

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



CEN23FA333

IMAGE RECORDER

Specialist's Factual Report

May 14, 2024

A. ACCIDENT

Location: Oshkosh, Wisconsin
Date: July 29, 2023
Time: 12:26 Central Daylight time
Helicopter: Rotorway 162F, N193AZ
Gyrocopter: ELA Eclipse 10, N221EL

B. IMAGE RECORDER SPECIALIST

Specialist: Christopher Babcock
Aerospace Engineer
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

In agreement with the Investigator-In-Charge, an image recorder group was not convened and a summary was prepared.

The NTSB Vehicle Recorder Division received the following video files:

Image/Video File from N193AZ: GX023409.mp4
Image/Video File from N221EL: 20230729_121429_1.mp4

1.1 Device Recording Description

The video from N193AZ was recovered from a GoPro camera. The video recovered from N221EL was recovered from an unknown personal electronic device (PED). Pertinent video properties are indicated in Table 1.

Table 1. Video properties.

	GX023409.mp4 (Helicopter N193AZ)	20230729_121429_1.mp4 (Gyrocopter N221EL)
Image Resolution (pixels)	5312x2988	1080x1920
Image Frame Rate (frames per second)	29.97	29.97
Audio Sampling Rate (Hertz)	48000 Stereo	48000 Stereo

2.0 Timing and Correlation

The timing of the files was correlated with Central Daylight Time by using the time of impact on each video and aligning that event with available GPS and ADS-B data that showed when both aircraft collided.

3.0 Summary of Recording Contents

The appendix includes a summary of events from the helicopter and gyrocopter collision.

Submitted by:

Christopher Babcock
Aerospace Engineer

Appendix

Summary of events recorded on video from midair collision between a Rotorway 162F helicopter, N192AZ, and an ELA Eclipse 10 gyrocopter, A221EL.

LEGEND

Gyro	Event from gyrocopter video
Heli	Event from helicopter video
-R	Voice identified right seat occupant of the helicopter
-?	Voice unidentified
-RDO	Radio transmission
*	Unintelligible word
[]	Editorial insertion

Note 1: Times are expressed in Central Daylight Time.

Note 2: Generally, only radio transmissions to and from the incident aircraft were transcribed.

Note 3: Words shown with excess vowels, letters, or drawn out syllables are a phonetic representation of the words as spoken.

Note 4: A non-pertinent word, where noted, refers to a word not directly related to the operation, control or condition of the aircraft.

Appendix

Time and Source	Helicopter Video Events	Time and Source	Gyrocopter Video Events
12:07:34.0			
	START OF RECORDING		
	START OF TRANSCRIPT		
12:07:34.0			
Heli	[the helicopter video started on the ground in the grass northeast of the intersection of W Ripple Ave. and Knapp St. audio was present coming from the intercom system, but the gain was low and conversation was inaudible. an occupant was seated at each seat with a headset on. a spinning rotor was visible reflecting off of a tablet computer mounted to the cockpit frame in front of the left seat. the instrument panel was visible and the altimeter was configured to display 0 while on the ground.]		
12:08:00.0			
Heli	[the left seat occupant exited the helicopter and a different individual wearing sunglasses took the left seat and put on a headset and safety harness. when the right seat occupant leaned forward, a safety harness was visible.]		
12:10:00.5			
Heli	[the right seat occupant pointed out different instruments.]		
12:10:12.7			
Heli	[the left seat occupant manipulated the rudder pedals.]		

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Time and Source	Helicopter Video Events	Time and Source	Gyrocopter Video Events
12:10:35.0 Heli	[the helicopter lifted off the ground. the left seat occupant appeared to be manipulating the control stick while the right seat occupant's hand was loosely gripping the right control stick. the helicopter began hover taxiing to the southeast and then to the south.]		
12:11:23.6 Heli-RDO-R	Rotorcraft Tower. black Rotorway's in the L-Z ready for departure. understand short course.		
12:11:29.2 Heli	[the helicopter made a 180 degree right turn to face north.]		
12:11:53.0 Heli	[the helicopter began moving forward and ascending and making left hand traffic in the ultralight pattern.]		
12:14:12.2 Heli-RDO-R	Rotorcraft Tower. black Rotorway's at the water tank. low pass.		
12:14:48.9 Heli	[the helicopter made a low approach to the ultralight runway and started another left hand circuit of the ultralight pattern. both occupants' hands were on the controls.]		
12:16:59.0 Heli-RDO-R	tower. black Rotorway at the water tank. and low pass.		

