



# Aviation Investigation Final Report

|                                |                                      |                         |             |
|--------------------------------|--------------------------------------|-------------------------|-------------|
| <b>Location:</b>               | MAPLE PLAIN, Minnesota               | <b>Accident Number:</b> | CHI00LA105  |
| <b>Date &amp; Time:</b>        | April 2, 2000, 10:26 Local           | <b>Registration:</b>    | N196KW      |
| <b>Aircraft:</b>               | Weinzierl TITAN<br>TORNADO II        | <b>Aircraft Damage:</b> | Substantial |
| <b>Defining Event:</b>         |                                      | <b>Injuries:</b>        | 2 Minor     |
| <b>Flight Conducted Under:</b> | Part 91: General aviation - Personal |                         |             |

## Analysis

The airplane sustained substantial damage on contact with terrain during a forced landing after a loss of engine power on takeoff. The pilot and passenger sustained minor injuries. The pilot stated, 'I was departing to the east. I climbed to about 200 ft. when the engine stopped I turned back for a field. I hit the field and the plane overturned.' The field was rough and uneven. The airplane sustained substantial damage to the hull, wing tips, and tail. The engines fuel filter was found clogged with silicone used as a fuel tank sealant. The plugged filter was a sintered bronze filter. The Rotax installation manual states, 'A suitable fuel filter of 0.15 mm mesh size must be fitted between pump and carburetor. Do not use paper filters. The fuel tank must have a drain cock for condensed water. A screen of 0.3 mm mesh size should be fitted to the fuel line in the tank.' The pilot's safety recommendation was, 'Don't use silicone to seal any type of fuel tanks or exc.'

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the obstructed fuel system filter, the inadequate silicone material the builder used, and the rough and uneven terrain. A factor was that suitable landing terrain was not available.

### Findings

Occurrence #1: LOSS OF ENGINE POWER  
Phase of Operation: TAKEOFF

Findings

1. (C) FUEL SYSTEM, FILTER - OBSTRUCTED
2. (C) MATERIAL INADEQUATE, IMPROPER - OWNER/BUILDER

-----

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

-----

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING

Findings

3. (C) TERRAIN CONDITION - ROUGH/UNEVEN
4. (F) TERRAIN CONDITION - NONE SUITABLE

## Factual Information

On April 2, 2000, at 1026 central daylight time, a Weinzierl Titan Tornado II, piloted by a private pilot sustained substantial damage on contact with terrain during a forced landing after a loss of engine power on takeoff from Maple Airport, near Maple Plain, Minnesota. The local flight was operating under 14 CFR Part 91. Visual meteorological conditions prevailed at the time of the accident. The pilot and passenger sustained minor injuries. No flight plan was on file. The personal flight was originating at the time of the accident.

The pilot stated, "I was departing to the east. I climbed to about 200 ft. when the engine stopped I turned back for a field." The airport owner stated that the field was rough and uneven. He stated, "I hit the field and the plane overturned." He further stated that the airplane sustained substantial damage to the hull, wing tips, and tail.

The pilot examined the wreckage and found a clogged fuel filter. The fuel filter was plugged with silicone used as a sealant in the fuel tank. See appended photo.

The plugged filter was identified as a Plastisonics, Inc., sintered bronze, model FF704C series filter. The fuel filter was designed for 1/4-inch fuel lines. See appended filter specification sheet.

The Rotax installation manual states, "A suitable fuel filter of 0.15 mm mesh size must be fitted between pump and carburetor. Do not use paper filters. The fuel tank must have a drain cock for condensed water. A screen of 0.3 mm mesh size should be fitted to the fuel line in the tank." See appended installation manual.

The pilot's safety recommendation was, "Don't use silicone to seal any type of fuel tanks or exc."

## Pilot Information

|                                  |   |  |               |
|----------------------------------|---|--|---------------|
| <b>Certificate:</b>              | Private   | <b>Age:</b>                              | 33, 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>             | No            |
| <b>Medical Certification:</b>    | Class 3 Valid Medical-w/<br>waivers/lim   | <b>Last FAA Medical Exam:</b>            | March 5, 1999 |
| <b>Occupational Pilot:</b>       | No  | <b>Last Flight Review or Equivalent:</b> |               |
| <b>Flight Time:</b>              | 490 hours (Total, all aircraft), 325 hours (Total, this make and model), 38 hours (Last 90 days, all aircraft), 3 hours (Last 24 hours, all aircraft) |  |               |

