



# National Transportation Safety Board Aviation Accident Final Report

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|                                |                                      |                         |             |
|--------------------------------|--------------------------------------|-------------------------|-------------|
| <b>Location:</b>               | Alexandria, MN                       | <b>Accident Number:</b> | CHI08LA180  |
| <b>Date &amp; Time:</b>        | 07/02/2008, 0700 CDT                 | <b>Registration:</b>    | N601TS      |
| <b>Aircraft:</b>               | SMITH Aerostar 601P                  | <b>Aircraft Damage:</b> | Substantial |
| <b>Defining Event:</b>         | Loss of engine power (partial)       | <b>Injuries:</b>        | 4 Minor     |
| <b>Flight Conducted Under:</b> | Part 91: General Aviation - Business |                         |             |

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## Analysis

The pilot reported that on the previous flight the left engine surged at 14,700 feet and the flight could not be conducted at the planned altitude of 19,000 feet. He stated that during descent to land the engines performed normally at lower altitudes. After landing he talked with a mechanic on the telephone and a decision was made to conduct the next leg of the trip at a lower altitude. During the takeoff, a loss of power was experienced and the pilot attempted to return to the airport. During the turn back to the airport, the airplane lost altitude and the pilot decided to turn away from the populated areas and land the airplane in a field. During the landing the airplane struck a ditch. An examination of the airplane subsequent to the accident did not reveal any defects that would have resulted in a loss of engine power.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power for undetermined reasons. Contributing to the accident was the unsuitable terrain for the forced landing.

## Findings

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|                             |   |
|-----------------------------|---|
| <b>Environmental issues</b> | Terrain - Contributed to outcome                |
| <b>Not determined</b>       | Not determined - Unknown/Not determined (Cause) |

## Factual Information

On July 2, 2008, about 0700 central daylight time, a Smith Aerostar 601P, N601TS, piloted by an airline transport pilot, sustained substantial damage during a forced landing following a loss of engine power on takeoff from the Chandler Field Airport, Alexandria, Minnesota. The 14 CFR Part 91 business flight was operating in visual meteorological conditions on an instrument flight rules flight plan. There were no injuries reported to the pilot or three passengers. The flight was originating at the time of the accident and Saint Louis, Missouri, was the intended destination.

The pilot reported that on the previous flight the left engine experienced surging at 14,700 feet and the flight could not be conducted at the expected altitude of 19,000 feet. He stated that during descent the engines performed normally at lower altitudes. After landing, he talked with a mechanic on the telephone and a decision was made to conduct the next leg of the trip at a lower altitude. He stated that during the takeoff, as he rotated, he noticed that the airplane's performance was less than usual. He determined that insufficient runway remained to abort the takeoff and he elected to continue and return to the airport. He stated that he was unable to determine which engine was the reason for the power loss. He stated that he was unable to climb higher than 150 feet above the ground or to accelerate beyond 110 miles per hour. The pilot reported that while attempting to turn back to the airport he lost speed and decided to turn the airplane away from the populated areas and land in a field that was southeast of the airport. He reported that he touched down on level terrain, but the airplane subsequently struck a drainage ditch during the landing.

Both engines were Lycoming model IO-540-S1A5 engines and each had 4,316.5 hours total time in service. The most recent overhaul of the engines was performed on July 1, 1994, and each engine had accumulated 458 hours since that overhaul.

The airplane was examined subsequent to the accident. Both engines were rotated by hand and "thumb" compression was evident. Fuel was found in the fuel lines leading to the fuel servos and to the fuel manifolds. Fuel was found within the airplane's fuel tanks. Magneto timing was checked and was found to be within specifications. Examination did not reveal any defects that would have resulted in a loss of engine power.

### History of Flight

|                   |   |
|-------------------|---|
| Initial climb     | Loss of engine power (partial) (Defining event) |
| Emergency descent | Off-field or emergency landing                  |
| Landing           | Collision with terr/obj (non-CFIT)              |

## Pilot Information

|                                  |   |  |                            |
|----------------------------------|---|--|----------------------------|
| <b>Certificate:</b>              | Airline Transport; Flight Instructor; Commercial  | <b>Age:</b>                              | 59, Male                   |
| <b>Airplane Rating(s):</b>       | Multi-engine Land; Single-engine Land   | <b>Seat Occupied:</b>                    | Left                       |
| <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>             | No                         |
| <b>Instructor Rating(s):</b>     | Airplane Multi-engine; Airplane Single-engine   | <b>Toxicology Performed:</b>             | No                         |
| <b>Medical Certification:</b>    | Class 3 With Waivers/Limitations  | <b>Last Medical Exam:</b>                | 12/14/2006                 |
| <b>Occupational Pilot:</b>       | No  | <b>Last Flight Review or Equivalent:</b> | 04/19/2008                 |
| <b>Flight Time:</b>              | 8600 hours (Total, all aircraft), 32 hours (Total, this make and model), 8200 hours (Pilot In Command, all aircraft), 69 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) |  |                            |

