commander's Licence:	PPL
Commander's Details:	Male, aged 42 years
Commander's Flying Experience:	432 hours of which 69 hours were on type
Notification:	The owner of Navan Airfield reported this accident to the AAIU
Information Source:	Accident Report Form submitted by Pilot. AAIU Field Investigation

SYNOPSIS

While making an approach to a private grass airfield in Navan, the Pilot experienced a 5 mph drop in his normal approach airspeed and the aircraft drifted left of centerline. The nose was lowered and full power was applied, however, this action failed to recover the situation. The aircraft struck a wooden post, touched down in a field, and then impacted into a ditch, which was located left abeam the threshold of the easterly runway (RWY 09). Both occupants self evacuated from the aircraft without injury. There was no fire.

FINAL REPORT

1. FACTUAL INFORMATION

1.1 History of the Flight

The aircraft, a Luscombe 8A, took off from Navan Airfield earlier in the day (15.00 hrs) with the Pilot and one front seat passenger onboard and approximately 10.5 US gals of fuel for a VFR flight to Weston Aerodrome (EIWT). The enroute portion of the flight was uneventful and the aircraft landed at EIWT without incident at 15.40 hrs.

Following a lunch break and without refuelling, the aircraft took-off again at 17.15 hrs with the Pilot and passenger onboard for the return leg to Navan. During the easterly approach to the grass runway at Navan the following sequence of events, as described by the Pilot, occurred.

At approximately 400 metres from threshold, indicated airspeed (IAS) was 55 mph. At approximately 200 ft above the ground, having just selected the Carb Heat to cold, (in case of a go-around), he noticed that he was losing height faster than normal glide approach, airspeed dropped to 50 mph and the aircraft drifted left of centerline. The Pilot lowered the nose and applied full power, while attempting to turn back right towards the approach centerline. Airspeed did not increase, control inputs had no effect on regaining the approach centerline and up elevator (*backward pressure on stick*) had no effect on slowing the descent rate. The aircraft struck a fence post on the left-hand side of the approach path. The Pilot leveled the wings just before touching down in the field, left abeam the approach path to the runway. The aircraft bounced and struck a second wooden post, before entering a deep ditch left of the runway threshold. Both the Pilot and the passenger evacuated the aircraft without injury. There was no fire.

The Pilot attributed this event to the fact that during his final approach his speed was approximately 5 mph IAS lower than normal, when he entered what was not severe or sudden, but sustained windshear. A further 5 mph IAS was lost before any action was taken. The Pilot identified that he had left himself with insufficient altitude and airspeed to overcome such conditions as encountered.

1.2 Site Examination

On arrival at the accident site the aircraft was found in a near vertical nose down condition, in a deep and vegetated ditch. (**See Sketch 1**)

A line of wooden posts separated the approach path from an adjacent field on the left hand side. The posts were located approximately 10 metres in from the lateral boundary. The 6th post, which was creosoted, exhibited significant fresh impact damage from its top to 0.75 metres from the ground (**Photo No. 1**). A first ground impact mark was found approximately 20 metres further on from the first post just back from the deep vegetated ditch. A second post, which was located at right angles to, and along the edge of a ditch line also exhibited impact damage in the form of a vertical slice down through the post. The ditch line posts were not creosoted (**Photo No. 2**).

1.3 Damage to the Aircraft

The fuselage failed at the aft bulkhead during the accident sequence. The empennage remained connected to the fuselage solely by the elevator and the rudder control cables. These cables cut into the lower rear fuselage skin forward of the failure point for about 0.6 metres as a result of the empennage hanging from the fuselage (**Photo No. 3**).

The left side of the rear fuselage suffered approximately 0.5 metres indentation damage just forward of the tailplane. The left hand side of the leading edge of the tailplane (fuselage junction) was also severely indented.

The outer sections of both wings suffered extensive damage, particularly the left wing.

The left main undercarriage strut collapsed rearwards. Soil markings on the left main tyre/wheel indicate that the initial impact was to a depth just above the wheel axle.

The propeller had suffered impact damage. The outer 100mm of one blade had separated in forward bending. The other blade has also bent forward. This blade was stained with earth. This evidence indicates that the propeller was rotating and under significant power when it impacted the ditch.

Splinters of creosoted wood was found under a protruding screw head, which secured an inspection panel located on the left side of the fuselage immediately forward of the leading edge.

The aircraft was damaged beyond economic repair in this accident.