## Aircraft and Owner/Operator Information

|                                      |   |   |                 |
|--------------------------------------|---|---|-----------------|
| <b>Aircraft Make:</b>                | Weinzierl   | <b>Registration:</b>                      | N196KW          |
| <b>Model/Series:</b>                 | TITAN TORNADO II TITAN<br>TORN                            | <b>Aircraft Category:</b>                 | Airplane        |
| <b>Year of Manufacture:</b>          |   | <b>Amateur Built:</b>                     | Yes             |
| <b>Airworthiness Certificate:</b>    | Experimental (Special)                                    | <b>Serial Number:</b>                     | D96618SOK020    |
| <b>Landing Gear Type:</b>            | Tricycle  | <b>Seats:</b>                             |                 |
| <b>Date/Type of Last Inspection:</b> | Annual  | <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>               | Rotax           |
| <b>ELT:</b>                          | Installed, activated, did not aid<br>in locating accident | <b>Engine Model/Series:</b>               |                 |
| <b>Registered Owner:</b>             | KEVIN LEON WEINZIERL                                      | <b>Rated Power:</b>                       | 80 Horsepower   |
| <b>Operator:</b>                     |   | <b>Operating Certificate(s)<br/>Held:</b> | None            |
| <b>Operator Does Business As:</b>    |   | <b>Operator Designator Code:</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> | MSP ,841 ft msl                  | <b>Distance from Accident Site:</b>         | 21 Nautical Miles |
| <b>Observation Time:</b>                | 10:53 Local                      | <b>Direction from Accident Site:</b>        | 111°              |
| <b>Lowest Cloud Condition:</b>          | Unknown                          | <b>Visibility</b>                           | 10 miles          |
| <b>Lowest Ceiling:</b>                  | Broken / 11000 ft AGL            | <b>Visibility (RVR):</b>                    |                   |
| <b>Wind Speed/Gusts:</b>                | 12 knots /                       | <b>Turbulence Type Forecast/Actual:</b>     | /                 |
| <b>Wind Direction:</b>                  | 190°                             | <b>Turbulence Severity Forecast/Actual:</b> | /                 |
| <b>Altimeter Setting:</b>               | 29 inches Hg                     | <b>Temperature/Dew Point:</b>               | 13°C / 1°C        |
| <b>Precipitation and Obscuration:</b>   | No Obscuration; No Precipitation |   |                   |
| <b>Departure Point:</b>                 | , MN (MN69)                      | <b>Type of Flight Plan Filed:</b>           | None              |
| <b>Destination:</b>                     |                                  | <b>Type of Clearance:</b>                   | None              |
| <b>Departure Time:</b>                  | 10:26 Local                      | <b>Type of Airspace:</b>                    | Class G           |

## Airport Information

|                             |                    |                                  |                |
|-----------------------------|--------------------|----------------------------------|----------------|
| <b>Airport:</b>             | MAPLE AIRPORT MN69 | <b>Runway Surface Type:</b>      |                |
| <b>Airport Elevation:</b>   | 1026 ft msl        | <b>Runway Surface Condition:</b> |                |
| <b>Runway Used:</b>         | 0                  | <b>IFR Approach:</b>             | None           |
| <b>Runway Length/Width:</b> |                    | <b>VFR Approach/Landing:</b>     | Forced landing |

## Wreckage and Impact Information

|                            |         |                             |                         |
|----------------------------|---------|-----------------------------|-------------------------|
| <b>Crew Injuries:</b>      | 1 Minor | <b>Aircraft Damage:</b>     | Substantial             |
| <b>Passenger Injuries:</b> | 1 Minor | <b>Aircraft Fire:</b>       | None                    |
| <b>Ground Injuries:</b>    | N/A     | <b>Aircraft Explosion:</b>  | None                    |
| <b>Total Injuries:</b>     | 2 Minor | <b>Latitude, Longitude:</b> | 44.99961,-93.65921(est) |

## Administrative Information

|  |   |
|--|---|
| <b>Investigator In Charge (IIC):</b>     | Malinowski, Edward  |
| <b>Additional Participating Persons:</b> | GLENN BLOOMQUIST; MINNEAPOLIS , MN  |
| <b>Original Publish Date:</b>            | May 17, 2001  |
| <b>Last Revision Date:</b>               |   |
| <b>Investigation Class:</b>              | <a href="#">Class</a>   |
| <b>Note:</b>                             | The NTSB traveled to the scene of this accident.  |
| <b>Investigation Docket:</b>             | <a href="https://data.ntsb.gov/Docket?ProjectID=48897">https://data.ntsb.gov/Docket?ProjectID=48897</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](#).