Aviation Investigation Final Report

Location:	Wasco, California	**Accident Number:**	WPR15LA168
Date & Time:	May 27, 2015, 08:15 Local	**Registration:**	N138HA
Aircraft:	Hiller UH 12E	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The truck operator, who was assisting with an agricultural application operation, reported that the pilot of the helicopter had just finished spraying a small field. The helicopter landed and was serviced with fuel and water to flush the spray system. The pilot departed the immediate area, flying about 15 ft above the field. Shortly thereafter, the truck operator saw a plume of black smoke about 1/4 mile away. He drove toward the fire and saw the helicopter engulfed in flames. There were no witnesses to the accident.

Postaccident examination of the wreckage revealed that the helicopter initially impacted the field in a right-skid-low attitude. There were no anomalies observed that would have precluded normal operation. The reason for the impact with terrain could not be determined based on the available information.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

An in-flight impact with terrain for reasons that could not be determined based on available evidence.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Maneuvering-low-alt flying	Unknown or undetermined (Defining event)

On May 27, 2015 about 0815 Pacific daylight time, a Hiller UH-12E, N138HA, impacted an onion field during agricultural application operations near Wasco, California. The pilot was fatally injured, and the helicopter was destroyed. The helicopter was registered to and operated by Slikker Flying Service, Inc., under the provisions of 14 *Code of Federal Regulations* Part 137 as an agricultural flight. Visual meteorological conditions prevailed in the area, and no flight plan was filed. The flight originated from a refueling truck about 0813.

The truck operator reported that the pilot had just finished spraying a small field. The helicopter was filled with fuel and about 30-40 gallons of water to clean out the spray system. The pilot took off and departed the immediate area about 15 ft above the field. The truck operator cleaned the fuel/spray truck and was getting into the truck when he observed a plume of black smoke about ¼ mile away over a field crest. He drove toward the fire and observed the helicopter engulfed in flames.

Pilot Information

Certificate:	Commercial	**Age:**	51,Male
Airplane Rating(s):	None	**Seat Occupied:**	Center
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	February 18, 2015
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	May 19, 2014
Flight Time:	1479 hours (Total, all aircraft), 905 hours (Total, this make and model)		

The pilot held a commercial pilot certificate with ratings for rotorcraft-helicopter and instrument helicopter, and a Federal Aviation Administration second-class medical certificate dated February 18, 2015, with no limitations. The pilot's logbook was not recovered. During the pilot's last medical examination, he reported 1,136.2 total hours of flight experience, 277 of which were accrued in the previous 6 months. The pilot was hired by the operator in February 2014.

The pilot initially survived the accident but succumbed to his injuries about one week later. No autopsy or toxicology testing was performed.

Aircraft and Owner/Operator Information

Aircraft Make:	Hiller	**Registration:**	N138HA
Model/Series:	UH 12E	**Aircraft Category:**	Helicopter
Year of Manufacture:	1976	**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	HA3038
Landing Gear Type:	N/A; High skid	**Seats:**	3
Date/Type of Last Inspection:	March 28, 2015 100 hour	**Certified Max Gross Wt.:**	3100 lbs
Time Since Last Inspection:	71 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	9235 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Not installed	**Engine Model/Series:**	VO-540-C2A
Registered Owner:	SLIKKER FLYING SERVICE INC	**Rated Power:**	305 Horsepower
Operator:	SLIKKER FLYING SERVICE INC	**Operating Certificate(s) Held:**	Agricultural aircraft (137)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BFL,510 ft msl	**Distance from Accident Site:**	24 Nautical Miles
Observation Time:	07:54 Local	**Direction from Accident Site:**	134°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.96 inches Hg	**Temperature/Dew Point:**	18°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wasco, CA	**Type of Flight Plan Filed:**	None
Destination:	Wasco, CA	**Type of Clearance:**	None
Departure Time:	08:14 Local	**Type of Airspace:**	

The 0754, automated weather observation at Bakersfield Kern County Airport (BFL), located about 25 nautical miles southeast of the accident site, included wind from 290° at 3 knots, visibility 10 statute miles, clear skies, temperature 18°C, dew point 8°C, and an altimeter setting of 29.97 inches of mercury.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	35.609165,-119.436386(est)

The helicopter impacted the onion field in a right-skid-low attitude. The field was disturbed between the first point of impact and the main wreckage. Throughout this area were bearings and portions of the tail boom and windscreen. The helicopter came to rest on its right side. The cabin area was destroyed and sustained heavy thermal damage. The tail boom was fracture-separated about mid-span and was found partially underneath the main wreckage.

The helicopter's main cabin was mostly consumed by the postcrash fire; however, the majority of the airframe remained intact. The cyclic, collective, and pedals were all found loose within the main wreckage; all exhibited signs of heat distress. The left side of the spray boom was fracture-separated in an aft direction. The tail boom was fracture-separated about mid-span, consistent with main rotor blade contact.

Control continuity from the cabin controls to the main rotor system was established. There was no evidence of binding or restrictions on the intact portions of the control linkages. The control linkages located underneath the seats and behind the cabin firewall exhibited breaks and evidence of heat distress. The observed fracture surfaces that were not consumed by the postcrash fire exhibited signatures consistent with overload.

Both main rotor blades remained attached to the main rotor hub. Both blades were deformed opposite the direction of rotation. The tips of both blades were fracture-separated and were not located.

The angled tail rotor drive shaft remained connected to the main transmission tail output flange, but it was separated at the aft end. The shaft and shaft housing were deformed about 90° to the left. Separated, deformed, and heavily fragmented pieces of the tail rotor drive shaft exhibited signatures consistent with overload. The aft portion of the tail rotor drive shaft remained attached to the severed aft tail boom structure and was connected to the tail rotor gearbox; when rotated, the tail rotor blades rotated normally.

The tail rotor blades remained installed at the tail rotor hub. The first blade exhibited a fracture at its leading edge near the root end of the blade and was deformed in the opposite direction of normal rotation. The second blade exhibited downward, chordwise bending near its inboard end.

The main transmission and engine remained mounted to the airframe. The main rotor mast exhibited evidence of contact with the main rotor hub.

The spark plugs were removed from the engine and exhibited normal operating signatures and evidence of sooting. The rocker covers were removed and there was no evidence of heat distress. The dual

carburetor was removed from the engine and disassembled. There was no evidence of blockage. The interior of the right carburetor was dry, and the floats exhibited cracks. The interior of the left carburetor was wet with possible corrosion byproducts. Both magnetos were removed from the engine and rotated freely. The fuel tank was ruptured and contained no fuel. The fuel screen did not exhibit evidence of blockage or contamination.

Administrative Information

Investigator In Charge (IIC):	Link, Samantha
Additional Participating Persons:	Michael Coberly; Federal Aviation Administration; Fresno, CA
Original Publish Date:	July 20, 2017
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=91243