



# Aviation Investigation Final Report

<b>Location:</b>	SCOTTSDALE, Arizona	<b>Accident Number:</b>	LAX94LA303
<b>Date &amp; Time:</b>	July 30, 1994, 10:30 Local	<b>Registration:</b>	N6749D
<b>Aircraft:</b>	BELL 47G-2A	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 137: Agricultural		

## Analysis

THE PILOT STATED THAT HE HAD JUST FINISHED AN APPLICATION RUN AND WAS IN THE PROCESS OF PULLING UP AND TURNING RIGHT WHEN THE ENGINE SPATTERED BRIEFLY AND QUIT. WHILE AT AN ALTITUDE OF APPROXIMATELY 40 FEET AND AN AIRSPEED OF 40 KNOTS, THE PILOT INITIATED AN AUTOROTATION. THE AIRCRAFT TOUCHED DOWN HARD AND THE MAIN ROTOR BLADE STRUCK THE TAIL BOOM. ACCORDING TO A COMPANY MECHANIC, THERE WAS APPROXIMATELY 1 QUART OF FUEL REMAINING IN THE TANK. AFTER THE AIRCRAFT WAS RECOVERED AND REFUELED, THE ENGINE STARTED AND RAN NORMALLY ON THE FIRST ATTEMPT.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S FAILURE TO REFUEL APPROPRIATELY, THE ALTITUDE AND AIRSPEED AT THE TIME THE ENGINE STOPPAGE OCCURRED WERE FACTORS IN THE ACCIDENT.

## Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL  
Phase of Operation: MANEUVERING - AERIAL APPLICATION

### Findings

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

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Occurrence #2: FORCED LANDING  
Phase of Operation: DESCENT - EMERGENCY  
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Occurrence #3: HARD LANDING  
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

3. (F) AIRSPEED - NOT ATTAINED - PILOT IN COMMAND
4. (F) ALTITUDE - NOT ATTAINED - PILOT IN COMMAND

## Factual Information

On July 30, 1994, at 1030 hours mountain standard time, a Bell 47G-2A, N6749D, sustained substantial damage during a hard landing on the Salt River Indian Reservation, Scottsdale, Arizona. The aircraft was operated by San Tan Dusters, Inc., and was conducting agricultural operations under 14 CFR Part 137 of Federal Aviation Regulations. Visual meteorological conditions were prevalent at the time and no flight plan was filed for the operation. The certificated commercial pilot was not injured. The flight originated from an improvised loading site on the Salt River Indian Reservation at 0500 on the day of the accident.

The pilot stated that he had flown the aircraft the day before and during one flight had heard the engine sputter. As a precaution, he landed, checked the fuel, and verified that he still had approximately 5 or 6 gallons of fuel on board.

The pilot stated that he had just finished an application run and was in the process of pulling up and turning right when the engine sputtered briefly and quit. While at an altitude of approximately 40 feet and an airspeed of 40 knots, the pilot initiated an autorotation to the ground. The pilot stated that the aircraft touched down hard, at which time the main rotor blade flexed downward striking the tail boom. The pilot exited the aircraft unassisted.

According to the to height/velocity diagram obtained from Bell Helicopter for the 47G-2A model, the engine stoppage occurred at an airspeed and altitude unsafe for autorotative landings.

According to a company mechanic who performed a postaccident inspection of the aircraft, there was approximately 1 quart of fuel remaining in the tank. After the aircraft was recovered, the engine was refueled. The engine started and ran normally on the first attempt.

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial	<b>Age:</b>	54, 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>	Airplane	<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-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	April 12, 1994
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	15146 hours (Total, all aircraft), 6800 hours (Total, this make and model), 14841 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 150 hours (Last 30 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BELL	<b>Registration:</b>	N6749D
<b>Model/Series:</b>	47G-2A 47G-2A	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	2240
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	3
<b>Date/Type of Last Inspection:</b>	January 30, 1994 100 hour	<b>Certified Max Gross Wt.:</b>	2700 lbs
<b>Time Since Last Inspection:</b>	60 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	14277 Hrs	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	VO-435-A1F
<b>Registered Owner:</b>	AG AERO LEASING	<b>Rated Power:</b>	270 Horsepower
<b>Operator:</b>	JOE HENDERSON	<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>	SAN TAN DUSTERS, INC.	<b>Operator Designator Code:</b>	ZDCG

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	PHX ,1133 ft msl	<b>Distance from Accident Site:</b>	10 Nautical Miles
<b>Observation Time:</b>	10:56 Local	<b>Direction from Accident Site:</b>	230°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	5 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	160°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	33°C / 18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>		<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	CHANDLER , AZ (NONE)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	05:00 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

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

## 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>	33.659519,-111.869178(est)

## Administrative Information

**Investigator In Charge (IIC):** Crispin, Robert

**Additional Participating Persons:**

**Original Publish Date:** January 12, 1995

**Last Revision Date:**

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

**Note:**

**Investigation Docket:** <https://data.ntsb.gov/Docket?ProjectID=28813>

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