



# Aviation Investigation Final Report

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<b>Location:</b>	Tampa, Florida	<b>Accident Number:</b>	GAA19CA121
<b>Date &amp; Time:</b>	January 29, 2019, 18:20 Local	<b>Registration:</b>	N680DG
<b>Aircraft:</b>	Eurocopter AS 350	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Hard landing	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Public aircraft		

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## Analysis

The flight instructor reported that, during preparation for the pilot's helicopter commercial checkride, they were going to practice autorotation procedures. He added that, during the second autorotation, he saw that the rotor rpm had dropped significantly and that the pilot was pulling up on the collective. He immediately took command of the flight controls and attempted to lower the collective. Subsequently, the helicopter landed hard, bounced, yawed right, bounced again, and then came to rest on the right side of the runway.

The helicopter sustained substantial damage to the tailboom.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the helicopter that would have precluded normal operation.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's improper landing flare while practicing autorotations, which resulted in a hard, bounced landing.

## Findings

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<b>Aircraft</b>	Landing flare - Not attained/maintained
<b>Personnel issues</b>	Aircraft control - Pilot

## Factual Information

### History of Flight

Landing	Miscellaneous/other
Landing	Attempted remediation/recovery
Landing	Hard landing (Defining event)
Landing	Loss of control on ground

### Flight instructor Information

<b>Certificate:</b>	Commercial; Flight instructor; Private	<b>Age:</b>	49, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Helicopter; Instrument helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	March 7, 2018
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	December 8, 2018
<b>Flight Time:</b>	(Estimated) 3180.6 hours (Total, all aircraft), 2972.8 hours (Pilot In Command, all aircraft), 223 hours (Last 90 days, all aircraft), 33 hours (Last 30 days, all aircraft), 3.7 hours (Last 24 hours, all aircraft)		

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	35, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	September 4, 2018
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	July 5, 2018
<b>Flight Time:</b>	(Estimated) 381.7 hours (Total, all aircraft), 131.6 hours (Total, this make and model), 278.7 hours (Pilot In Command, all aircraft), 69 hours (Last 90 days, all aircraft), 27 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Eurocopter	<b>Registration:</b>	N680DG
<b>Model/Series:</b>	AS 350 B2	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	2005	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	3904
<b>Landing Gear Type:</b>	High skid	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	November 21, 2018 100 hour	<b>Certified Max Gross Wt.:</b>	4960 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Turbo shaft
<b>Airframe Total Time:</b>	5494 Hrs at time of accident	<b>Engine Manufacturer:</b>	Turbomeca (Safran)
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	Arriel 1D1
<b>Registered Owner:</b>	Hillsborough County Sheriffs Office	<b>Rated Power:</b>	732 Horsepower
<b>Operator:</b>	Hillsborough County Sheriffs Office	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KVDF, 22 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	18:15 Local	<b>Direction from Accident Site:</b>	350°
<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>	5 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	260°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.02 inches Hg	<b>Temperature/Dew Point:</b>	18°C / 7°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Tampa, FL (VDF)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Tampa, FL (VDF)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	18:05 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	TAMPA EXECUTIVE VDF	<b>Runway Surface Type:</b>	Asphalt;Concrete
<b>Airport Elevation:</b>	21 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	23	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	5000 ft / 100 ft	<b>VFR Approach/Landing:</b>	Simulated forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<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>	2 None	<b>Latitude, Longitude:</b>	28.01111,-82.344444(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Swenson, Eric
<b>Additional Participating Persons:</b>	Tim Annis; FAA; Tampa, FL
<b>Original Publish Date:</b>	September 26, 2019
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=98927">https://data.nts.gov/Docket?ProjectID=98927</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.

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