		NTSB ID: WPR13LA290		Aircraft Registration Number: N34CT	
		Occurrence Date: 06/25/2013		Most Critical Injury: Minor	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Casa Grande	State AZ	Zip Code 85222	Local Time 0650	Time Zone MST	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer MCDONNELL DOUGLAS HELICOPTER		Model/Series 369E		Type of Aircraft Helicopter	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>*** Note: NTSB investigators may not have traveled in support of this investigation and used data provided by various sources to prepare this aircraft accident report. ***</p> <p>On June 25, 2013, about 0650 mountain standard time, a McDonnell Douglas 369E helicopter, N34CT, sustained substantial damage during an off-airport hard landing, about 6 miles south-southeast of Casa Grande, Arizona. The helicopter was being operated by the Pinal County Sheriff's Office as a day, visual flight rules, post maintenance test flight, under the provisions of Title 14, CFR Part 91. The three occupants of the helicopter sustained minor injuries. Visual meteorological conditions prevailed, and company flight following procedures were in effect.</p> <p>During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), the pilot said they were flying about 700 feet above the ground performing a post-maintenance test flight, when he heard an audible bang. The helicopter engine lost all engine power, and he did an autorotation. The helicopter landed hard, the right skid collapsed, and the helicopter came to rest on its right side. The tailboom and fuselage sustained substantial damage. The helicopter was being test flown with maintenance personnel on-board, following the modification of the air intake.</p> <p>In a written statement to the NTSB dated July 1, the pilot reported that he arrived at the Sheriff's hangar facility, and met with their aircraft mechanic, and another deputy/tactical flight officer. Their mission was to do a post maintenance test flight on the accident helicopter. This was the first flight since the installation of a Donaldson Air Filtration System and a new horizontal stabilizer.</p> <p>A pre-flight inspection was completed, and the pre-engine start checks were performed via a checklist. The engine start was normal. Pre-takeoff checks were performed per the checklist. No discrepancies were observed during the run-up. In a hover, all the flight controls and the engine indications were normal. The pilot hover taxied the helicopter to a ramp area, and performed a few hover maneuvers to ensure control inputs were normal. Once the maneuvers were complete, they departed the airport to the south-southeast.</p> <p>During the departure flight, the engine and flight instruments operated normally. A power check was completed; the pilot reduced the torque, and climbed to 2,100 feet (600-700 feet above ground level) where he leveled off. He continued cruise flight at about 110 knots.</p> <p>About 1-2 minutes after the power check, the pilot heard a distinct loud pop, the nose yawed to the left, and the helicopter begin to descend. The pilot, noting the loss of engine power, entered an autorotation. Approaching the ground, the pilot flared hard, leveled the helicopter, and pulled in collective. The helicopter landed hard, the right skid collapsed, and the helicopter rolled on its side.</p>					
FACTUAL REPORT - AVIATION					
					Page 1

National Transportation Safety Board

FACTUAL REPORT

AVIATION

NTSB ID: WPR13LA290

Occurrence Date: 06/25/2013

Occurrence Type: Accident

Narrative (Continued)

The helicopter was examined at the accident site by an Federal Aviation Administration (FAA) aviation safety inspector (ASI).

The helicopter was recovered to the Sheriff's hangar. At the direction of the NTSB IIC, the helicopter was examined under the supervision of the FAA ASI, by representatives/investigators from the airframe and engine manufacturers, in the presence of the operator's representatives.

During the examination, the investigators removed the air intake assembly, and found cloth material had been ingested into the engine intake. The engine was removed and shipped to the engine manufacturer's authorized maintenance facility for further examination. No other anomalies were found during the examination of the airframe.


An examination of the helicopter's maintenance logbooks revealed that the helicopter was being returned to service after an exchange of the air inlet barrier filter system. During the exchange the engine had been removed from the helicopter.


According to a mechanic, the engine was re-installed and inspected, prior to the air inlet barrier filter system installation.

At the engine manufacturer's authorized maintenance facility, the engine was disassembled and examined under the supervision of an FAA ASI, in the presence of the operator's representative. During the examination, more cloth material was found in the engine, in a sufficient quantity and location to cause engine flame out.

