



# Aviation Investigation Final Report

<b>Location:</b>	Daytona Beach, Florida	<b>Accident Number:</b>	ERA24LA079
<b>Date &amp; Time:</b>	December 30, 2023, 14:04 Local	<b>Registration:</b>	N828AK (A1); FA3XNWMRAN (A2)
<b>Aircraft:</b>	ROBINSON HELICOPTER R44 (A1); DJI Mavic 2 (A2)	<b>Aircraft Damage:</b>	Substantial (A1); Destroyed (A2)
<b>Defining Event:</b>	Midair collision	<b>Injuries:</b>	3 None (A1); N/A (A2)
<b>Flight Conducted Under:</b>	Part 91: General aviation - Other work use (A1); Part 107: Small UAS (A2)		

## Analysis

The pilot of the helicopter reported that while flying at an indicated altitude around 200 to 300 ft, while on approach to land at an off-airport landing zone, he saw a black “drone” [unmanned aerial system (UAS)] in front of his windscreen. He attempted to avoid the UAS but was unable and the UAS impacted the main rotor resulting in substantial damage to a main rotor blade. The pilot reported that there were no preaccident mechanical malfunctions or failures with the helicopter that would have precluded normal operation.

The UAS operator reported that he was conducting operations over a construction site. The area was inside of the class C airspace of a nearby airport and the UAS operator was using a Federal Aviation Administration Certificate of waiver or authorization (COA) that had been previously obtained by the construction company who hired him. The UAS operator reported that he was flying at an altitude of 180 ft, and that before the flight he had not realized that this altitude was above the maximum altitude of 150 ft imposed by the COA. The COA also required the UAS operator to notify the air traffic control tower at the nearby airport at least 15 minutes prior to the proposed start time of any operations. The UAS operator stated, and a review of contact records by the air traffic control tower confirmed, that no call was received from the UAS operator notifying them of the operation. Additionally, the drone operations manager for the construction company who contracted the UAS operator reported that the operator was supposed to check in with the on-site supervisor before conducting operations and stated that this did not happen on the day of the accident.

## Probable Cause and Findings

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

The UAS operator's failure to operate within the limitations of the COA that he was using to operate inside class C airspace, which resulted in a collision between the UAS and the helicopter.

### Findings

<b>Personnel issues (A1)</b>	Decision making/judgment - Pilot of other aircraft
<b>Personnel issues (A1)</b>	Knowledge of procedures - Pilot of other aircraft
<b>Personnel issues (A2)</b>	Decision making/judgment - Pilot
<b>Personnel issues (A2)</b>	Knowledge of procedures - Pilot

## Factual Information

### History of Flight

<b>Approach (A1)</b>	Midair collision (Defining event)
<b>Maneuvering (A2)</b>	Midair collision

### Pilot Information (A1)

<b>Certificate:</b>	Commercial	<b>Age:</b>	29, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	March 28, 2023
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	May 19, 2023
<b>Flight Time:</b>	342.5 hours (Total, all aircraft), 203.9 hours (Total, this make and model), 298 hours (Pilot In Command, all aircraft), 121.7 hours (Last 90 days, all aircraft), 30.3 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

### Pilot Information (A2)

<b>Certificate:</b>	Remote	<b>Age:</b>	57, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	None
<b>Other Aircraft Rating(s):</b>	Unmanned (sUAS)	<b>Restraint Used:</b>	None
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Unknown	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	August 1, 2023
<b>Flight Time:</b>	(Estimated) 450 hours (Total, all aircraft), 450 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information (A1)

<b>Aircraft Make:</b>	ROBINSON HELICOPTER	<b>Registration:</b>	N828AK
<b>Model/Series:</b>	R44	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	2007	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	1689
<b>Landing Gear Type:</b>	None; Skid	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	December 11, 2023 100 hour	<b>Certified Max Gross Wt.:</b>	2400 lbs
<b>Time Since Last Inspection:</b>	5 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	4964 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	O-540-F1B5
<b>Registered Owner:</b>	OLD CITY HELICOPTER SALES LLC	<b>Rated Power:</b>	
<b>Operator:</b>	Tunica Helicopters LLC	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	Leading Edge Helicopters	<b>Operator Designator Code:</b>	

## Aircraft and Owner/Operator Information (A2)

<b>Aircraft Make:</b>	DJI	<b>Registration:</b>	FA3XNWMRAN
<b>Model/Series:</b>	Mavic 2 PRO	<b>Aircraft Category:</b>	Unknown
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	None	<b>Serial Number:</b>	163DF81001N020
<b>Landing Gear Type:</b>		<b>Seats:</b>	0
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	4
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	
<b>Operator:</b>	On file	<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>	DAB,26 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	13:53 Local	<b>Direction from Accident Site:</b>	27°
<b>Lowest Cloud Condition:</b>	Few / 5000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	14 knots / 19 knots	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	250°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.11 inches Hg	<b>Temperature/Dew Point:</b>	15°C / 4°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Daytona Beach, FL (A1); Daytona Beach, FL (A2)	<b>Type of Flight Plan Filed:</b>	None (A1)
<b>Destination:</b>	Daytona Beach, FL (A1); Daytona Beach, FL (A2)	<b>Type of Clearance:</b>	VFR (A1); None (A2)
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class C (A1); Class C (A2)

## Airport Information

<b>Airport:</b>	DAYTONA BEACH INTERNATIONAL DAB	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	34 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Unknown

## Wreckage and Impact Information (A1)

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	2 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	3 None	<b>Latitude, Longitude:</b>	29.163165,-81.07824(est)

## Wreckage and Impact Information (A2)

<b>Crew Injuries:</b>	N/A	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	N/A	<b>Latitude, Longitude:</b>	29.163165,-81.07824(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Young, Joshua
<b>Additional Participating Persons:</b>	Mitch Salley; FAA/FSDO; Orlando, FL
<b>Original Publish Date:</b>	January 25, 2024
<b>Last Revision Date:</b>	February 20, 2024
<b>Investigation Class:</b>	<a href="#">Class 4</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=193587">https://data.nts.gov/Docket?ProjectID=193587</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](#).