Aviation Investigation Final Report

Location:	Asheville, North Carolina	**Accident Number:**	ERA12LA362
Date & Time:	May 24, 2012, 15:03 Local	**Registration:**	N7505Y
Aircraft:	Schweizer 269C	**Aircraft Damage:**	Substantial
Defining Event:	Miscellaneous/other	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The pilot was demonstrating a run-on landing during a flight review. The pilot conducted the approach for landing about 40 knots, and touched down left of the runway centerline on both skids. As he lowered the collective, the helicopter's right center skid shoe contacted a runway centerline light, which sheared off the right skid and its support arms. The pilot raised the collective, raised the helicopter to a hover, and turned toward the taxiway. Shortly after, the engine and rotor rpm began to drop, and the pilot opened the throttle and lowered the collective, setting the helicopter onto the left skid. The helicopter rolled over and came to rest on its right side, resulting in substantial damage to the main rotor blades. According to a representative from the helicopter's type certificate holder, the skid shoes installed on the make and model of the accident helicopter at the time of manufacture were comprised of a single piece of steel that conformed tightly to the skid. The skid shoes observed on the accident helicopter were constructed from a flat metal plate attached to the skid by two brackets, resulting in a small gap between the skid shoe and the skid, which would have allowed the skid shoe to become caught on raised objects on the ground. Review of both the helicopter's maintenance logbook and FAA airworthiness records did not reveal any entries relating to replacement of the skid shoes.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The use of an aftermarket skid shoe, which resulted in the skid shoe becoming caught on a runway centerline light during the run-on landing.

Findings

Aircraft	Aux gear (tail/rotorcrft skid) - Incorrect service/maintenance

Factual Information

History of Flight

Landing-flare/touchdown	Miscellaneous/other (Defining event)
Landing-flare/touchdown	Part(s) separation from AC
Landing-flare/touchdown	Roll over

On May 24, 2012, at 1503 eastern daylight time, a Schweizer 269C, N7505Y, sustained substantial damage during a practice run-on landing at Asheville Regional Airport (AVL), Asheville, North Carolina. The certificated flight instructor (CFI) and private pilot receiving instruction were not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the local instructional flight, which was operated under the provisions of Title 14 Code of Federal Regulations Part 91.

According to the pilot receiving instruction, who was also the owner of the helicopter, the purpose of the flight was to conduct a flight review. Approximately 50 minutes into the flight, the CFI asked the pilot to demonstrate a run-on landing to runway 16. The pilot conducted the approach for landing at about 40 knots and touched down left of the runway centerline on both skids. As he lowered the collective, the helicopter's right center skid shoe contacted a runway centerline light, shearing off the right skid and its support arms.

The pilot raised the collective, picked the helicopter up to a hover, and turned towards the taxiway in order to land. Shortly after, the engine and rotor RPM began to drop, and the pilot opened the throttle and lowered the collective, setting the helicopter onto the left skid. The helicopter rolled over and came to rest on its right side, resulting in substantial damage to the main rotor blades.

A postaccident examination by the pilot revealed that, during the right skid's impact with the centerline light, the front landing gear crossbeam was pushed aft, crimping the fuel supply line.

The owner held a private pilot certificate with a rotorcraft-helicopter rating. He reported 290 hours of total flight time, of which 118 hours were in the accident helicopter make and model. His most recent Federal Aviation Administration (FAA) third-class medical certificate was issued on May 23, 2012.

According to FAA records, the helicopter was manufactured in 1988 and was equipped with a Lycoming HIO-360, 190-horsepower reciprocating engine. Its most recent annual inspection was conducted on June 30, 2012. At the time of the accident, the helicopter had accumulated 1,716 total flight hours.

According to a representative from Sikorsky Aircraft Corporation, all skid shoes installed on

the Schweizer 269 helicopters during production were comprised of a single piece of steel which conformed tightly to the skid. Examination of photographs revealed that the skid shoes installed on the accident helicopter were constructed from a flat metal plate attached to the skid by two brackets, resulting in a small gap between the skid shoe and the skid. The Sikorsky representative said that the skid shoes observed were not representative of those installed or sold as replacements by the manufacturer.

Review of both the helicopter's maintenance logbook and FAA airworthiness records did not reveal any entries relating to replacement of the skid shoes.

Postaccident examination of the runway centerline lights by an FAA inspector did not reveal any anomalies with the placement or orientation of the lights.

Pilot Information

Certificate:	Private	**Age:**	57,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**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:**	May 23, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 28, 2012
Flight Time:	290 hours (Total, all aircraft), 118 hours (Total, this make and model), 118 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schweizer	**Registration:**	N7505Y
Model/Series:	269C	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	S1300
Landing Gear Type:	Skid	**Seats:**	3
Date/Type of Last Inspection:	June 30, 2011 Annual	**Certified Max Gross Wt.:**	2050 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1716 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	HIO-360 SER
Registered Owner:	WOLF TREE AVIATION LLC	**Rated Power:**	190 Horsepower
Operator:	WOLF TREE AVIATION LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	AVL,2165 ft msl	**Distance from Accident Site:**	
Observation Time:	14:54 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 5500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots / 15 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	26°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Asheville, NC (AVL)	**Type of Flight Plan Filed:**	None
Destination:	Asheville, NC (AVL)	**Type of Clearance:**	
Departure Time:	14:10 Local	**Type of Airspace:**	

Airport Information

Airport:	Asheville Regional Airport AVL	**Runway Surface Type:**	Asphalt
Airport Elevation:	2165 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	16	**IFR Approach:**	None
Runway Length/Width:	8001 ft / 150 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	35.436111,-82.541946

Administrative Information

Investigator In Charge (IIC):	Violette, Allison
Additional Participating Persons:	Greg Small; FAA/FSDO; Charlotte, NC
Original Publish Date:	April 10, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83744