



# Aviation Investigation Final Report

|                                |                                    |                         |             |
|--------------------------------|------------------------------------|-------------------------|-------------|
| <b>Location:</b>               | Potrero, California                | <b>Accident Number:</b> | WPR25FA062  |
| <b>Date &amp; Time:</b>        | December 16, 2024, 10:30 Local     | <b>Registration:</b>    | N617GC      |
| <b>Aircraft:</b>               | AMERICAN EUROCOPTER LLC<br>AS350B3 | <b>Aircraft Damage:</b> | Substantial |
| <b>Defining Event:</b>         | Medical event                      | <b>Injuries:</b>        | 1 Fatal     |
| <b>Flight Conducted Under:</b> | Public aircraft                    |                         |             |

## Analysis

The pilot was scheduled to conduct a routine Customs and Border Protection (CBP) air-support mission after several days of sick leave. Flight track data indicated that, after about 1.5 hours of flight, the helicopter entered a series of turns and a rapid descent. The final flight track point was about 820 ft above ground level and about 280 ft from the accident site. No further flight track data were available, and no eyewitnesses or surveillance video captured the accident flight.

A signal from an emergency locator transmitter (ELT) was received by a central rescue coordination center operated by the United States military, a typical routing procedure for ELT signals. The United States military subsequently communicated the detection to a division within the helicopter operator responsible for monitoring aircraft and receiving ELT signals. Without delays, the earliest a helicopter could have reached the accident site was about 10 minutes. The response was delayed by the time required to relay the ELT information among the responding organizations and by uncertainty concerning the coordinates supplied to the search crews, who located the wreckage about 53 minutes after the ELT began transmitting. A CBP emergency medical technician began CPR about 4 minutes later. The pilot's autopsy identified a complete transection of the high cervical spinal cord, which would have prevented spontaneous breathing. The pilot also sustained multiple full-thickness heart lacerations and numerous other severe injuries. An NTSB medical analysis determined that the pilot's injuries likely would have been rapidly fatal and that survival would have been highly unlikely even with an optimal rescue response. Therefore, the response time likely did not affect the pilot's survivability.

Postaccident examination of the helicopter revealed no preimpact mechanical anomalies or malfunctions that would have precluded normal operation. The weather was clear with light wind, and the pilot made no radio transmissions reporting a problem or distress. For about the first 1.5 hours of the accident flight, flight track data indicated the pilot was actively and effectively controlling the helicopter while flying alone. The helicopter then entered a series of turns and a rapid descent that did not appear consistent with the preceding flight path or a normal approach to landing. The helicopter's flight track, descent rate, and accident-site signatures indicated that it impacted the ground at a high rate of descent with substantial left-side loading in visual flight conditions without adverse wind. The available flight track data did not show a recovery attempt before the track ended. Given the absence of a preimpact mechanical malfunction, adverse weather, an external collision, or evidence of an intentional maneuver, pilot incapacitation was the most plausible explanation for the loss of control.

The Vehicle and Engine Multifunction Display (VEMD) recorded a main-rotor-speed exceedance of 466 rpm. The manufacturer determined that the exceedance was not associated with an engine power-turbine overspeed and was likely associated with main-rotor desynchronization (i.e., autorotation) during descent. Because no flight-control or cockpit recordings were available, the investigation could not determine the pilot's control inputs or the circumstances that produced the exceedance.

An NTSB medical analysis identified severe multivessel coronary artery disease and evidence of prior heart-muscle damage, which significantly increased the pilot's risk of a sudden impairing or incapacitating cardiovascular event. Although the autopsy did not identify evidence that such an event occurred, an autopsy cannot exclude a sudden cardiovascular event. Heart-rhythm disturbances generally leave no identifiable autopsy evidence, and a heart attack or stroke may leave no such evidence if it occurs shortly before death.

Alternatively, the pilot may have fallen asleep. Before the crash, the helicopter had been operating at a relatively stable altitude and a generally consistent track. The pilot had recently used diphenhydramine, a sedating antihistamine that can cause drowsiness. His recent respiratory illness also may have increased fatigue or sleepiness. However, available evidence was insufficient to determine whether the pilot experienced a cardiovascular event, fell asleep, or became incapacitated for another reason.

In accordance with CBP procedures, a clearance authority stationed at another base approved the flight. The clearance authority had no aviation background and would not have been familiar with the pilot's normal demeanor. The required risk assessment did not address illness, medication use, or other human factors challenges, and the clearance authority did not know the pilot well enough to compare his demeanor with his usual behavior. However, the pilot reported that he had recovered from a cold, felt well, and had no symptoms other than a hoarse voice. The investigation could not determine when he used diphenhydramine or whether the clearance process could have identified or mitigated the condition that led to the

loss of control. Therefore, the evidence was insufficient to identify the clearance decision as a contributing factor.

Based on the available evidence, the pilot likely lost control of the helicopter after becoming incapacitated. The pilot’s cardiovascular disease increased his risk of a sudden incapacitating cardiovascular event, while his use of diphenhydramine and recent illness may have increased his risk of falling asleep. The available evidence was insufficient to determine the specific cause of his incapacitation.

**Probable Cause and Findings**

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

The pilot’s loss of control during cruise flight due to incapacitation for reasons that could not be determined.

| Findings         |                                    |
|------------------|------------------------------------|
| Personnel issues | (general) - Pilot                  |
| Not determined   | (general) - Unknown/Not determined |

# Factual Information

## History of Flight

|         |                                |
|---------|--------------------------------|
| Enroute | Medical event (Defining event) |
| Enroute | Loss of control in flight      |

On December 16, 2024, about 1030 Pacific standard time, an American Eurocopter AS350 B3 helicopter, N617GC, was substantially damaged when it was involved in an accident near Potrero, California. The pilot was fatally injured. The helicopter was operated as a public use aircraft.

According to CBP, during the 2 weeks before the accident, the pilot had taken sick leave on 4 of the previous 6 scheduled workdays. On the Friday before the accident, December 13, another pilot noted that he isolated himself at work because he was still ill and coughing frequently. Three days later, the pilot asked his supervisor for permission to fly alone, which was consistent with his normal routine. His supervisor and another pilot asked whether he felt well enough to fly because his voice was raspy, but the pilot responded that he was “fine.” The pilot then contacted the command duty officer (CDO), who was stationed at another base, to obtain the clearance required by CBP procedures. The CDO asked about the pilot’s hoarse voice, and the pilot responded that he had recently recovered from a cold and had no other symptoms. The CDO then cleared the pilot for the patrol flight.

The helicopter was scheduled for a routine aerial support mission. ADS-B data from the FAA showed that the helicopter (Troy 142) departed Brown Field Municipal Airport, San Diego, California, about 0856 on a westerly heading and subsequently began a climbing right turn to the north. At 0906:54, at an altitude of about 1,000 ft mean sea level (msl), the helicopter turned east and continued to climb as it gradually transitioned to a northeasterly heading. At 0933:59, the helicopter leveled off at about 5,800 ft msl and then turned southeast and descended for about 7 minutes. At 0950:38, the helicopter reached 4,650 ft msl and began another climb, reaching 5,800 ft msl about 14 minutes later.

At 1007:52, the helicopter made an extended left 360° turn, descended to about 4,600 ft msl, and then climbed again to about 5,600 ft msl. At 1021:58, the helicopter turned southwest and leveled off 4 minutes later at 4,300 ft msl. Beginning at 1029:26, over the next 49 seconds the helicopter made two S-turns while descending from 4,200 ft to 3,100 ft msl. The final data point, recorded at 1029:37, was about 820 ft above ground level and 280 ft northeast of the accident site (see figure).

No eyewitnesses or surveillance video captured the helicopter's final movements. After a departure radio call at about 0904, the pilot made no further known radio transmissions.

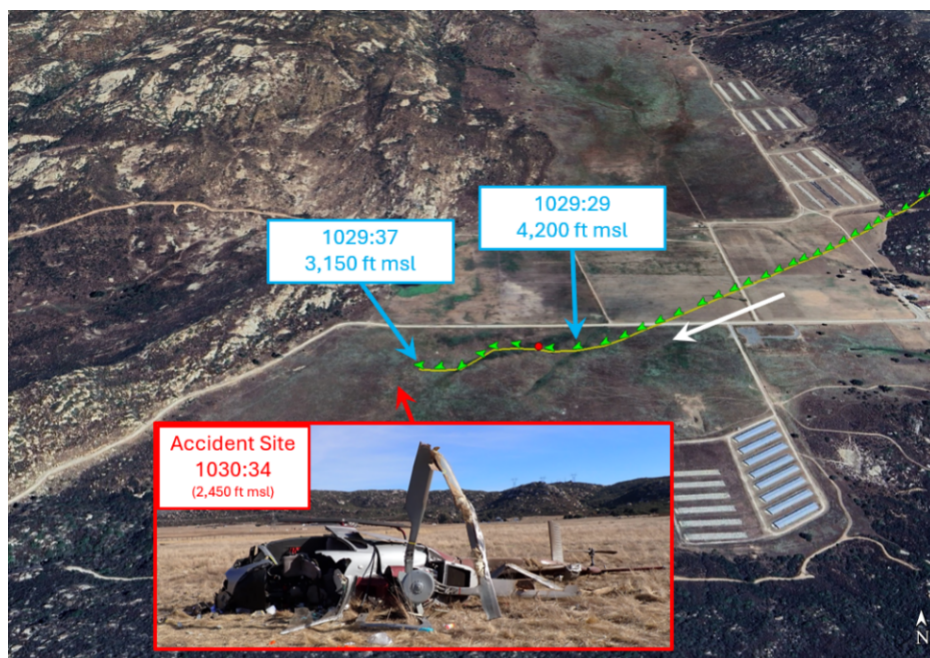


*Figure: ADS-B flight track and accident site.*

### Emergency Response Timeline

According to the Air Force Rescue Coordination Center, it detected the ELT signal for the accident helicopter at 1030:34. It notified the CBP Air and Marine Operations Center (AMOC) at 1035. A timeline provided by CBP indicated that AMOC attempted to contact the helicopter at 1039 and notified Brown Field at 1040. Brown Field attempted to contact the helicopter at 1045 and dispatched Troy 147 to search for it 1 minute later.

Troy 147 headed east and arrived northwest of Potrero about 1050. At 1052, the helicopter passed the accident site and continued northeast. A crewmember aboard Troy 147 reported that AMOC initially provided coordinates in a format that indicated a location in Mexico. AMOC then issued additional coordinates. However, another crewmember retrieved the accident helicopter's ADS-B flight track from a publicly available source, which the crew used to locate the helicopter.

Another CBP pilot stated that he was aboard a UH-60 Black Hawk helicopter, Troy 206, returning to North Island, San Diego, California, when he heard radio traffic attempting to contact the accident helicopter. At 1054, he contacted a colleague, who sent him the coordinates from AMOC. The pilot estimated that the helicopter was 13 minutes away from the location. Troy 206 lifted off from North Island about 1056 and requested the last ELT position from AMOC. Troy 206 located the accident helicopter about 1123 and landed about

1124. Troy 147 and an additional CBP helicopter arrived shortly thereafter, and a CBP emergency medical technician began CPR about 1127.

CAL FIRE personnel arrived on scene about 1132 and assisted with CPR, including the administration of oxygen. According to REACH Air Medical Services, it received the request for air medical support at 1134, departed about 1143, and arrived at 1154 while CPR was in progress.

### Pilot Information

|                                  |                                                                                                                                                                                                     |                                          |                |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------|
| <b>Certificate:</b>              | Airline transport; Commercial                                                                                                                                                                       | <b>Age:</b>                              | 53, Male       |
| <b>Airplane Rating(s):</b>       | Single-engine land; Multi-engine land                                                                                                                                                               | <b>Seat Occupied:</b>                    | Rear           |
| <b>Other Aircraft Rating(s):</b> | Helicopter                                                                                                                                                                                          | <b>Restraint Used:</b>                   | 4-point        |
| <b>Instrument Rating(s):</b>     | Helicopter                                                                                                                                                                                          | <b>Second Pilot Present:</b>             | No             |
| <b>Instructor Rating(s):</b>     | None                                                                                                                                                                                                | <b>Toxicology Performed:</b>             | Yes            |
| <b>Medical Certification:</b>    | Class 2 Without waivers/limitations                                                                                                                                                                 | <b>Last FAA Medical Exam:</b>            | August 7, 2024 |
| <b>Occupational Pilot:</b>       | Yes                                                                                                                                                                                                 | <b>Last Flight Review or Equivalent:</b> | July 18, 2024  |
| <b>Flight Time:</b>              | 4331 hours (Total, all aircraft), 1246 hours (Total, this make and model), 3103 hours (Pilot In Command, all aircraft), 51 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft) |                                          |                |

### Aircraft and Owner/Operator Information

|                                      |                                                       |                                       |                |
|--------------------------------------|-------------------------------------------------------|---------------------------------------|----------------|
| <b>Aircraft Make:</b>                | AMERICAN EUROCOPTER LLC                               | <b>Registration:</b>                  | N617GC         |
| <b>Model/Series:</b>                 | AS350B3                                               | <b>Aircraft Category:</b>             | Helicopter     |
| <b>Year of Manufacture:</b>          | 2009                                                  | <b>Amateur Built:</b>                 |                |
| <b>Airworthiness Certificate:</b>    | Normal                                                | <b>Serial Number:</b>                 | 4676           |
| <b>Landing Gear Type:</b>            | High skid                                             | <b>Seats:</b>                         | 6              |
| <b>Date/Type of Last Inspection:</b> | November 14, 2024                                     | <b>Certified Max Gross Wt.:</b>       | 5225 lbs       |
| <b>Time Since Last Inspection:</b>   |                                                       | <b>Engines:</b>                       | 1 Turbo shaft  |
| <b>Airframe Total Time:</b>          | 6588 Hrs                                              | <b>Engine Manufacturer:</b>           | Turbomeca      |
| <b>ELT:</b>                          | C126 installed, activated, aided in locating accident | <b>Engine Model/Series:</b>           | Arriel 2B1     |
| <b>Registered Owner:</b>             | GRANITE COAST MAPPING                                 | <b>Rated Power:</b>                   | 847 Horsepower |
| <b>Operator:</b>                     | Department of Homeland Security                       | <b>Operating Certificate(s) Held:</b> | None           |

## Weight and Balance

The helicopter's weight and balance at the time of the accident were calculated using the pilot's weight of 188 pounds, as recorded on his medical certificate. The estimated fuel load was 40%, equivalent to 435 pounds, and the pilot carried an estimated 20 pounds of personal gear. At the time of the accident, the helicopter's estimated weight was 4,325 pounds, below the certificated maximum allowable gross weight of 5,225 pounds.

## Fuel Records

According to the operator, the helicopter was refueled with 101 gallons of Jet A fuel the day before the accident, and no other flights occurred before the accident flight.

The helicopter was airworthy and current on its required inspections under the manufacturer's inspection program.

The helicopter had one outstanding writeup involving inoperative equipment. On December 12, 2024, both Wulfsberg tactical mission radios were written up because they sporadically received transmissions and could not transmit through either the RT1 or RT2 radio. According to the maintenance contractor's records, maintenance personnel deferred the radios for repair, stating, "Equipment is not required for VFR flight." A Motorola APX 8000 handheld radio was installed, the intercom switch was found in the AUX position, and the pilot successfully made the 0904 departure call.

The helicopter was not equipped with autopilot.

## Meteorological Information and Flight Plan

|                                         |                                  |                                             |                   |
|-----------------------------------------|----------------------------------|---------------------------------------------|-------------------|
| <b>Conditions at Accident Site:</b>     | Visual (VMC)                     | <b>Condition of Light:</b>                  | Day               |
| <b>Observation Facility, Elevation:</b> | KSDM, 525 ft msl                 | <b>Distance from Accident Site:</b>         | 18 Nautical Miles |
| <b>Observation Time:</b>                | 10:24 Local                      | <b>Direction from Accident Site:</b>        | 254°              |
| <b>Lowest Cloud Condition:</b>          | Clear                            | <b>Visibility</b>                           | 8 miles           |
| <b>Lowest Ceiling:</b>                  | None                             | <b>Visibility (RVR):</b>                    |                   |
| <b>Wind Speed/Gusts:</b>                | 6 knots / None                   | <b>Turbulence Type Forecast/Actual:</b>     | /                 |
| <b>Wind Direction:</b>                  | 130°                             | <b>Turbulence Severity Forecast/Actual:</b> | /                 |
| <b>Altimeter Setting:</b>               | 30.14 inches Hg                  | <b>Temperature/Dew Point:</b>               | 17°C / 3°C        |
| <b>Precipitation and Obscuration:</b>   | No Obscuration; No Precipitation |                                             |                   |
| <b>Departure Point:</b>                 | San Diego, CA (SDM)              | <b>Type of Flight Plan Filed:</b>           | None              |
| <b>Destination:</b>                     | San Diego, CA (SDM)              | <b>Type of Clearance:</b>                   | VFR               |
| <b>Departure Time:</b>                  | 08:56 Local                      | <b>Type of Airspace:</b>                    | Class G           |

At 1030 near Potrero, the sun had an azimuth of 160.15° and was 31.39° above the horizon. The sky was clear.

## Wreckage and Impact Information

|                            |         |                             |                         |
|----------------------------|---------|-----------------------------|-------------------------|
| <b>Crew Injuries:</b>      | 1 Fatal | <b>Aircraft Damage:</b>     | Substantial             |
| <b>Passenger Injuries:</b> | N/A     | <b>Aircraft Fire:</b>       | None                    |
| <b>Ground Injuries:</b>    |         | <b>Aircraft Explosion:</b>  | None                    |
| <b>Total Injuries:</b>     | 1 Fatal | <b>Latitude, Longitude:</b> | 32.65218,-116.6242(est) |

The helicopter came to rest on its left side in a field of dry brush on a magnetic heading of 309° at a field elevation of about 2,450 ft msl. Three distinct ground scars were observed near the tailboom. A 4-ft-long and 2-ft-wide ground scar was located next to the outboard end of one main rotor blade. A second main rotor blade rested within another ground scar about 1 ft forward of the first scar. A third ground scar was located about 6 inches from the left horizontal stabilizer. There was no evidence of postcrash fire.

The fuselage exhibited evidence of downward crush damage. The left landing skid was bent inward beneath the helicopter fuselage. Each forward cabin door had separated, and the windshield panels and top of the cabin were fragmented. The belly pan below the fuel tanks

had separated at its left-side attachments. The plastic composite fuel tank was heavily fragmented, and pieces were expelled from the bottom of the fuselage, including the fuel-transfer pump and capacitance fuel-sending unit. The transfer pump and fuel-sending unit were located about 10 to 25 ft east of the main wreckage. A strong fuel odor was observed below the separated belly pan.

The collective and cyclic controls were traced from the cockpit controls to the main-rotor transmission servos through separations consistent with overload. The anti-torque controls were traced from the pedals to the tail-rotor gearbox through push-pull rods and the flex-ball cable.

The three main rotor blades and their sleeves remained attached to the rotor hub. All three star arms exhibited diagonal fractures. The main rotor blades were bent and fractured at multiple locations and exhibited broomstrawing and fragmentation consistent with impact forces. All three pitch-change rods remained attached to their respective servo inputs.

The tailboom remained attached to the aft fuselage bulkhead and was bent slightly to the left near its forward end. Both horizontal stabilizers remained attached. The left horizontal stabilizer exhibited accordion-style compression, and the airfoil was curled upward. The vertical stabilizers were unremarkable.

The airframe showed no evidence of contact with another object.

The engine rested on its left side and remained attached to the liaison tube. The tail rotor drive shaft had separated from the flex coupling adapter on the freewheel shaft. The gas generator freely rotated by hand. The free turbine rotated with some resistance against the shroud. The examination found no evidence of blade shedding, metallic fragments in the engine, an oil system anomaly, or electrical failure.

## **Medical and Pathological Information**

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The 53-year-old pilot's last aviation medical examination was August 7, 2024. At that time, he reported a medical history of high blood pressure treated with medication, seasonal allergies, acid reflux, and diet-controlled celiac disease (an abnormal autoimmune reaction to gluten). He was issued a second-class medical certificate without limitations.

