



# National Transportation Safety Board Aviation Accident Data Summary

<b>Location:</b>	Chuckey, TN	<b>Accident Number:</b>	ERA13FA017
<b>Date &amp; Time:</b>	10/11/2012, 1350 EDT	<b>Registration:</b>	N290AL
<b>Aircraft:</b>	ARION LIGHTNING	<b>Injuries:</b>	1 Serious, 1 Minor
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

## Analysis

The experimental amateur-built airplane accelerated normally during the takeoff roll for the Phase 1 test flight before pitching up sharply and beginning a slow climb to about 50 to 60 feet above the ground. The wings rocked back and forth as it drifted off the left side of the runway. Witnesses reported that the airplane appeared out of control and off center. The airplane was heading toward trees and a residence when the pilot-rated passenger, who was on board to record information during the test flight, took control of the airplane, lowered the nose, and turned away from obstructions; however, the nose abruptly dropped and the airplane struck the ground. Postaccident examination of the airplane did not reveal any preimpact malfunctions or failures that would have precluded normal operation. The flaps were found in the fully extended position and, given reports of the airplane's behavior after the takeoff, were likely fully extended during takeoff and at the time of impact. The owner/builder reported that the normal takeoff procedure called for a 10-degree flap setting and that the airplane did not have a pretakeoff checklist, which would be developed during the flight testing. An estimated weight and balance calculation for the accident flight placed the airplane about 30 pounds over its published maximum gross weight and about a 1/2 inch from its aft center of gravity limit; however, the maximum gross weight is about 75 pounds below the general specifications listed by the kit manufacturer. The owner and pilot-rated passenger stated that they did not discuss or perform weight and balance calculations before the accident flight.

The airplane had been operated for about 15 hours since new and since its most recent condition inspection, which was performed about 1 month before the accident. The pilot's total flight experience in make and model consisted of about 3 hours with a flight instructor and about 4 hours of solo flight experience. Given the lack of a pretakeoff checklist and the pilot's minimal flight experience in the airplane make and model, it is likely that he began the takeoff with flaps fully extended, which combined with the airplane's high gross weight and near-limit aft center of gravity, resulted in the loss of airplane control.

## Flight Events

Prior to flight - Preflight or dispatch event  
Takeoff - Loss of control in flight  
Uncontrolled descent - Collision with terr/obj (non-CFIT)

## Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate preflight planning, which resulted in an attempted takeoff at a high gross weight, near the limit of its aft center of gravity, and with the airplane incorrectly configured with fully extended flaps. Contributing to the accident was the lack of a pretakeoff checklist and the pilot's lack

of total flight experience in make and model.

## Findings

Aircraft-Aircraft systems-Flight control system-TE flap control system-Incorrect use/operation - C  
Personnel issues-Task performance-Planning/preparation-Weight/balance calculations-Pilot - C  
Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C  
Personnel issues-Task performance-Use of equip/info-Use of checklist-Not specified - F  
Personnel issues-Experience/knowledge-Experience/qualifications-Total experience w/ equipment-  
Pilot - F

## Pilot Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	67
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Instrument Rating(s):</b>	Airplane; Helicopter
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Instructor Rating(s):</b>	Airplane Single-engine
<b>Flight Time:</b>	(Estimated) 4800 hours (Total, all aircraft), 7 hours (Total, this make and model), 7 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Pilot-Rated Passenger Information

<b>Certificate:</b>	Airline Transport; Flight Instructor; Commercial; Flight Engineer	<b>Age:</b>	49
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Instrument Rating(s):</b>	Airplane
<b>Other Aircraft Rating(s):</b>	None	<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine
<b>Flight Time:</b>	17100 hours (Total, all aircraft), 0 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	ARION	<b>Registration:</b>	N290AL
<b>Model/Series:</b>	LIGHTNING	<b>Engines:</b>	1 Reciprocating
<b>Operator:</b>	On file	<b>Engine Manufacturer:</b>	Jabiru
<b>Operating Certificate(s) Held:</b>	None	<b>Engine Model/Series:</b>	3300A
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	TRI, 1519 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	None	Wind Speed/Gusts, Direction:	3 knots / , Variable
Temperature:	18° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Chuckey, TN (04TN)	Destination:	Chuckey, TN (04TN)

## Airport Information

Airport:	Hensley Airpark (04TN)	Runway Surface Type:	Asphalt
Runway Used:	01	Runway Surface Condition:	Dry
Runway Length/Width:	2900 ft / 50 ft		

## Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:	36.183333, -82.678889 (est)		

## Administrative Information

Investigator In Charge (IIC):	Luke Schiada	Adopted Date:	03/24/2014
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=85309">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=85309</a>		

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