

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA23FA352

VIDEO STUDY

July 31, 2025

A. ACCIDENT

Description: Helicopter in-flight fire and impact with apartment building
Location: Pompano Beach, Florida
Date: August 28, 2023
Time: 0844 Eastern Daylight Time (EDT)
Aircraft: Eurocopter Deutschland GMBH EC135T1, N109BC
Operator: Broward County Sheriff's Office

B. VEHICLE PERFORMANCE SPECIALIST

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C. SUMMARY

On August 28, 2023, about 0844 eastern daylight time, a Eurocopter Deutschland GMBH EC135T1 helicopter, N109BC, was destroyed when it was involved in an accident near Pompano Beach, Florida. The commercial pilot sustained minor injuries. One paramedic onboard and a resident of an apartment building were fatally injured, while a second paramedic onboard was seriously injured. The helicopter was operated by the Broward County Sheriff's Office as a Title 14 *Code of Federal Regulations* Part 135 air medical flight.

NTSB vehicle performance specialists were requested to review two witness videos (a subset of all witness videos available) and an Air Traffic Control (ATC) audio recording and document factual evidence pertinent to the rotorcraft flight path and in-flight fire event.

1. Ball Field Video

The ball field video camera captured portions of the N109BC westbound and eastbound flight segments. Cropped and scaled images extracted from the ball field video camera recording are presented in sequential order in Attachment 1. The westbound flight segment documented by frames 0 through 35 (of 550 total frames) depicts N109BC traveling west, transitioning from no smoke trail (frames 0-9) to a "possible but discontinuous smoke trail" (frames 10-29) to abrupt, follow-on frame content updates showing no smoke trail (frames 30-35). The candidate smoke trail pixel content in frames 10 through 29 is likely an image compression artifact because it lacks the commonly observed periodic, continuous, descending, dissipating, and/or wind drift features of airborne smoke trails (see exemplar smoke trail in frames 256-494). The composite image in Figure 1 shows that the smoke trail artifact visible in frames 11-29 is no longer present after the pixels in frame 30 are updated. This behavior is consistent with the candidate smoke trail being the result of video compression effects rather than a real object in the video. Similarly, the disjoint helicopter fuselage position content in frames 92-119 (repeated and/or skipped fuselage content) appears to be due to image compression effects.

Preceding the emergence of N109BC eastbound, ball field video camera frames 75 through 115 (of 1,355 total frames) illustrate stale, static positions of a bird in flight (content that appears to be splitting due to pixels not updating). However, frames 256-494 illustrate that N109BC generated genuine, commonly observed smoke trail features during the flight segment that preceded the

helicopter partial tail boom separation, spin, and impact. An exemplar smoke trail frame is presented in Figure 2. There is also evidence of a flock of birds flying in the general area between frames 619 and 672 (of 1,355 total frames).



Figure 1. This composite image shows that the candidate smoke trail content suddenly disappears from the video when the pixels in the location of the candidate smoke trail are updated.



Figure 2: Exemplar N109BC smoke trail documented by ball field camera frame 295.

2. Annie Gillis Park Video

The Annie Gillis Park video camera captured portions of the N109BC westbound flight segment. Cropped and scaled images extracted from the Annie Gillis Park video are documented in sequential order in Attachment 2. Westbound frames 0 through 140 and 396 through 460 (of 490 total frames) appear to show the helicopter flying in and out of clouds. This interpretation of the Annie Gillis Park video content is refuted by meteorological, Automatic Dependent Surveillance Broadcast (ADS-B), and other video evidence indicating that N109BC was continuously operating in visual conditions, meaning that video compression artifacts are present in frames 0 through 140 and 396 through 460 of the Annie Gillis Park video.

The content in westbound frames 461 through 490 (of 499 total frames) indicates that N109BC generated genuine, commonly observed continuous, descending, dissipating, and/or wind drift features of airborne smoke trails. An exemplar smoke trail frame is presented in Figure 3.



Figure 3: Exemplar N109BC smoke trail documented by Annie Gillis Park camera frame 479.

3. Air Traffic Control Audio Recording

The Air Traffic Control (ATC) audio recording for the Pompano Beach tower local control position from 12:14:08 to 13:06:57 UTC on August 28, 2023 was provided to the NTSB investigation team. Pertinent communication events between N109BC and the local control position are summarized in Table 1.

Table 1: Summary of N109BC communication with Pompano Beach tower local control position

ATC recording, elapsed time				UTC					
mm	ss	elapsed	delta	Event	hh	mm	ss	elapsed	delta
0	50	50		Start time of ATC recording	12	14	8	44048	
28	45	1725	1675	Departure request/takeoff clearance	12	42	3	45723	1675
29	43	1783	58	Frequency change approved, proceed on course	12	43	1	45781	58
30	25	1825	42	Reported engine failure/cleared to land runway 6	12	43	43	45823	42