Aviation Investigation Final Report

Location:	MAPLE PLAIN, Minnesota	**Accident Number:**	CHI00LA105
Date & Time:	April 2, 2000, 10:26 Local	**Registration:**	N196KW
Aircraft:	Weinzierl TITAN TORNADO II	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Minor
Flight Conducted Under:	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 climed to about 200 ft. when the engine stoped 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 climed to about 200 ft. when the engine stoped 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

Certificate:	Private	**Age:**	33,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 5, 1999
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	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

Aircraft Make:	Weinzierl	**Registration:**	N196KW
Model/Series:	TITAN TORNADO II TITAN TORN	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	D96618SOK020
Landing Gear Type:	Tricycle	**Seats:**	
Date/Type of Last Inspection:	Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Rotax
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	
Registered Owner:	KEVIN LEON WEINZIERL	**Rated Power:**	80 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	MSP ,841 ft msl	**Distance from Accident Site:**	21 Nautical Miles
Observation Time:	10:53 Local	**Direction from Accident Site:**	111°
Lowest Cloud Condition:	Unknown	**Visibility**	10 miles
Lowest Ceiling:	Broken / 11000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	13°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	, MN (MN69)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	10:26 Local	**Type of Airspace:**	Class G

Airport Information

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

Wreckage and Impact Information

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

Administrative Information

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