



# National Transportation Safety Board Aviation Accident Factual Report

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<b>Location:</b>	Gladwin, MI	<b>Accident Number:</b>	CHI05LA163
<b>Date &amp; Time:</b>	07/04/2005, 1850 EDT	<b>Registration:</b>	N481KB
<b>Aircraft:</b>	Becker RAF 2000	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Instructional		

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## HISTORY OF FLIGHT

On July 4, 2005, at 1850 eastern daylight time, a Becker RAF 2000 amateur built gyrocopter, N481KB, collided with the terrain following a loss of control while in the traffic pattern at the Gladwin Airport (GDW), Gladwin, Michigan. The commercial rated pilot was fatally injured. The gyrocopter was substantially damaged. The 14 Code of Federal Regulations Part 91 solo instructional flight was operating in visual meteorological conditions without a flight plan. The local flight originated from GDW shortly before the accident.

A witness to the accident reported the pilot had made three takeoffs and landings prior to the accident. Following the third landing, the pilot had a radio conversation with his instructor during which the instructor asked the pilot if the gyrocopter was out of trim. The pilot stated that it was trimmed. According to the witness, the pilot took off again and was making the turn from crosswind to downwind when the accident occurred. He stated when he looked at the gyrocopter it was in a turn and when it looked back it was descending. The witness stated he did not notice any change in the sound of the gyrocopter prior to the accident.

Another witness reported that he was on the south side of the airport when the accident occurred. The witness stated he first saw the gyrocopter taxiing east on the runway at a high speed. He stated that a few minutes later, he saw the gyrocopter taking off to the west. He stated the gyrocopter became airborne and stayed over the runway at an altitude of approximately 10 feet for a while prior to climbing out. The witness stated that once airborne the gyrocopter made a wide traffic pattern which was about one mile away from the runway. He lost sight of the gyrocopter due to the trees and saw it again as it was preparing to land on runway 27. He stated the gyrocopter landed. About 15 minutes later, he saw it taking off again to the west. He stated this time the gyrocopter made a traffic pattern that was about half as wide as the first time. He stated the gyrocopter passed directly over him at an altitude of about 50 feet above ground level. Again he temporarily lost sight of the gyrocopter when it approached the east end of the runway. He stated that he next saw the gyrocopter as it was landing and that this time the pilot made a touch and go landing. The witness stated that this time the gyrocopter made a traffic pattern that was closer than the last one. He stated the

gyrocopter was between his position and the runway, and that it flew over the pond at an altitude of about 150 feet. He stated the gyrocopter then entered a 25 to 30 degree nose down attitude which it maintained for 3 to 4 seconds prior to entering a 45 degree nose down attitude. The witness stated the gyrocopter lost about one-third of its altitude prior to the main rotor blades folding up and over the gyrocopter, possibly striking the propeller blades. He stated the nose of the gyrocopter then rose and it flipped over backwards. He stated the gyrocopter spun backward and sideways until it impacted the ground.

#### PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with single-engine land and instrument airplane ratings. The pilot was receiving instruction toward obtaining a rotorcraft - gyrocopter rating. The accident reportedly occurred during the pilot's first solo flight in the gyrocopter.

The pilot's most recent medical certificate was issued on April 27, 2004. The medical certificate contained the limitation, "Holder shall wear lenses that correct for distant vision and posses glasses that correct for near vision and intermediate vision." According to Federal Aviation Administration (FAA) records, the pilot reported having 3,103 hours of flight experience as of the date of his most recent medical examination. The pilot's logbooks were not located during the investigation.

#### AIRCRAFT INFORMATION

The two-place, amateur-built gyrocopter was powered by a Subaru EJ22, 130 horsepower engine. The tricycle gear gyrocopter was equipped two main rotor blades and a three bladed propeller. FAA records indicate an Experimental Airworthiness Certificate was issued for N481KB on March 4, 2005. The pilot was also the builder of N481KB.

Logbooks or other records were not located for the gyrocopter. The National Transportation Safety Board Pilot/Operator Aircraft Accident Form 6120.1/2 was completed by the pilot's son. On this form he indicated that the gyrocopter had accumulated more then 40 hours of total time.

The pilot's flight instructor reported to an FAA inspector that he flew with the pilot in N481KB on the day prior to the accident and he adjusted the rotor pitch to accommodate the weight of two people in the gyrocopter.

#### METEOROLOGICAL INFORMATION

The closest weather reporting station was located at the Mount Pleasant Municipal Airport (MOP), Mount Pleasant, Michigan. MOP is located approximately 24 miles south-southwest of GDW. The MOP weather conditions listed at 1855 were: Wind - 260 degrees at 3 knots; Visibility - 10 statute miles; Sky Condition - 2,500 broken; Temperature - 24 degrees Celsius; Dew Point - 21 degrees Celsius; Altimeter Setting - 29.92 inches of Mercury.

## WRECKAGE AND IMPACT INFORMATION

The FAA conducted an on-scene examination of the accident site. The gyrocopter came to rest inverted in an open field located on the south side of runway 27. The initial impact marks were next to the main wreckage. Visible on the ground was a curved slash mark which matched the length of a main rotor blade.

Both main rotor blades were intact. One main rotor blade was bent beginning at the root of the blade and the other was bent downward beginning about one-third the blade length from the root. One of the blades had impact marks on the bottom of it. This marks matched up with the location of the propeller. The outboard section of the propeller blades was damaged and/or missing.

Continuity was established to all of the flight controls. Fuel was found in the fuel filter and fuel lines. A large area of vegetation blight was visible at the main wreckage site. Engine continuity was established. The induction air filter was clean.

## MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was conducted on the pilot at the Hall Funeral Home in Gladwin, Michigan, on July 6, 2005.

Toxicological tests on the pilot were conducted by the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma. Negative results were reported for all tests performed.

## ADDITIONAL INFORMATION

The FAA was a party to the investigation.

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	56, 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>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	03/01/2004
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	3100 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Becker	Registration:	N481KB
Model/Series:	RAF 2000	Aircraft Category:	Gyroplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	H2-98-9-390
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	02/01/2005,	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Subaru
ELT:	Not installed	Engine Model/Series:	EJ22
Registered Owner:	Kenneth A. Becker	Rated Power:	130 hp
Operator:	Kenneth A. Becker	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	MOP, 755 ft msl	Distance from Accident Site:	24 Nautical Miles
Observation Time:	1855 EDT	Direction from Accident Site:	205°
Lowest Cloud Condition:		Visibility	10 Miles
Lowest Ceiling:	Broken / 2500 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.92 inches Hg	Temperature/Dew Point:	24° C / 21° C
Precipitation and Obscuration:			
Departure Point:	Gladwin, MI (GDW)	Type of Flight Plan Filed:	None
Destination:	Gladwin, MI (GDW)	Type of Clearance:	None
Departure Time:	EDT	Type of Airspace:	

## Airport Information

Airport:	Zettel Memorial (GDW)	Runway Surface Type:	Asphalt
Airport Elevation:		Runway Surface Condition:	Dry
Runway Used:	27	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Traffic Pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	43.970556, -84.475000

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Pamela S Sullivan
<b>Additional Participating Persons:</b>	John Miller; FAA; Grand Rapids, MI
<b>Investigation Docket:</b>	NTSB accident and incident docket serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .