Aviation Investigation Final Report

Location:	Daytona Beach, Florida	**Accident Number:**	ERA24LA079
Date & Time:	December 30, 2023, 14:04 Local	**Registration:**	N828AK (A1); FA3XNWMRAN (A2)
Aircraft:	ROBINSON HELICOPTER R44 (A1); DJI Mavic 2 (A2)	**Aircraft Damage:**	Substantial (A1); Destroyed (A2)
Defining Event:	Midair collision	**Injuries:**	3 None (A1); N/A (A2)
Flight Conducted Under:	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 wavier 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

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

Factual Information

History of Flight

Approach (A1)	Midair collision (Defining event)
Maneuvering (A2)	Midair collision

Pilot Information (A1)

Certificate:	Commercial	**Age:**	29,Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	March 28, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	May 19, 2023
Flight Time:	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)

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

Aircraft and Owner/Operator Information (A1)

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

Aircraft and Owner/Operator Information (A2)

Aircraft Make:	DJI	**Registration:**	FA3XNWMRAN
Model/Series:	Mavic 2 PRO	**Aircraft Category:**	Unknown
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	None	**Serial Number:**	163DF81001N020
Landing Gear Type:		**Seats:**	0
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	4
Airframe Total Time:		**Engine Manufacturer:**	
ELT:	Not installed	**Engine Model/Series:**	
Registered Owner:	On file	**Rated Power:**	
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	DAB,26 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	13:53 Local	**Direction from Accident Site:**	27°
Lowest Cloud Condition:	Few / 5000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	14 knots / 19 knots	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.11 inches Hg	**Temperature/Dew Point:**	15°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Daytona Beach, FL (A1); Daytona Beach, FL (A2)	**Type of Flight Plan Filed:**	None (A1)
Destination:	Daytona Beach, FL (A1); Daytona Beach, FL (A2)	**Type of Clearance:**	VFR (A1); None (A2)
Departure Time:		**Type of Airspace:**	Class C (A1); Class C (A2)

Airport Information

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

Wreckage and Impact Information (A1)

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

Wreckage and Impact Information (A2)

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

Administrative Information

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