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Time and Source	Helicopter Video Events	Time and Source	Gyrocopter Video Events
12:17:45.0 Heli	[the helicopter made a low approach to the ultralight runway and started another left hand circuit of the ultralight pattern.]		
12:18:54.2 Heli-RDO-R	and tower uh black Rotorway's going back to the L-Z.		
12:18:56.3 Heli	[the helicopter began turning to the left and flying east and then northeast bound.]		
12:20:58.6 Heli	[the helicopter landed back at its original departure point facing east.]		
12:21:55.5 Heli	[the left seat occupant exited the helicopter and a different individual wearing an orange safety vest and baseball cap took the left seat and put on a headset and safety harness.]		
12:23:48.3 Heli	[the helicopter hover taxied to the east and south. both occupants' right hands were on their respective cyclic controls. the right seat occupant was manipulating the collective.]		
12:23:53.6 Heli-RDO-R	Rotorcraft Tower. black Rotorway's in the uh L-Z ready for departure.		
12:24:05.4 Heli-R	U-P-S. Fedex.		

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Time and Source	Helicopter Video Events	Time and Source	Gyrocopter Video Events
12:24:17.1 Heli	[the helicopter took off and turned to the north and ascended and began a left hand circuit in the ultralight pattern.]		
12:24:41.4 Heli	[the helicopter turned southbound.]		
12:25:17.9 Heli	[two rotorcraft were visible through the windscreen. a dark colored rotorcraft was crossing from right to left at the approximate 11 o' clock position followed by a lighter colored rotorcraft crossing from right to left at the approximate 12 o' clock position. the left seat occupant pointed in the direction lighter colored rotorcraft (the accident gyrocopter was painted white). see Figure 1 for relative position of helicopter and gyrocopter at this approximate time.]		
12:25:31.6 Heli	[the helicopter started turning to the northeast.]		
		12:25:55.7 Gyro	[the video from the gyrocopter started. the video was in portrait mode, looking out the left side of the aircraft. audio was present. the controls and occupants were not visible]
		12:26:14.1 Gyro-?	**.
		12:26:15.3 Gyro	[gyro starts left turn accompanied by the sound of an increase in engine rpm]
12:26:16.0 Heli	[the helicopter started turning to the north.]		

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Time and Source	Helicopter Video Events	Time and Source	Gyrocopter Video Events
12:26:16.9 Heli-RDO-R	black Rotorway at the water tower low pass.		
		12:26:23.3 Gyro-?	nice turn.
		12:26:27.6 Gyro-?	**.
12:26:29.5 Heli	[the right seat occupant flinched as undercarriage and right side of gyrocopter, crossing from left to right in a left bank, are first visible to the camera through the helicopter windscreen.]		
12:26:29.8 Heli	[sound of impact. the helicopter was approximately at zero roll angle. the instruments indicated the helicopter was at approximately 225 feet altitude above ground level in a 200 foot per minute descent at an indicated airspeed of 72 miles per hour. engine instruments were all in the green range.]	12:26:29.8 Gyro	[sound of impact as the gyro had completed a 360 degree left turn.]
12:26:32.4 Heli	[helicopter video froze while audio continued.]		
12:26:33.7 Heli	[there was a change in the characteristic of helicopter audio which began to record ambient sounds and no longer recorded intercom audio.]		
		12:26:33.8 Gyro	[end of gyro video.]

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Time and Source	Helicopter Video Events	Time and Source	Gyrocopter Video Events
12:26:36.4 Heli	[sounds of approaching bystanders and overhead aircraft noise.]		
12:27:52.2 Heli	[sounds of sirens.]		
12:31:02.9 Heli	[end of helicopter audio.]		
12:31:02.9 END OF TRANSCRIPT END OF RECORDING			

Appendix



Figure 1. Position and direction of flight at approximately 12:25:21.¹

¹ Data used to generate this figure can be found in attachments to the Global Positioning System Specialist's Factual Report
IMAGE RECORDER
SPECIALIST'S FACTUAL REPORT