Aviation Investigation Final Report

Location:	OSAGE, Arkansas	**Accident Number:**	FTW94LA144
Date & Time:	May 4, 1994, 18:30 Local	**Registration:**	N90469
Aircraft:	HILLER UH-12E	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Minor
Flight Conducted Under:	Part 137: Agricultural		

Analysis

ACCORDING TO THE PILOT, THE HELICOPTER WAS SERVICED WITH 30 GALLONS OF FUEL FOR AN AERIAL APPLICATION FLIGHT TO DISPENSE 100 GALLONS OF PESTICIDES. AFTER A 45 MINUTE SORTIE, THE HELICOPTER WAS EN ROUTE BACK TO THE LOADING SITE, OVER HEAVILY WOODED MOUNTAINOUS TERRAIN, WHEN THE PILOT EXPERIENCED A LOSS OF ENGINE POWER. THE ENGINE REGAINED POWER TEMPORARILY, AND LOST POWER FOR A SECOND TIME 5 TO 8 SECONDS LATER. THE PILOT AUTOROTATED ABOVE THE TREE TOPS AND SETTLED THROUGH THE TREES COMING TO REST IN AN UPRIGHT POSITION. THERE WAS NO EVIDENCE OF A FUEL SPILL AND NO FUEL WAS FOUND IN THE FUEL CELL. THE AVERAGE FUEL BURN RATE IS 25 TO 26 GALLONS PER HOUR. THE ENGINE WAS SUCCESSFULLY RUN IN AN ENGINE TEST CELL.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FUEL EXHAUSTION DUE TO THE PILOT'S FAILURE TO REFUEL AND THE LACK OF SUITABLE TERRAIN FOR A FORCED LANDING.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: CRUISE - NORMAL

Findings

1. (F) FLUID,FUEL - EXHAUSTION
2. (C) REFUELING - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - EMERGENCY

Findings
3. TERRAIN CONDITION - MOUNTAINOUS/HILLY
4. (C) TERRAIN CONDITION - NONE SUITABLE

Factual Information

On May 4, 1994, at 1830 central daylight time, a Hiller UH-12E helicopter, N90469, was substantially damaged following a loss of engine power near Osage, Arkansas. The airline transport rated pilot sustained minor injuries. Visual meteorological conditions prevailed for the aerial application flight.

According to the operator, the turbine powered helicopter was supporting a gypsy moth eradication program within the Ozark National Forest. The pilot stated that the helicopter was serviced with 100 gallons pesticides and 30 gallons of Jet A fuel for the ninth sortie of the day.

Approximately 45 minutes later, while en route back to the load site, the engine lost power. The pilot stated that he entered autorotation, and the engine auto reignite restarted the engine. The pilot added that he turned towards an open field to make a precautionary landing, and approximately 5 to 8 seconds later, the engine lost power for the second time.

The pilot reentered an autorotation to the heavily wooded area ahead and was able stop all forward motion above the tree tops, settling through the trees. After falling 40 to 50 feet, the helicopter came to rest in the upright position lodged between the tree trunks.

According to the operator, the fuel cell and the fuel lines were not compromised during the crash sequence. No fuel was found in the fuel cell, and there was no evidence of a fuel spill on the ground. According to the engine manufacturer, the average fuel burn rate is 25 to 26 gallons per hour. A successful engine run was accomplished in a test cell, and no anomalies were found with either the fuel control or associated fuel system components.

Pilot Information

Certificate:	Airline transport	**Age:**	46,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 15, 1994
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	10146 hours (Total, all aircraft), 210 hours (Total, this make and model), 9086 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HILLER	**Registration:**	N90469
Model/Series:	UH-12E UH-12E	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	2358
Landing Gear Type:	Skid	**Seats:**	3
Date/Type of Last Inspection:	April 13, 1994 100 hour	**Certified Max Gross Wt.:**	3100 lbs
Time Since Last Inspection:	10 Hrs	**Engines:**	1 Turbo shaft
Airframe Total Time:	5989 Hrs	**Engine Manufacturer:**	ALLISON
ELT:	Installed, not activated	**Engine Model/Series:**	250-C20B
Registered Owner:	EVERGREEN EQUITY INC	**Rated Power:**	420 Horsepower
Operator:		**Operating Certificate(s) Held:**	
Operator Does Business As:	EVERGREEN HELICOPTERS INC.	**Operator Designator Code:**	LCFG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	HRO ,1364 ft msl	**Distance from Accident Site:**	13 Nautical Miles
Observation Time:	11:51 Local	**Direction from Accident Site:**	65°
Lowest Cloud Condition:	Scattered / 5000 ft AGL	**Visibility**	15 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	22°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	Company VFR
Destination:		**Type of Clearance:**	None
Departure Time:	17:45 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	36.29079,-93.290176(est)

Administrative Information

Investigator In Charge (IIC):	Wigington, Douglas
Additional Participating Persons:	DAVID F HALL; LITTLE ROCK , AR
Original Publish Date:	November 14, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=19047