Aviation Investigation Final Report

Location:	WEST CHICAGO, Illinois	**Accident Number:**	CHI98LA166
Date & Time:	May 14, 1998, 15:35 Local	**Registration:**	N86238
Aircraft:	Enstrom F28	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The helicopter was substantially damaged during a hard landing and subsequent roll over during a positioning flight at the DuPage Airport. The solo student was practicing touch-and-goes on runway 19L when he asked for clearance to a Fixed Base Operator near runway 33. Reported weather, taken after the accident, recorded the winds from 140 at 9 knots. The pilot stated 'As I started to land, I know I had gotten myself in a bad situation when I realized my rate of descent was just over 500 FPM with slow forward airspeed.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the student pilot attempting a tailwind landing and improper compensation for the wind resulting in too high of a sink rate and the hard landing.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. WEATHER CONDITION - TAILWIND
2. PROPER DESCENT RATE - NOT OBTAINED/MAINTAINED - PILOT IN COMMAND
3. IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND

Factual Information

On May 14, 1998, at 1535 central daylight time an Enstrom F28 helicopter, N86238, piloted by a student pilot on a solo flight, was substantially damaged during a hard landing and subsequently rolled over at the DuPage Airport, West Chicago, Illinois. The 14 CFR Part 91 training flight was not operating under a flight plan. Visual meteorological conditions prevailed at the time of the accident. The student reported no injuries. The flight was positioning from runway 19L to near a FBO and was executing a downwind approach when the accident occurred.

Weather reported 8 minutes after the accident on field were: winds 140 degrees magnetic at 9 knots; visibility 10 statute miles; sky clear; temperature 29 degrees C; dew point 19 degrees C; altimeter 29.99 inches of mercury.

According to a written statement, the pilot flew to DuPage to practice touch-and-goes. After completing a touch-and-goes the pilot requested to re-position to the fixed base operator (FBO) on the north side of the airport. "I then asked permission to go to the [FBO]. He gave me permission and told me to go to runway 33. As I made my way over to runway 33, I thought to myself, why is he having me land here with such a strong tailwind? But I made my approach anyway. As I started to land I knew that I had gotten myself into a bad situation when I realized my rate of descent was just over 500 FPM (feet a minute) with slow forward airspeed. That's when the controls felt sluggish with some vibrations and the cyclic had a little shake to it. I thought to myself, I need to get out of this. But to do that, I would have had to increase my forward airspeed and that, I felt, could have put myself and others at great risk because there was traffic landing on both runways in front of me, 19-Left and 19-Right. I then felt the loss of control becoming greater so I made the decision to move north, away from runway 33 to a large soft grassy area to ensure that there was no risk of any person or object being put in danger except for myself and my helicopter. After I made that decision, things happened very quickly. I put a lot of left pedal in, hoping to swing the front end of my ship around into the wind while, at the same time, increasing left cyclic. The result was hitting the ground hard pointed in a W-SW direction with the right landing gear and the right side of the ship taking on the brunt of the contact."

Pilot Information

Certificate:	Student	**Age:**	34,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
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 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	March 23, 1998
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	45 hours (Total, all aircraft), 45 hours (Total, this make and model), 4 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Enstrom	**Registration:**	N86238
Model/Series:	F28 F28	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	737
Landing Gear Type:	Skid	**Seats:**	3
Date/Type of Last Inspection:	May 11, 1998 100 hour	**Certified Max Gross Wt.:**	2600 lbs
Time Since Last Inspection:	7 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2094 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Not installed	**Engine Model/Series:**	HIO-360-F1AD
Registered Owner:	AERO VIEW INCORPORATED	**Rated Power:**	225 Horsepower
Operator:	OLIVER'S HELICOPTERS	**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:	DPA ,758 ft msl	**Distance from Accident Site:**	
Observation Time:	15:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	140°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	28°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	VFR
Departure Time:	15:00 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	WEST CHICAGO-DUPAGE DPA	**Runway Surface Type:**	Asphalt
Airport Elevation:	758 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	33	**IFR Approach:**	None
Runway Length/Width:	3210 ft / 100 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	41.879482,-88.219757(est)

Administrative Information

Investigator In Charge (IIC):	Dinwiddie, Carl
Additional Participating Persons:	ROBERT DONAHUE;
Original Publish Date:	October 24, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=10887