1.4 Meteorological Information

Met Éireann, the Irish meteorological service provided the following weather information:

Meteorological Situation: A low pressure system centred at approx. 53N 12W resulted in a generally unstable easterly flow across Ireland. The associated frontal systems were lying through the UK and did not impact on the weather in the Navan region at this time.

Meteorological conditions at time of accident: The following summarises the meteorological conditions at the time the accident occurred - interpolated from archived synoptic, RADAR and satellite data.

Surface Wind: 090/10 kt

Gradient Wind: 120/15 kt

Cloud: FEW/SCT 2,200 ft BKN 6,000 ft. Cloud type likely to be Cumulus and Stratocumulus

Visibility: 30+ km

Weather: NIL

Air Temperatures: 14 deg C

Dew point temperature: 5 deg C

Freezing Level: Circa 4,000 ft

Forecaster Comment

At the time of the accident the surface wind across the region was well established and not varying to any great degree in either direction or velocity. There was no gust recorded at any of the Synoptic stations upstream of the region in question at, or near, the time of the accident. The available archived tephigrams do not show any significant vertical wind shear in the lowest levels of the atmosphere. Also, radar and satellite imagery show no evidence of any Cumulonimbus or shower activity close to the Navan area. Taking the above factors into account, it is unlikely that any significant wind shear existed in the region at this time.

1.5 Aircraft Information

The aircraft, a Luscombe 8A, is an all-metal, two place, high wing monoplane, powered by a Continental A65-8 four cylinder horizontally-opposed air cooled 65 horsepower engine. The wings are all metal, with stressed skin, and a single strut. The engine is carburettor equipped with dual ignition and primer. The propeller is a 2 blade wooden propeller with fixed pitch.

Gross Weight:	1,260 Pounds
Empty Weight:	750 Pounds
Engine Rating:	65 Horse Power @ 2300 rpm
Power Loading:	19.4 pounds per Horse Power
Maximum Speed:	115 mph
Cruising Speed:	105 mph
Stalling Speed:	45 mph (T.I.A.S.)
Approach Speed:	60 mph (T.I.A.S.)
Take-off Run (Minimum):	625 feet
Landing Roll (Minimum):	500 feet
Rate of Climb:	800 feet per minute (Sea Level)
Speed for Best Rate of Climb:	72 mph
Fuel Capacity:	14 US Gallons @ 4.5 Gals per hour
Service Ceiling:	15,000 ft

1.6 Tests and Research

The engine was ground run subsequent to the accident, in order to ascertain that it was working correctly. 100 mm of one propeller blade tip had separated in the accident. A corresponding amount was sawn off the other blade, in order to balance the propeller for test purposes. The left wing was supported, due to the loss of the left main undercarriage. The engine was primed and started successfully after a couple of swings. The engine ran well and evenly. The throttle was advanced to 2,000 RPM and no abnormality was noted.

With the aircraft in a damaged state, the throttle was not fully advanced to max RPM (2,300 RPM) due to concerns that the aircraft may become uncontrollable. However, it was noted that at 2,000 RPM the throttle was well short of the full RPM setting, and the Investigation is of the opinion that maximum engine power could have been achieved in the test if it had been possible to adequately secure the aircraft. The conclusion of this test is that no defect on power loss was apparent.

The control lines showed no loss of control continuity.

2. ANALYSIS

The damage suffered to the aircraft is consistent with the aircraft crossing the creosoted line of fence posts diagonally from the intended approach path. The aircraft impacted the first fence post causing damage to the left rear side of the fuselage and then the post struck the left support rod of the left side tailplane. This impact was sufficient to severely weaken the empennage attachment to the fuselage. The aircraft then impacted heavily into the adjacent ploughed field on its left hand main undercarriage leg, which then collapsed rearward. Just prior to bouncing into the deep ditch, the propeller made a vertical slice through the non-creosoted fence post along the line of the ditch. On coming to its final resting position the empennage peeled back from the fuselage and remained hanging from the structure through the elevator and rudder cable connections.

The Pilot identified that he had lost speed on his approach and drifted left of centre line. The application of power failed to arrest the rate of descent and controllability was lost. The Pilot also indicated that he believed that the aircraft was subjected to, not severe, but sustained windshear, which reduced his speed further.

The impact damage on the propeller indicates that the engine was delivering significant power at the first point of propeller impact. No technical fault was found with the engine that would preclude achieving full power on demand. The control runs showed no loss of control continuity.

