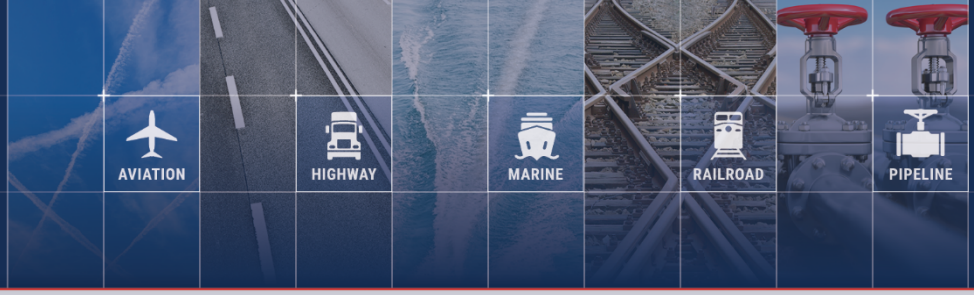

Aviation Investigation Factual Report

Location:	Grass Valley, California	**Accident Number:**	WPR15TA002
Date & Time:	October 4, 2014, 13:43 Local	**Registration:**	N700PQ
Aircraft:	ROCKWELL INTERNATIONAL 690B	**Aircraft Damage:**	Substantial
Defining Event:	Abrupt maneuver	**Injuries:**	3 None
Flight Conducted Under:	Public aircraft		

Factual Information

HISTORY OF FLIGHT

On October 4, 2014, at 1343 Pacific daylight time, a Rockwell International 690B airplane, N700PQ, departed the runway surface and impacted medium sized boulders, and came to rest in a drainage area at the Nevada County Air Park (GOO), Grass Valley, California. The airplane was registered to Rogers Helicopters, Inc. and operated under an exclusive use contract to the United States Forest Service (USFS) as a public aircraft. The pilot and two USFS passengers were not injured. The airplane sustained substantial damage to the fuselage undercarriage. The local area flight departed GOO at 0953 in support of the King Fire. Visual meteorological conditions prevailed, and a company flight plan had been filed.

The flight was designated as an Air Attack flight for the King Fire; a pilot and two Air Attack Group Supervisors (ATGS) were onboard. The mission flight was uneventful, and after transition with another crew and aircraft, the accident airplane returned to base. Upon landing, the pilot reported that the airplane floated and landed slightly long. He reduced the power setting to flight idle, and then moved the thrust levers to beta (reverse). On the landing roll out, the pilot adjusted levers for less reverse thrust, and indicated that he would not be able to make his normal exit turnoff. He knew he needed to slow down in order to make the next turnoff. He applied full reverse again; the airplane made a 'violent swerve' to the left, and departed the runway. The pilot stated that it was not even 5 seconds between the first time he pulled full reverse to the second time he pulled full reverse. The pilot applied right rudder and brake to return the airplane to the runway; however, the airplane continued to exit the runway surface into the infield where it impacted several medium-sized boulders, and came to rest upright in a drainage area.

The front-seated passenger had flown with the pilot on five previous missions. On the accident flight, the mission was briefed. The first part of the flight, he was seated in the back so he could watch the other passenger function as ATGS. A switch was then made so that he could complete some GPS proficiency training. During the return to the airport, he was seated in the front. During the approach, he noted that the temperature was in the upper 80's, and the gauges were normal; no lights were illuminated, and no audible warnings sounded. The pilot made the same approach that the passenger had witnessed on the previous five missions. The airplane landed on the centerline of the runway; the pilot reversed the throttle, and it felt like they were being pulled to the left. The pilot tried to keep the airplane on the runway. The airplane came to a stop off the edge of the runway.

The rear-seated passenger had flown with the pilot for the past 3 years. The mission was briefed, and they departed shortly thereafter. For the first part of the flight, he was seated in the front, so that the rear-seated passenger could observe his actions. Following the aerial supervision transition with another aircraft, they flew toward the north, which allowed him to change seats with the rear-seated passenger. Garmin GPS training was completed and they returned to Grass Valley.

The approach and landing were consistent with previous missions that he had flown on with the pilot. About 3-4 seconds after landing, the airplane began to drift to the left of the runway. He watched the

pilot attempt to make corrections to the airplane to remain on the runway. The passenger stated that he recalled seeing the sloped, uneven terrain, and structures approaching the left side of the airplane. The airplane came to a stop in the dirt, the pilot shut down the airplane, and they exited the airplane.

