Aviation Investigation Final Report

Location:	HAZELHURST, Mississippi	**Accident Number:**	MIA00LA092
Date & Time:	February 16, 2000, 16:00 Local	**Registration:**	N460AK
Aircraft:	Kitchens REVOLUTION MINI 500B	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

At an altitude of about 200 feet agl the pilot attempted a practice auto rotation into a field. According to the pilot he lowered the collective, at a forward speed of 60 mph. He then reduced the throttle. He said, '...I think I was already in trouble when I began the auto rotation from such a low altitude...[and] I also don't thing that I had the collective all the way down because...the rotor rpms apparently began to bleed down without my noticing it...at about 50 feet agl I flared...then leveled and started pulling collective. The helicopter started violently shaking...which...indicates that the rotors were trying to stall from too low rpms...I couldn't stop my decent...I don't think I powered back up with the throttle...I hit the ground fairly violently...the helicopter...roll[ed] onto its left side...and the helicopter finally came to a stop about 30 yards from the point of initial impact.' Examination of the wreckage revealed no mechanical discrepancies. According the FAA's report, the pilot '...failed to perform the autorotation correctly and impacted the earth.'

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 control of the helicopter during a practice autorotation, by allowing the rotor rpm to become inadequate to cushion the touchdown, which resulted in a hard landing, and subsequent roll over.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. AUTOROTATION - INITIATED - PILOT IN COMMAND
2. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
3. (C) ROTOR RPM - INADEQUATE - PILOT IN COMMAND

Occurrence #2: ROLL OVER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Factual Information

On February 16, 2000, about 1600 central standard time, a homebuilt Kitchens Revolution Mini 500B helicopter, N460AK, owned by a private individual impacted with the ground during an autorotation near Hazelhurst, Mississippi. Visual meteorological conditions prevailed at the time, and no flight plan was filed for the 14 CFR Part 91 personal flight. The helicopter was substantially damaged. The private-rated pilot reported serious injuries. The flight had originated from a private helicopter pad at 1530.

After flying locally for awhile the pilot attempted a "quick stop" maneuver. He said, after completion of the quick stop he climbed to an altitude of about 400 feet above ground level (agl). He stated that he, "...turned west...[and then] turned towards home...at this point I had descended to about 200 feet agl...flew past the power line right of way and was approaching a large rye grass field and decided to attempt a practice auto rotation down into the field. As I flew over the field I lowered the collective and checked my forward speed at about 60 mph. I then reduced the throttle setting to get the rpm needles to split. I think I was already in trouble when I began the auto rotation from such a low altitude. I am not sure but I also don't think that I had the collective all the way down because after reducing throttle the rotor rpms apparently began to bleed down without my noticing it. I was concentrating my attention outside the helicopter at this time and not paying enough attention to the gauges. At this point things are a little fuzzy as far as my memory is concerned because things started happening pretty fast. At about 50 feet agl I flared...then leveled and started pulling collective. The helicopter started violently shaking...which I now know indicates that the rotors were trying to stall from too low rpms. I knew at this point that I couldn't stop my decent...I don't think I powered back up with the throttle...I hit the ground fairly violently...left landing gear collapsed...the helicopter...roll[ed] onto its left side...and the helicopter finally came to a stop about 30 yards from the point of initial impact."

The FAA inspected the wreckage and did not find any mechanical discrepancies. According the FAA's report, "...pilot was performing practice auto rotation. He failed to perform the autorotation correctly and impacted the earth."

Pilot Information

Certificate:	Private	**Age:**	50,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Center
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	May 25, 1998
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1685 hours (Total, all aircraft), 52 hours (Total, this make and model), 1544 hours (Pilot In Command, all aircraft), 37 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Kitchens	**Registration:**	N460AK
Model/Series:	REVOLUTION MINI 500B REVOLUTION	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	460
Landing Gear Type:	Skid	**Seats:**	1
Date/Type of Last Inspection:	Continuous airworthiness	**Certified Max Gross Wt.:**	836 lbs
Time Since Last Inspection:	52 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	52 Hrs	**Engine Manufacturer:**	Rotax
ELT:	Not installed	**Engine Model/Series:**	582
Registered Owner:	ALAN KITCHENS	**Rated Power:**	68 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	JAN ,346 ft msl	**Distance from Accident Site:**	30 Nautical Miles
Observation Time:	15:54 Local	**Direction from Accident Site:**	360°
Lowest Cloud Condition:	Scattered / 4200 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 5500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	40°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	23°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	15:30 Local	**Type of Airspace:**	

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:	350 ft msl	**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Simulated forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	31.860683,-90.390197(est)

Administrative Information

Investigator In Charge (IIC):	Yurman, Alan
Additional Participating Persons:	DOUGLAS SMILEY; JACKSON , MS
Original Publish Date:	December 4, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=48638