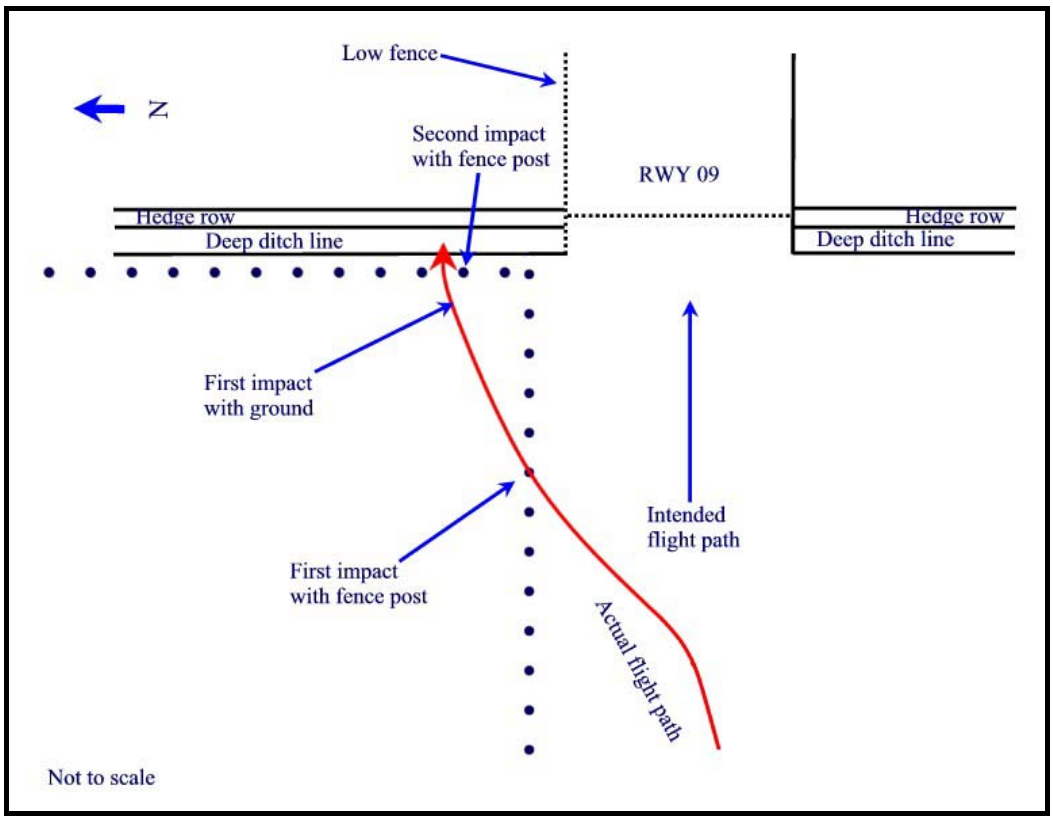
In general, the weather conditions were benign and consideration of the aftercast as provided by Met Éireann indicates that it was unlikely that any significant windshear existed in the region at the time of the accident.

The flight manual gives an approach speed of 60 mph and a stall speed of 45 mph. The reported loss of airspeed on approach would appear not to have been reacted to promptly enough. As the aircraft started to drift left, the speed decayed further, bringing the aircraft very close to its stalling speed. The fact that the aircraft struck the first post and traveled through the air for a further 20 metres before ground impact, indicates that the aircraft was in a nose up “mushed” attitude and probably “hanging” on the propeller. The final application of back pressure on the elevator would have further exasperated the situation. Once the aircraft was on the wrong side of the power curve, the engine power was insufficient to arrest the rate of descent.

Appropriate action in this case, following initial loss of approach speed, would have been to quickly apply full power, while simultaneously pitching the nose forward to acquire an accelerated increase in airspeed. It would appear that the delayed reaction to loss of initial airspeed provided insufficient remaining height to effect an appropriate recovery action and control was lost.

3. SAFETY RECOMMENDATIONS

This Report does not sustain any Safety Recommendations.



