



# Aviation Investigation Final Report

<b>Location:</b>	FREDRICKSBURG, Texas	<b>Accident Number:</b>	FTW94LA248
<b>Date &amp; Time:</b>	July 25, 1994, 13:00 Local	<b>Registration:</b>	N845H
<b>Aircraft:</b>	SCORPION 133	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Serious
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

THE NON-CERTIFICATED PILOT WAS PRACTICING HOVERING HIS HOMEBUILT HELICOPTER. AFTER 20 MINUTES OF PRACTICE, THERE WAS A HARD TOUCHDOWN ON THE REAR PORTION OF THE LEFT SKID. THE SKID COLLAPSED AND THE TAIL ROTOR STRUCK THE GROUND. AT THAT TIME THE PILOT TURNED AND LOOKED BACK TOWARD THE TAIL ROTOR AND WAS STRUCK IN THE FACE BY A TAIL ROTOR BLADE. THE PILOT REPORTED WIND FROM THE SOUTH AT 15 MILES PER HOUR, GUSTING TO 20. HE ALSO RELATED THAT A GUST OF WIND CAUGHT THE HELICOPTER WHILE HE WAS HOVERING ABOUT 18 INCHES ABOVE THE GROUND.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S INADEQUATE COMPENSATION FOR WIND CONDITIONS. FACTORS WERE THE GUSTY WIND AND THE NON-CERTIFICATED PILOT'S INADEQUATE TRAINING.

## Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: HOVER

### Findings

1. (F) WEATHER CONDITION - GUSTS
2. (C) COMPENSATION FOR WIND CONDITIONS - INADEQUATE - PILOT IN COMMAND

3. (F) INADEQUATE TRAINING - PILOT IN COMMAND  
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Occurrence #2: HARD LANDING  
Phase of Operation: LANDING - FLARE/TOUCHDOWN

## Factual Information

On July 25, 1994, approximately 1300 central daylight time, a Scorpion 133, N845H, was substantially damaged during hovering operations at Fredricksburg, Texas. The non-certificated pilot was the owner, builder, and operator. The pilot sustained serious injuries. Weather at the time of the accident was visual meteorological conditions.

Witnesses and family members reported that the pilot was practicing hover operations when he made contact with the ground. The first and second contact resulted in no damage; however, the third ground contact resulted in the left skid breaking and the tail rotor striking the ground. Following the skid failure the pilot looked outside and to the rear of the aircraft to see what damage had occurred, at that time he was struck in the face by a tail rotor blade. The strike resulted in the pilot sustaining serious injuries and a loss of consciousness.

The pilot reported wind from the south gusting to 20 miles per hour. He further stated in his enclosed report that while hovering about 18 inches off the ground a gust of wind caught the aircraft.

The 13 year old daughter of the pilot observed the event. When the skid collapsed the aircraft leaned over to the right, bringing the main rotor tip path close to the ground. The engine continued to run after the pilot lost consciousness. The daughter crawled under the main rotors and shut down the aircraft.

### Pilot Information

<b>Certificate:</b>	None	<b>Age:</b>	48, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Left
<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>	None None	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	50 hours (Total, all aircraft), 50 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	SCORPION	<b>Registration:</b>	N845H
<b>Model/Series:</b>	133 133	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	8458
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	July 25, 1994 Continuous airworthiness	<b>Certified Max Gross Wt.:</b>	1350 lbs
<b>Time Since Last Inspection:</b>	36 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	4 Hrs	<b>Engine Manufacturer:</b>	ROTORWAY
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	RW133
<b>Registered Owner:</b>	ITRI, DONALD	<b>Rated Power:</b>	140 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) 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>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	13 knots / 17 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	180°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>		<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	11:40 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious	<b>Latitude, Longitude:</b>	30.269124,-98.869239(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Ellis, Matthew
<b>Additional Participating Persons:</b>	JERRY H VIRDEN; SAN ANTONIO , TX
<b>Original Publish Date:</b>	February 24, 1995
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=19121">https://data.nts.gov/Docket?ProjectID=19121</a>

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