PERSONNEL INFORMATION

The 73-year old pilot held an Airline Transport Pilot certificate with ratings for airplane single-engine land and sea, multiengine land, and instrument airplane. The pilot was issued a class 2 medical certificate on April 13, 2014, with the limitation that he must have available glasses for near vision. His last flight review was conducted on May 20, 2014. The pilot reported his total flight time as 26,520 hours with 550 hours in the accident make and model.

AIRCRAFT INFORMATION

The airplane was a Rockwell International; N700PQ, manufactured in 1977. It was powered by two Garrett TPE-331-5-251 turbo prop engines. The engines were equipped with Hartzell propellers. According to the operator, the airplane was maintained under an Approved Inspection Program (AAIP). The last inspection was signed off and the airplane was returned to service on October 3, 2014, with an airframe total time of 8,625.1 hours.

Both engines were manufactured in 1977. Engine number 1, serial number P-06769 had a recorded total time of 8,338.6 hours, with 1,050.4 hours since the last inspection and 2,932.8 hours since overhaul. Engine number 2, serial number P-06923 had a total time of 8,338.4 hours, with 1,050.4 hours since the last inspection, and 292.8 hours since overhaul.

AIRPORT INFORMATION

The Airport Facility Directory, Southwest, for GOO, indicated that runway 07 was 4,351 feet long by 75 feet wide. The runway surface was asphalt. The airport elevation was 3,154 feet.

METEOROLOGICAL INFORMATION

Recorded weather at 1340 for GOO indicated clear weather conditions with visibility 10 miles; temperature 84 degrees Fahrenheit; altimeter 30.15 inches of mercury, relative humidity at 15 percent; wind from the west-southwest at 08 knots, and a density altitude calculated as 5,269 feet.

TEST AND RESEARCH

The airplane was inspected with structural damage identified to the undercarriage.

According to a representative from Honeywell, there should have been no reasons that reverse could not have been selected multiple times; unless the governor was not adjusted properly. Upon landing with speed levers at high rpm, there should not have been a lag in the engine when placed into reverse again. The representative stated that in the engine maintenance manual were procedures that pertained to governor checks and adjustment procedures, and that the governor settings had to be checked before they were removed to verify their setting. The USFS representative reported that the governor settings were normal; however, they did find a loose fuel control rod end for the left engine.

The USFS representative reported that normal touchdown for runway 07 is 1,000 feet down the runway. According to USFS calculations, the accident airplane landed between 1,500-1,800 feet from the threshold, which left a maximum of 2,850 feet of runway remaining with 302 feet of stop-way useable for the landing rollout.

An examination of the airframe, engine, and related systems revealed no anomalies that would have precluded normal operation.

Pilot Information

Certificate:	Airline transport	**Age:**	73,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	April 13, 2014
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	May 20, 2014
Flight Time:	(Estimated) 26520 hours (Total, all aircraft), 550 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROCKWELL INTERNATIONAL	**Registration:**	N700PQ
Model/Series:	690B	**Aircraft Category:**	Airplane
Year of Manufacture:	1977	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	11389
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:	October 3, 2014 AAIP	**Certified Max Gross Wt.:**	10324 lbs
Time Since Last Inspection:	1050 Hrs	**Engines:**	2 Turbo prop
Airframe Total Time:	8625.1 Hrs as of last inspection	**Engine Manufacturer:**	Garrett
ELT:	Installed, not activated	**Engine Model/Series:**	TPE-331-5-251
Registered Owner:	ROGERS HELICOPTERS INC	**Rated Power:**	717 Horsepower
Operator:	United States Forest Service	**Operating Certificate(s) Held:**	Commuter air carrier (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GOO,3154 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	13:40 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots / None	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.14 inches Hg	**Temperature/Dew Point:**	29°C / 0°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	GRASS VALLEY, CA (GOO)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Grass Valley, CA (GOO)	**Type of Clearance:**	None
Departure Time:	09:43 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	NEVADA COUNTY AIR PARK GOO	**Runway Surface Type:**	Asphalt
Airport Elevation:	3154 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	07	**IFR Approach:**	None
Runway Length/Width:	4351 ft / 75 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	39.224166,-121.003051(est)

Administrative Information

Investigator In Charge (IIC):	Cornejo, Tealeye
Additional Participating Persons:	Gregory L Michael; Federal Aviation Administration; Sacramento, CA Yolanda Saldana; United States Forest Service; Sacramento, CA
Report Date:	September 20, 2016
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=90218