



# Aviation Investigation Final Report

<b>Location:</b>	Cambridge, Ohio	<b>Accident Number:</b>	IAD04LA019
<b>Date &amp; Time:</b>	May 1, 2004, 11:30 Local	<b>Registration:</b>	N626EA
<b>Aircraft:</b>	Krotje VM-1 Esqual	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot attempted a takeoff in the homebuilt airplane. During the takeoff roll, the airplane veered off the left side of the runway, struck runway lights, and went into a creek. A post-accident examination of the airplane revealed that it was equipped with a free-castering nose wheel and motorcycle brakes. It was found that the left brake dragged due to a lack of clearance between the brake pad and brake rotor. The lack of clearance was attributable to the design of the brakes and their adaptation from a motorcycle to an airplane.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain directional control. A factor was the inadequate brake system installed on the airplane.

## Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (C) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND
2. (F) LANDING GEAR,NORMAL BRAKE SYSTEM - INADEQUATE

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Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

3. OBJECT - RUNWAY LIGHT

4. TERRAIN CONDITION - WATER

## Factual Information

On May 1, 2004, about 1130 eastern daylight time, a homebuilt VM-1 Esqual, N626EA, was substantially damaged during an attempted takeoff from Cambridge Municipal Airport (CDI), Cambridge, Ohio. The certificated private pilot received minor injuries. Visual meteorological conditions prevailed, and no flight plan had been filed for the local personal flight, conducted under 14 CFR Part 91.

According to the pilot, he attempted to take off from runway 22. After he set the throttle to takeoff power, the airplane "started pulling abruptly to the left." The pilot applied "strong right rudder," in an effort to counteract the turning, but to no avail. The airplane then veered off the left side of the runway, struck runway lights, and went into a creek.

A Federal Aviation Administration (FAA) inspector examined the airplane after the accident and submitted a Service Difficulty Report (SDR). According to the report, the airplane was equipped with a free-castering nose landing gear and was configured to use motorcycle brakes on the main landing gear. A post-accident examination of the brakes revealed that the right brake operated normally; however, the left brake dragged due to a lack of clearance between the brake pad and the brake rotor. The lack of clearance was attributable to the design of the brakes and their adaptation from a motorcycle to an airplane.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	68, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	January 15, 2004
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	April 27, 2003
<b>Flight Time:</b>	519 hours (Total, all aircraft), 9 hours (Total, this make and model), 519 hours (Pilot In Command, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Krotje	<b>Registration:</b>	N626EA
<b>Model/Series:</b>	VM-1 Esqual	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	E180032
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	March 13, 2004 Annual	<b>Certified Max Gross Wt.:</b>	1200 lbs
<b>Time Since Last Inspection:</b>	14.6 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	138.4 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Jabiru
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	3300
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	120 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	ZZV,900 ft msl	<b>Distance from Accident Site:</b>	15 Nautical Miles
<b>Observation Time:</b>	11:42 Local	<b>Direction from Accident Site:</b>	270°
<b>Lowest Cloud Condition:</b>	Scattered / 2300 ft AGL	<b>Visibility</b>	9 miles
<b>Lowest Ceiling:</b>	Broken / 3100 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	200°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	21°C / 16°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Cambridge, OH (CDI)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	New Philadelphi, OH (PHD)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Cambridge Municipal Airport CDI	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	799 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	22	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4298 ft / 75 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	39.974998,-81.577774

## Administrative Information

**Investigator In Charge (IIC):** Cox, Paul

**Additional Participating Persons:** Lee Thiel; FAA/FSDO; Columbus, OH

**Original Publish Date:** December 3, 2004

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.ntsb.gov/Docket?ProjectID=59166>

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