The cloth material found in the engine was consistent with a box of maintenance rags found at the operator's hangar facility.

Updated on Feb 10 2014 1:34PM

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: WPR13LA290			
		Occurrence Date: 06/25/2013			
		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name N/A	Airport ID:	Airport Elevation Ft. MSL	Runway Used N/A	Runway Length	Runway Width
Runway Surface Type: Dirt					
Runway Surface Condition: Dry; Rough					
Approach/Arrival Flown: NONE					
VFR Approach/Landing: Forced Landing					
Aircraft Information					
Aircraft Manufacturer MCDONNELL DOUGLAS HELICOPTER		Model/Series 369E		Serial Number 0392E	
Airworthiness Certificate(s): Normal					
Landing Gear Type: High Skid					
Amateur Built Acft? No	Number of Seats: 4	Certified Max Gross Wt.	3000 LBS	Number of Engines: 1	
Engine Type: Turbo Shaft	Engine Manufacturer: Rolls Royce	Model/Series: M250-C20R2	Rated Power: 450 HP		
- Aircraft Inspection Information					
Type of Last Inspection 100 Hour	Date of Last Inspection 05/2013	Time Since Last Inspection Hours	Airframe Total Time 4785 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes / Unknown	ELT Operated? Yes	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner Pinal County Sheriff's Office		Street Address			
		City Florence	State AZ	Zip Code 85132	
Operator of Aircraft Pinal County Sheriff's Office		Street Address			
		City Florence	State AZ	Zip Code 85132	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Flight Test					
FACTUAL REPORT - AVIATION					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: WPR13LA290
	Occurrence Date: 06/25/2013
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 43
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Sex:	Seat Occupied: Left	Occupational Pilot? Yes	Certificate Number: On File
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Certificate(s): Flight Instructor; Commercial

Airplane Rating(s): Single-engine Land

Rotorcraft/Glider/LTA: Helicopter

Instrument Rating(s): Helicopter

Instructor Rating(s): Helicopter

Current Biennial Flight Review? 08/2012

Medical Cert.: Class 2	Medical Cert. Status: With Waivers/Limitations	Date of Last Medical Exam: 04/2013
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	1208	498	275		127		33	933		
Pilot In Command(PIC)	1074	498	234		121		33	840		
Instructor										
Instruction Received										
Last 90 Days	88	4	1					37		
Last 30 Days	29							27		
Last 24 Hours	1	1								

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed?	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: Company VFR

Departure Point Casa Grande	State AZ	Airport Identifier KCGZ	Departure Time 0645	Time Zone MST
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Destination Local Flight	State AZ	Airport Identifier KCGZ	
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Type of Clearance: None

Type of Airspace: Class G

Weather Information


Source of Wx Information:
Automated Report

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: WPR13LA290
	Occurrence Date: 06/25/2013
	Occurrence Type: Accident

Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
KCGZ	0640	MST	Ft. MSL	170 NM	7 Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None		Ft. AGL	Visibility: 10	SM	Altimeter: 29.93 "Hg
Temperature: 27 °C	Dew Point: °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction:	Wind Speed: Calm		Wind Gusts:		
Visibility (RVR): Ft.	Visibility (RVV) SM				
Precip and/or Obscuration: No Obscuration; No Precipitation					

Accident Information		
Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot			1		1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers			2		2
- TOTAL ABOARD -			3		3
Other Ground					
- GRAND TOTAL -			3		3

 National Transportation Safety Board FACTUAL REPORT AVIATION	NTSB ID: WPR13LA290
	Occurrence Date: 06/25/2013
	Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)
Lawrence Lewis

Additional Persons Participating in This Accident/Incident Investigation:

Ken Nettles
FAA FSDO
Scottsdale, AZ

Adrian Booth
Boeing
Mesa, AZ

John Hobby
MDHI
Mesa, AZ

David Riser
Rolls Royce

Scott Elliot
Pinal County Sheriff
Casa Grande, AZ

Edward C Muszala
Pinal County Sheriff
Casa Grande, AZ