FINAL REPORT

AAIU Synoptic Report No: 2009-019
State File No: IRL00900972
AAIU File No: 2007/0107
Published: 15/10/09

In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Accidents, on 19 December 2007, appointed Mr. John Hughes as the Investigator-in-Charge to carry out a Field Investigation into this Accident and prepare a Synoptic Report.

Aircraft Type and Registration:	Lambada UFM-11, EI-DGP
No. and Type of Engines:	1 x Jabiru 2200A
Aircraft Serial Number:	15/11
Year of Manufacture:	2003
Date and Time (UTC):	19 December 2007 @ 11.45 hrs
Location:	Abbeyshrule Airfield, Co. Longford
Type of Flight:	Private
Persons on Board:	Crew - One Passengers - Nil
Injuries:	Crew - Nil Passengers - Nil
Nature of Damage:	Nose gear assembly collapsed and propeller tips damaged
Commander's Licence:	SPL (Student Pilot Licence)
Commander's Details:	Male, aged 41 years
Commander's Flying Experience:	45 hours, all of which were on Lambada and Samba types
Notification:	Operator of aircraft
Information Source:	AAIU Investigation

SYNOPSIS

The student lost control of the aircraft after landing and departed to the side of the tarmacadam runway into adjacent rough ground. There were no injuries.

FINAL REPORT

1. FACTUAL INFORMATION

1.1 History of the Flight

The Student Pilot said that after touchdown on runway (RWY) 10 and while rolling, he felt the aircraft veering to the right. His response was to apply hard left rudder. The aircraft turned to the left and continued off the runway on to the rough grass, where it stopped about 6 metres from the runway edge. The Student Pilot turned off the fuel and ignition and exited the aircraft in the normal way. There was no fire and no injuries were reported. The weather was sunny, and wind conditions were calm (100/01 kts).

1.2. Damage to Aircraft

The steering fork of the nose wheel bent rearwards following wheel impact with rough terrain. This allowed the spat, complete with wheel, to rub off the grass as the aircraft rolled to a halt. One of the wooden propeller blades contacted the grass/ground following the landing and was severely damaged.

Photo No. 1: Damage to aircraft EI-DGP following its runway excursion

1.3 Aircraft Information

This side-by-side Czech ultra light aircraft conforms to JAR-VLA (Very Light Aircraft). The wings have ailerons and double slotted fowler flaps. Control of the rudder is through cables, while rods, attached to the rudder pedals, actuate the nose wheel. The 'T' tail has a fixed horizontal stabilizer and full span elevator that is operated by a push rod. Attached to the elevator is an electrically driven trim tab.

The main wheels have hydraulic disc brakes and all three wheels are fitted with spats as standard. Details are as follows:

Wingspan:	11.80 metres
Length:	6.60 metres
Wing Area:	10.80 square metres
Maximum Take-off Weight (MTOW)	450 kg
Cruising Speed:	75 kt @ 65% Power
Stalling Speed:	30 kt
Glide Ratio:	26:1

The nose wheel is held in a fork unit, similar to that on a bicycle. The fork tube is attached to the steering tube through an internal 35 mm long sleeve, which is plug welded to the steering tube at three circumferential locations. A second internal tube (stiffening) extends up the steering tube for about 100 mm, and is held in place by an adhesive. The designed weak point appears to be where the 35 mm internal sleeve meets the 100 mm internal stiffening tube. This construction facilitates fracture at this location, in the event of possible overload, in order to reduce damage to the front structure and composite skin.

In this particular event however, fracture of the fork tube did not take place and the lower fork bent rearwards with the nose wheel attached **(Photo No. 1)**.

2. ANALYSIS

The Student was relatively inexperienced on type at his stage of training. Weather conditions were good with calm conditions. At higher speeds, the flight controls become more sensitive to control inputs. Where this becomes particularly crucial is during the landing rollout phase. A pilot must make measured and timely inputs while still maintaining directional control and ensuring that he/she does not make any inappropriate contact with the runway.

In this particular case, the wind conditions were calm, and as such, controllability of the aircraft should not have been directly influenced by an external force. Therefore, the likelihood exists that the Pilot, in response to an initial deviation to the right during the landing roll, over compensated with a rudder control input to the left and directional control was lost. The damage occurred after the aircraft departed the paved surface, imparting abnormal loads to the nose steering fork.

3. CONCLUSIONS

(a) Findings

1. The Student Pilot was properly licensed.

2. While the Pilot was making a correctional control input during the landing roll, directional control was lost and the aircraft departed the runway

3. The aircraft suffered damage as a result of the nose steering fork being subjected to abnormal loads.

(b) Probable Cause

Over correction for an initial deviation during the landing roll resulted in a loss of directional control and departure from the paved surface.

4. SAFETY RECOMMENDATIONS

This Investigation does not sustain any Safety Recommendations.

- END -