The San Diego County Medical Examiner's Office performed the pilot's autopsy. According to the pilot's autopsy report, the cause of death was blunt force injuries, and the manner of death was accident. Severe multivessel coronary artery disease was identified, including pinpoint narrowing of the left circumflex coronary artery, up to 80% narrowing of the right coronary

artery, and up to 70% narrowing of the left anterior descending coronary artery by plaque. The lateral wall of the left ventricle contained a 2-cm area of old scar tissue. Moderate-to-severe plaque was present in the aorta.

The San Diego County Medical Examiner's Office performed toxicological testing of postmortem blood specimens from the pilot. No tested-for substances were detected. A vitreous chemistry panel also was performed and was unremarkable.

The FAA Forensic Sciences Laboratory performed toxicological testing of postmortem specimens from the pilot. Diphenhydramine was detected in cavity blood at 186 ng/mL and in urine at 944 ng/mL. Doxylamine was detected at 65 ng/mL in urine and was not detected in cavity blood. Dapsone and its metabolite N-acetyl dapsone were detected in cavity blood and liver tissue, as were guaifenesin and acetaminophen. Dextromethorphan and its metabolite dextrophan were detected in cavity blood and urine, as were losartan, hydrochlorothiazide, and amlodipine.

Diphenhydramine is a sedating antihistamine widely available over the counter in multiple sleep aids and cold and allergy products. Diphenhydramine can cause cognitive and psychomotor slowing and drowsiness and often carries a warning about driving and operating machinery. Because diphenhydramine can redistribute after death, its concentration in postmortem cavity blood cannot be reliably compared with impairment ranges established in living people. The FAA states that pilots should not fly within 60 hours of using diphenhydramine to allow time for it to be cleared from circulation.

Doxylamine is another sedating antihistamine medication that is available over the counter as a sleep aid and as an ingredient in various cold and allergy products. Products containing doxylamine often carry a warning about driving. The FAA states that pilots should not fly within 60 hours of using doxylamine to allow time for the drug to be cleared from circulation. Doxylamine was not detected in blood in this case.

Dextromethorphan is a cough suppressant medication that is available over the counter in a variety of cold and allergy products. Dextromethorphan is not typically impairing at concentrations associated with medicinal use. The FAA states that pilots who use dextromethorphan should observe a waiting period for the drug to be cleared from circulation before flying.

Guaifenesin helps loosen mucus and is available over the counter in various cold and allergy products. Acetaminophen is a pain- and fever-reducing medication widely available over the counter, including in cold and flu products. Guaifenesin and acetaminophen are not generally considered impairing.

Dapsone is a prescription medication. It is available in oral form to treat a variety of conditions, including itchy skin rash associated with celiac disease. Dapsone also is available in topical form for acne treatment. Although dapsone is not typically impairing, it sometimes may cause significant adverse side effects. According to the FAA medical case review for this accident,

dapsone use is conditionally acceptable for pilot medical certification depending on the condition being treated and requires FAA review. It was not among the medications the pilot reported at his last aviation medical examination. N-acetyl dapsone is a metabolite of dapsone.

Losartan and hydrochlorothiazide are prescription medications commonly used to treat high blood pressure. Amlodipine is a prescription medication that can be used to treat high blood pressure and certain types of coronary artery disease. Losartan, hydrochlorothiazide, and amlodipine are not generally considered impairing. They were among the medications reported by the pilot at his last aviation medical examination.

According to the pilot's wife, he would not have gone to work if he had been unable to perform his duties. During the weekend before the accident, the pilot spent time with his family and appeared to be feeling well. His wife did not hear him coughing. On the morning of the accident, the pilot slept normally, went for a run, and then went to work.

## **Survival Aspects**

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### **Seatbelts and Restraints**

The pilot occupied the forward right seat at the time of the accident. The seat showed little vertical attenuation and remained attached to its tracks, with all cushions attached.

The right lap-belt webbing remained attached to the seat frame but had separated at the permanent tang attached to the rotary buckle. The tangs for the two shoulder harnesses and left lap belt were found disengaged from the rotary buckle.

### **Injury Report**

The pilot's autopsy identified traumatic injuries to the head, neck, thorax, abdomen, and extremities, including a basilar skull fracture, subarachnoid hemorrhage, pontomedullary brainstem laceration, multilevel spinal cord injuries with complete transection of the high cervical spinal cord associated with an atlanto-occipital dislocation, full-thickness heart lacerations, an aortic laceration, multiple other solid-organ lacerations, bilateral diaphragm rupture, a tracheal fracture, and multiple bony fractures.