Sketch No.1: Impact site map

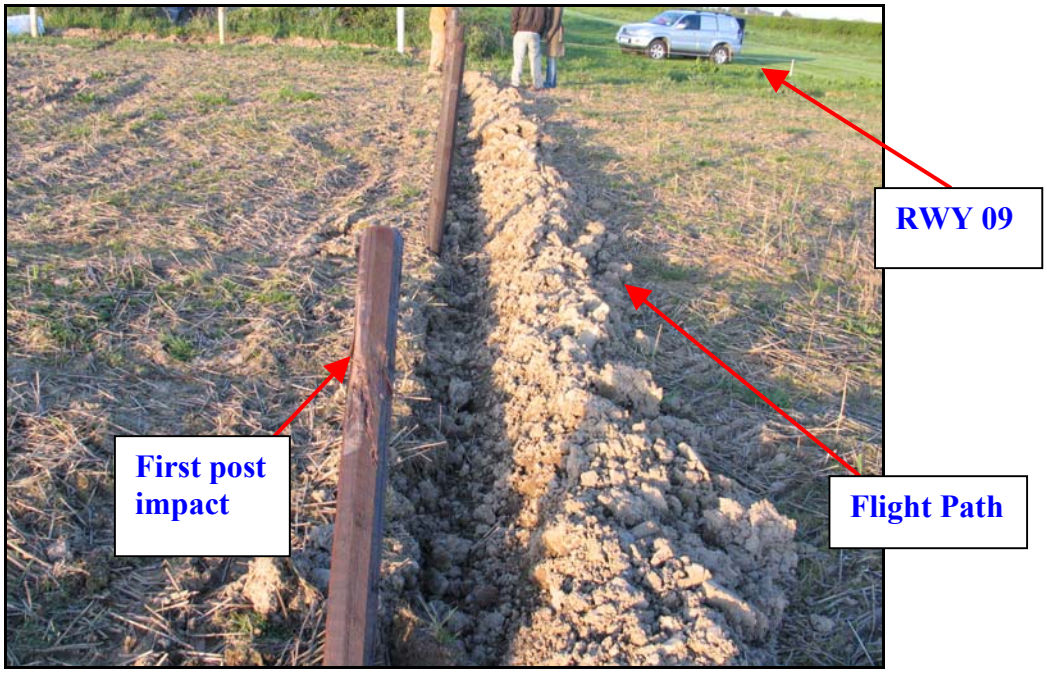


Photo No. 1: First impacted fence post

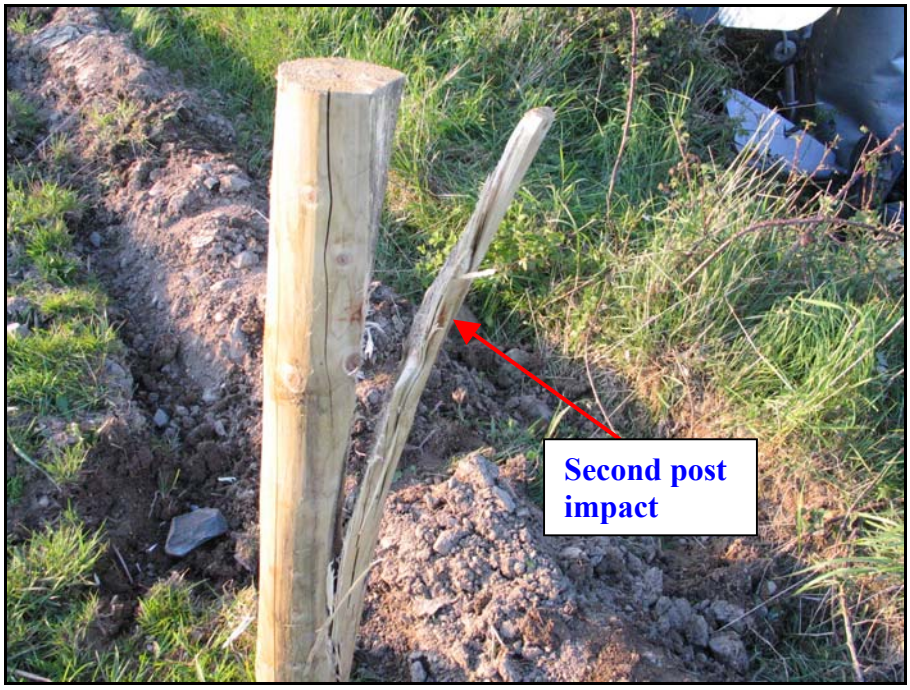


Photo No. 2: Second fence post impacted by propeller

Photo No. 3: Resting position of N2837K

Luscombe 8A

- END -