## Aircraft and Owner/Operator Information

|                                      |                          |   |                 |
|--------------------------------------|--------------------------|---|-----------------|
| <b>Aircraft Manufacturer:</b>        | SMITH                    | <b>Registration:</b>                      | N601TS          |
| <b>Model/Series:</b>                 | Aerostar 601P            | <b>Aircraft Category:</b>                 | Airplane        |
| <b>Year of Manufacture:</b>          |                          | <b>Amateur Built:</b>                     | No              |
| <b>Airworthiness Certificate:</b>    | Normal                   | <b>Serial Number:</b>                     | 61P-0194-014    |
| <b>Landing Gear Type:</b>            | Retractable - Tricycle   | <b>Seats:</b>                             | 4               |
| <b>Date/Type of Last Inspection:</b> | 11/02/2007, Annual       | <b>Certified Max Gross Wt.:</b>           | 6000 lbs        |
| <b>Time Since Last Inspection:</b>   |                          | <b>Engines:</b>                           | 2 Reciprocating |
| <b>Airframe Total Time:</b>          |                          | <b>Engine Manufacturer:</b>               | Lycoming        |
| <b>ELT:</b>                          | Installed, not activated | <b>Engine Model/Series:</b>               | IO-540          |
| <b>Registered Owner:</b>             | Trek LLC                 | <b>Rated Power:</b>                       | 290 hp          |
| <b>Operator:</b>                     | On file                  | <b>Air Carrier Operating Certificate:</b> | None            |

## Meteorological Information and Flight Plan

|                                  |                      |                              |                   |
|----------------------------------|----------------------|------------------------------|-------------------|
| Observation Facility, Elevation: | AXN, 1425 ft msl     | Observation Time:            | 0653 CDT          |
| Distance from Accident Site:     | 1 Nautical Miles     | Condition of Light:          | Day               |
| Direction from Accident Site:    | 270°                 | Conditions at Accident Site: | Visual Conditions |
| Lowest Cloud Condition:          | Clear                | Temperature/Dew Point:       | 17° C / 9° C      |
| Lowest Ceiling:                  | None                 | Visibility                   | 8 Miles           |
| Wind Speed/Gusts, Direction:     | 12 knots, 360°       | Visibility (RVR):            |                   |
| Altimeter Setting:               | 30 inches Hg         | Visibility (RVV):            |                   |
| Precipitation and Obscuration:   |                      |                              |                   |
| Departure Point:                 | Alexandria, MN (AXN) | Type of Flight Plan Filed:   | IFR               |
| Destination:                     | ST LOUIS, MO (IHO)   | Type of Clearance:           | None              |
| Departure Time:                  | 0700 CDT             | Type of Airspace:            |                   |

## Airport Information

|                      |                              |                           |                |
|----------------------|------------------------------|---------------------------|----------------|
| Airport:             | Chandler Field Airport (AXN) | Runway Surface Type:      |                |
| Airport Elevation:   | 1425 ft                      | Runway Surface Condition: |                |
| Runway Used:         | N/A                          | IFR Approach:             | None           |
| Runway Length/Width: |                              | VFR Approach/Landing:     | Forced Landing |

## Wreckage and Impact Information

|                     |         |                     |             |
|---------------------|---------|---------------------|-------------|
| Crew Injuries:      | 1 Minor | Aircraft Damage:    | Substantial |
| Passenger Injuries: | 3 Minor | Aircraft Fire:      | None        |
| Ground Injuries:    | N/A     | Aircraft Explosion: | None        |
| Total Injuries:     | 4 Minor |                     |             |

## Administrative Information

|                                   |  |               |            |
|-----------------------------------|--|---------------|------------|
| Investigator In Charge (IIC):     | John M Brannen   | Adopted Date: | 09/30/2009 |
| Additional Participating Persons: | John Tutora; FAA-Minneapolis FSDO; Minneapolis, MN   |               |            |
| Publish Date:                     | 09/30/2009   |               |            |
| 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:pubinq@ntsb.gov">pubinq@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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