



Aviation Investigation Final Report

Location:	Chandler, Arizona	Accident Number:	WPR09CA198
Date & Time:	April 16, 2009, 08:22 Local	Registration:	N333ST
Aircraft:	BETTER BURN LLC/STARTUBE DIV EXEC 162F	Aircraft Damage:	Substantial
Defining Event:	Dynamic rollover	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor said the student was practicing a stable hover at 2 to 3 feet altitude, when the helicopter descended with a slight drift to the right. The student said he made a correction and thought the helicopter might touch the ground and lift up again. When the right skid contacted the taxiway, the right rear skid shoe stuck in the asphalt surface and the aircraft rolled right, pivoting on the right skid. The flight instructor immediately bottomed the collective and pushed the cyclic left; however, the aircraft continued to roll onto its right side. Subsequently, the tail boom was bent up and partially separated, the windscreen structure was broken, the main rotor blades were damaged, and the fuselage was wrinkled. The flight instructor said the helicopter belonged to Rotorway, the kit manufacturer, and was used for factory flight training. The company had equipped the skids with prototype skid shoes approximately 10 inches in length that were flat and extended laterally beyond the skids. When the aircraft touched the ground with lateral movement, the aft right skid shoe dug into the asphalt causing the aircraft to roll right. The flight instructor said that after this accident, the company modified the skid shoe design by rounding the shoes to conform to the landing skids.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flight instructor's inadequate supervision of the flight and delay in taking remedial action to prevent the helicopter from touching down while drifting. Contributing to the accident was the design of the skid shoes.

Findings

Aircraft	(general) - Design
Personnel issues	Delayed action - Instructor/check pilot
Personnel issues	Task monitoring/vigilance - Instructor/check pilot

Factual Information

History of Flight

Landing-flare/touchdown	Dynamic rollover (Defining event)
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Flight instructor Information

Certificate:	Commercial; Flight instructor	Age:	28, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	February 6, 2006
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	February 15, 2008
Flight Time:	592 hours (Total, all aircraft), 270 hours (Total, this make and model), 507 hours (Pilot In Command, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Private	Age:	63, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	December 8, 2008
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 100 hours (Total, all aircraft), 6 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	BETTER BURN LLC/STARTUBE DIV	Registration:	N333ST
Model/Series:	EXEC 162F	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Experimental (Special)	Serial Number:	6755
Landing Gear Type:	High skid	Seats:	2
Date/Type of Last Inspection:	March 24, 2009 Condition	Certified Max Gross Wt.:	1500 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	495 Hrs at time of accident	Engine Manufacturer:	Rotorway
ELT:	Installed, not activated	Engine Model/Series:	162F
Registered Owner:	COBB INTERNATIONAL DBA	Rated Power:	100
Operator:	RotorWay International	Operating Certificate(s) Held:	None
Operator Does Business As:	RotorWay International	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	CHD,1243 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	07:47 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	30 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.19 inches Hg	Temperature/Dew Point:	11°C / -3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Chandler, AZ (P19)	Type of Flight Plan Filed:	Unknown
Destination:	Chandler, AZ (P19)	Type of Clearance:	None
Departure Time:	07:10 Local	Type of Airspace:	

Airport Information

Airport:	Chandler Municipal Arpt CHD	Runway Surface Type:	
Airport Elevation:	1243 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None	Latitude, Longitude:	33.274444,-111.804168

Administrative Information

Investigator In Charge (IIC):	Struhsaker, James
Additional Participating Persons:	Jack Major; Federal Aviation Administration; Scottsdale, AZ
Original Publish Date:	September 30, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=73669

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).