Following the accident, responding emergency medical personnel found the pilot in asystole; he remained in asystole despite on-scene resuscitative efforts.

## Organizational and Management Information

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### CBP Clearance Authority and Risk Assessment

According to the CBP Aviation Operations Handbook, version 5.0, which was in effect at the time of the accident, *"A CDO coordinates branch operations. CDOs shall ensure all launches are necessary, properly planned, and executed in accordance with the guidance in this manual and authorized SOPs."*

The guidance also states that the CDO *"shall ensure all launches of AMO [Air and Marine Operations] assets in the assigned AOR [area of responsibility] are properly tracked and followed and all missions are accounted for in accordance with the flight plan."*

The handbook also notes that the role of Clearance Authority (CA) is to *"collaborate with the PIC to assess the risk of a given mission. The foundation of this assessment is a verbal conversation concerning the known risks at the time of launch, leading to mitigation – including acceptance of the risks and acceptance of the launch or declination of the launch due to unmanageable risk. The electronic risk assessment location on the SMS Portal shall be used to guide the conversation and decision-making process."*

The handbook also notes that *"Prior to each AMO aviation mission, clearance shall be received from the CA. Clearance for launch is signified by the acceptance of a risk assessment after a verbal conversation with the PIC concerning the risk factors found on the electronic risk assessment completed through the SMS Portal and any other identified local factors."*

*"The CA and the PIC shall use approved AMO risk assessment procedures, which include the mandatory electronic risk assessment, to ensure all risk factors are identified, discussed, and, if possible, mitigated to ensure the safety of the PIC and aircrew."*

A copy of the risk assessment for the accident flight was provided by the operator. The assessment covered 16 subject areas with 8 categories that covered pilot-related subject matter. These included Crew Selection, Recency in Type Aircraft, Mission Recency, Crew Mix, CRM Trained Crew, Duty Day, Crew Rest, Crew Schedule.

According to the clearance authority who approved the accident pilot to fly, he was stationed at a separate base, did not have any flight experience, and only knew the accident pilot in passing. On the day of the accident, when asked about his hoarse voice, the pilot stated that he had recently recovered from a cold, felt well, and had no other symptoms. The clearance authority then approved the flight. The completed risk assessment did not address illness, medication use, stress, or fatigue.

According to the operator's procedures for "Drugs, Alcohol, and Loss of Blood,"

*"No medicine other than aspirin; a drug combination of aspirin, paracetamol or acetophenetidin, and caffeine; or the FAA-approved over-the-counter drugs (nasal inhalant or similar drugs) shall be taken by any individual either performing duties as a flight crewmember or scheduled for such duties without prior approval of an FAA-certified physician or a military flight surgeon."*

The handbook also notes that no person may serve as a flight crewmember on a CBP Air and Marine aircraft while under the influence of drugs that may adversely affect their faculties or within the following periods after using such drugs:

*"Unless cleared by an FAA-certified physician or military flight surgeon, a minimum of:*

- 1) 12 hours after the last dose of any non-FAA-approved antihistamine drug, motion sickness drug, anti-diarrhea mixture, barbiturates, or sedatives.*

*An FAA-certified physician or a military flight surgeon should clear all other medications."*

### **Additional Information**

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The helicopter's Global Navigation Satellite System-based vertical speed data were retrieved from the ADS-B flight data. According to the data, at 1029:32 the vertical speed showed 9,472 fpm, 10,112 fpm at 1029:36, 12,096 fpm at 1029:37, and 11,776 fpm at the final ADS-B flight track data point.

## Administrative Information

**Investigator In Charge (IIC):** Stein, Stephen

**Additional Participating Persons:** Roger Messick; Federal Aviation Administration; San Diego, CA  
Seth Buttner ; Airbus Helicopters; Dallas/Ft Worth, TX  
Bryan Larimore; Safran Helicopter Engines; Dallas/Ft Worth, TX  
Derek Lehr; US Customs and Border Protection; Tucson, AZ

**Original Publish Date:** September 23, 2026

**Last Revision Date:**

**Investigation Class:** [Class 3](#)

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=199430>

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](#).