



# Aviation Investigation Final Report

<b>Location:</b>	Cottonwood, Idaho	<b>Accident Number:</b>	SEA01FA127
<b>Date &amp; Time:</b>	July 10, 2001, 11:14 Local	<b>Registration:</b>	N4947X
<b>Aircraft:</b>	Rockwell S-2R-1200	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 137: Agricultural		

## Analysis

The airplane, loaded with approximately 450 gallons of fire retardant, was directed to work the fire's east flank. A witness on the ground stated the airplane approached from the southwest, near the top of the canyon. He reported that initially he didn't see the airplane, but could only hear it flying down the east flank of the fire. Shortly thereafter, he reported seeing a "big ball of fire" and thought the pilot must have hit something. A second witness reported seeing the accident airplane approach the fire from the south. He stated that as the airplane approached the fire, the pilot reported that "...it was [too smoky] and he was going around to try again." Shortly thereafter, ground crews reported that the airplane had crashed. Post accident evaluation of the aircraft wreckage revealed no evidence of a pre-impact failure or malfunction.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Failure to maintain adequate clearance from terrain while dropping fire retardant. Factors include low visibility with smoke.

## Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (F) WEATHER CONDITION - HAZE/SMOKE
2. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

## Factual Information

### HISTORY OF FLIGHT

On July 10, 2001, about 1114 Pacific daylight time, a Rockwell International S-2R-1200 (Thrush), N4947X, was destroyed by impact forces and a post-crash fire after colliding with terrain approximately 20 miles southwest of Cottonwood, Idaho. The airplane was owned by Craigmont Air Services, Incorporated, and was being operated as a fire suppression/aerial applicator flight under the provisions of Title 14, CFR Part 137, when the accident occurred. The commercial pilot, the sole occupant of the aircraft, was fatally injured. Visual meteorological conditions prevailed and flight following procedures were in effect. The flight originated from Craigmont, Idaho, approximately 35 minutes prior to the accident.

The airplane, loaded with approximately 450 gallons of fire retardant, departed Craigmont, Idaho, at 1040. Approximately 35 minutes after departure, the airplane arrived at the site of the fire, and was directed to dump retardant on the fire's east flank. The pilot reported to fire crews on the ground that he was going to fly down the east flank of the fire, through the smoke, and drop the retardant. A witness on the ground stated the airplane approached from the southwest, near the top of the canyon. He reported that initially he didn't see the airplane, but could only hear it flying down the east flank of the fire. Shortly thereafter, he reported seeing "...a big ball of fire several hundred feet below me, and thought he [the pilot] must have hit something."

A second witness, a helicopter pilot who was flying in an area approximately 1.5 miles east of the accident site, reported seeing the accident airplane approach the fire from the south. He stated that as the airplane approached the fire the pilot reported that "...it was [too smoky] and he was going around to try again." Shortly thereafter, ground crews reported that the airplane had crashed.

### PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with an airplane single-engine land rating. An entry in the pilot's logbook indicated that he had completed a flight review (FAR 61.56) on June 30, 2001. On an insurance application dated August 18, 2000, the pilot indicated that he had accumulated approximately 12,927 total flight hours, including approximately 1,025 hours in the 12 months preceding the application. Company personnel reported that this was the second season that the pilot had worked for the operator.

FAA records indicated that the pilot was issued a second-class medical certificate on October 12, 2000. The medical certificate carried a waiver (#30059325) for monocular vision.

## AIRCRAFT INFORMATION

The airplane, a restricted category Rockwell International S-2R-1200 (Thrush), serial number 5008R, was powered by a Wright C7BA series engine rated at 1,200 horsepower. Maintenance records indicated that the airplane's last inspection, an annual inspection, was completed on July 21, 2000. The airplane had accumulated approximately 270 hours from the time of the last inspection to the time of the accident. The airframe's total time was approximately 8,997 hours.

## WRECKAGE AND IMPACT INFORMATION

On July 11, 2001, representatives from the US Forest Service and the Federal Aviation Administration conducted the on-site examination of the wreckage and reported that the wreckage was located near the bottom of the canyon along the banks of the Salmon River, at 45 degrees 59 minutes north latitude, and 116 degrees 41 minutes west longitude. The terrain angle of the canyon walls is approximately 50-60 degrees. The wreckage distribution path traveled downhill and was approximately 500 yards in length, with a magnetic heading of approximately 315 degrees. The aircraft and associated components sustained extensive thermal and impact damage.

The engine, propeller and landing gear assembly were located in the river at the northwest end of the wreckage distribution track. The remains of the cockpit, instrument panel, empennage and part of the hopper were located approximately 100 yards southeast of the river. The inboard section of the right wing, the still-attached wing spar and left wing were located approximately 250 yards southeast (up slope) of the cockpit remains. The outboard section of the right wing, measuring approximately four feet in length, was located at the southeast end of the wreckage track, approximately 400 yards from the cockpit.

## MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy on the pilot was conducted by the Idaho County Coroner's Office, Grangeville, Idaho, on July 13, 2001. According to the autopsy report, the pilot's cause of death was attributed to blunt force trauma secondary to an aircraft accident.

The FAA Civil Aeromedical Institute (CAMI), Oklahoma City, Oklahoma, conducted toxicology testing on the pilot. According to the postmortem toxicology report, results were negative for carbon monoxide, cyanide, ethanol and illegal drugs. The report also indicated that Salicylate was detected in the pilot's blood. See attached report for specific values.

## TESTS AND RESEARCH

Sections of the airplane's wing spar were submitted to the NTSB Materials Laboratory for evaluation. Personnel from laboratory reported, " All the fractures are overstress with substantial deformation that is not in the vertical plane, indicating that fracture [s] were not

caused by aerodynamic loads."

## ADDITIONAL INFORMATION

On April 11, 2001, the airframe, engine and associated components were released to AIG Aviation, Inc, Northglenn, Colorado.

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	52, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<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>	Yes
<b>Medical Certification:</b>	Class 2 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	October 12, 2000
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	June 30, 2001
<b>Flight Time:</b>	12927 hours (Total, all aircraft), 1800 hours (Total, this make and model)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Rockwell	<b>Registration:</b>	N4947X
<b>Model/Series:</b>	S-2R-1200	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	5008R
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	July 21, 2000 Annual	<b>Certified Max Gross Wt.:</b>	6000 lbs
<b>Time Since Last Inspection:</b>	269 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	8997 Hrs at time of accident	<b>Engine Manufacturer:</b>	Curtis Wright
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	R-1820-97
<b>Registered Owner:</b>	Stanley and Margo Bybee	<b>Rated Power:</b>	1200 Horsepower
<b>Operator:</b>	Craigmont Air Service, Inc.	<b>Operating Certificate(s) Held:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	
<b>Precipitation and Obscuration:</b>	N/A - None - Smoke		
<b>Departure Point:</b>	CRAIGMONT, ID (S89 )	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	10:40 Local	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	On-ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	45.940063,-116.52098(est)

## Administrative Information

Investigator In Charge (IIC):	HOGENSON, DENNIS
Additional Participating Persons:	John H Phillips; FAA; Spokane, WA
Original Publish Date:	October 24, 2002
Last Revision Date:	
Investigation Class:	<a href="#">Class</a>
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	<a href="https://data.nts.gov/Docket?ProjectID=52686">https://data.nts.gov/Docket?ProjectID=52686</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).