



# Aviation Investigation Final Report

<b>Location:</b>	COON RAPIDS, Minnesota	<b>Accident Number:</b>	CHI90DER03
<b>Date &amp; Time:</b>	July 31, 1990, 10:07 Local	<b>Registration:</b>	N4990H
<b>Aircraft:</b>	BELL 47G3B1	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 137: Agricultural		

## Analysis

WHILE IN NORMAL CRUISE FLIGHT, THE HELICOPTER EXPERIENCED A TOTAL LOSS OF ENGINE POWER. AN AUTOROTATIONAL LANDING WAS ATTEMPTED, HOWEVER THE PILOT MISJUDGED THE FLARE AND LANDED HARD RENDERING SUBSTANTIAL DAMAGE TO THE AIRCRAFT. SUBSEQUENT INVESTIGATION REVEALED ONLY UNUSABLE FUEL IN THE TANKS OF THE HELICOPTER. WHEN FUEL WAS ADDED TO THE TANKS THE ENGINE RAN NORMALLY.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT-IN-COMMAND'S INACCURATE FUEL CONSUMPTION CALCULATIONS AND MISJUDGEMENT OF HIS FUEL SUPPLY.

## Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL

Phase of Operation: CRUISE - NORMAL

### Findings

1. (F) FUEL SYSTEM, TANK - EXHAUSTION
2. (C) FUEL SUPPLY - MISJUDGED - PILOT IN COMMAND
3. (C) FUEL CONSUMPTION CALCULATIONS - INACCURATE - PILOT IN COMMAND

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

Findings

- 4. (F) EMERGENCY PROCEDURE - INITIATED - PILOT IN COMMAND
- 5. (F) AUTOROTATION - ATTEMPTED - PILOT IN COMMAND

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Occurrence #3: HARD LANDING  
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

- 6. (C) FLARE - MISJUDGED - PILOT IN COMMAND

## Factual Information

### Pilot Information

<b>Certificate:</b>	Commercial; Private	<b>Age:</b>	37, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	March 30, 1990
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	8000 hours (Total, all aircraft), 7000 hours (Total, this make and model), 7550 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BELL	<b>Registration:</b>	N4990H
<b>Model/Series:</b>	47G3B1 47G3B1	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal; Restricted (Special)	<b>Serial Number:</b>	2942
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	3
<b>Date/Type of Last Inspection:</b>	June 13, 1990 100 hour	<b>Certified Max Gross Wt.:</b>	2950 lbs
<b>Time Since Last Inspection:</b>	40 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	4410 Hrs	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	V0435A1F
<b>Registered Owner:</b>	SCOTT CHURCHILL	<b>Rated Power:</b>	260 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	CUHG

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	MSP ,840 ft msl	<b>Distance from Accident Site:</b>	16 Nautical Miles
<b>Observation Time:</b>	10:00 Local	<b>Direction from Accident Site:</b>	350°
<b>Lowest Cloud Condition:</b>	Scattered / 5000 ft AGL	<b>Visibility</b>	20 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	8 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	240°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	21°C / 12°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	COON RAPIDS , MN	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	ANOKA CO. , MN (ANE )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	09:50 Local	<b>Type of Airspace:</b>	Class B;Class E

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	0 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	
<b>Runway Length/Width:</b>	0 ft / 0 ft	<b>VFR Approach/Landing:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	45.159713,-93.310752(est)

## Administrative Information

**Investigator In Charge (IIC):** Vergenz, John

**Additional Participating Persons:**

**Original Publish Date:** September 21, 1992

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=14487>

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