



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Dighton, KS	<b>Accident Number:</b>	DEN06CA081
<b>Date &amp; Time:</b>	06/01/2006, 1700 CDT	<b>Registration:</b>	N14RY
<b>Aircraft:</b>	Grumman G-164B	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 137: Agricultural		

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## Analysis

The airplane was taking off on an aerial application flight. Shortly after lifting off, the airplane's engine lost power. The commercial pilot set the airplane down on the runway toward the departure end. The airplane went off the end of the runway and into a wheat field. The airplane's main gear tires sank into the soft wet soil and the airplane subsequently nosed over causing the engine to fracture and separate from the fuselage and crushing the vertical stabilizer and rudder downward. The pilot sustained minor injuries. Visual meteorological conditions prevailed at the time of the accident. An examination of the airplane's engine revealed that the rocker arm boss on the number 1 cylinder had fractured leaving the exhaust valve on the cylinder closed and resulting in the subsequent engine failure.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The broken rocker arm boss causing the number 1 cylinder exhaust valve to stay closed and subsequently the engine failed. A factor contributing to the accident was the soft field the airplane set down in.

## Findings

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Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF  
Phase of Operation: TAKEOFF - INITIAL CLIMB

### Findings

1. (C) ENGINE ASSEMBLY,ROCKER ARM/TAPPET - FRACTURED
2. (F) ENGINE ASSEMBLY,VALVE,EXHAUST - CLOSED

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Occurrence #2: FORCED LANDING  
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

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Occurrence #3: NOSE OVER  
Phase of Operation: EMERGENCY LANDING

### Findings

3. TERRAIN CONDITION - OPEN FIELD
4. TERRAIN CONDITION - WET
5. (F) TERRAIN CONDITION - SOFT

## Factual Information

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	29, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2	<b>Last FAA Medical Exam:</b>	03/01/2006
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	7206 hours (Total, all aircraft), 3500 hours (Total, this make and model), 28 hours (Last 90 days, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Grumman	<b>Registration:</b>	N14RY
<b>Model/Series:</b>	G-164B	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Restricted	<b>Serial Number:</b>	271B
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>		<b>Engine Model/Series:</b>	R-975
<b>Registered Owner:</b>	Root Spraying, Service	<b>Rated Power:</b>	
<b>Operator:</b>	Root Spraying, Service	<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>	Root Spraying Service	<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:		Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	Dighton, KS (K65)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	VFR
Departure Time:	1700 CDT	Type of Airspace:	

## Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:		IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	

## Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	
Total Injuries:	1 Minor	Latitude, Longitude:	38.408889, -97.235833

## Administrative Information

Investigator In Charge (IIC):	David C Bowling	Report Date:	10/03/2006
Additional Participating Persons:			
Publish Date:			
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinquiry@ntsb.gov">pubinquiry@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).