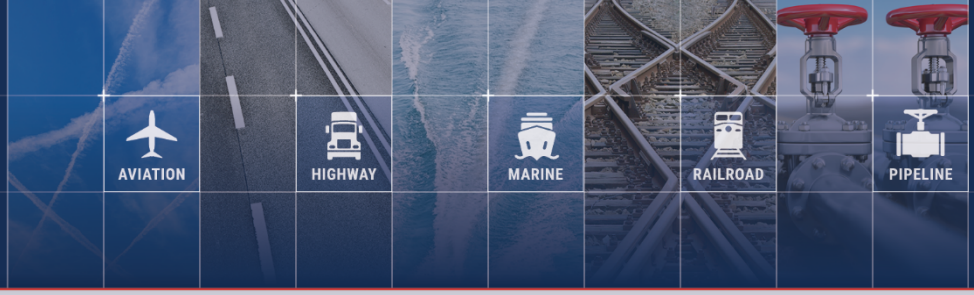


# Aviation Investigation Factual Report

| | | | |
|---|---|---|---|
| **Location:** | San Diego, California | **Accident Number:** | WPR23LA045 |
| **Date & Time:** | November 22, 2022, 17:57 Local | **Registration:** | N160AQ (A1); 166583 (A2) |
| **Aircraft:** | Sikorsky UH-60A (A1); Sikorsky MH-60R (A2) | **Aircraft Damage:** | Substantial (A1); Substantial (A2) |
| **Defining Event:** | Collision during takeoff/land | **Injuries:** | 2 None (A1); 3 None (A2) |
| **Flight Conducted Under:** | Part 91: General aviation - Instructional (A1); Armed Forces (A2) | | |

## Factual Information

On November 22, 2022, about 1750 Pacific standard time, a Sikorsky UH-60A, N160AQ, and a U.S. Navy Sikorsky MH-60R, 166583, were substantially damaged when they were involved in a mid-air accident near San Diego, California. There were no injuries to the two pilots in the UH-60, or the two pilots and one non-flying crewmember in the MH-60R. The UH-60 was operated as a Title 14 *Code of Federal Regulations* Part 91 training flight. The MH-60R was operated as an Armed Forces public use flight.

According to the pilot-in-command (PIC) of the UH-60A (Copter 129), he and a second pilot were conducting night vision goggle training. ADS-B data showed that Copter 129 departed Gillespie Field Airport (SEE) San Diego, California, about 1741 and proceeded to Brown Field Municipal Airport (SDM) San Diego, California. A review of the audio recording between the controller and Copter 129 revealed the initial contact and arrival to SDM was uneventful. About 1748, the controller asked Copter 129 if they could accept the underrun of runway 26L for landing at their own risk, and the pilot of Copter 129 accepted the underrun (Figure 1).

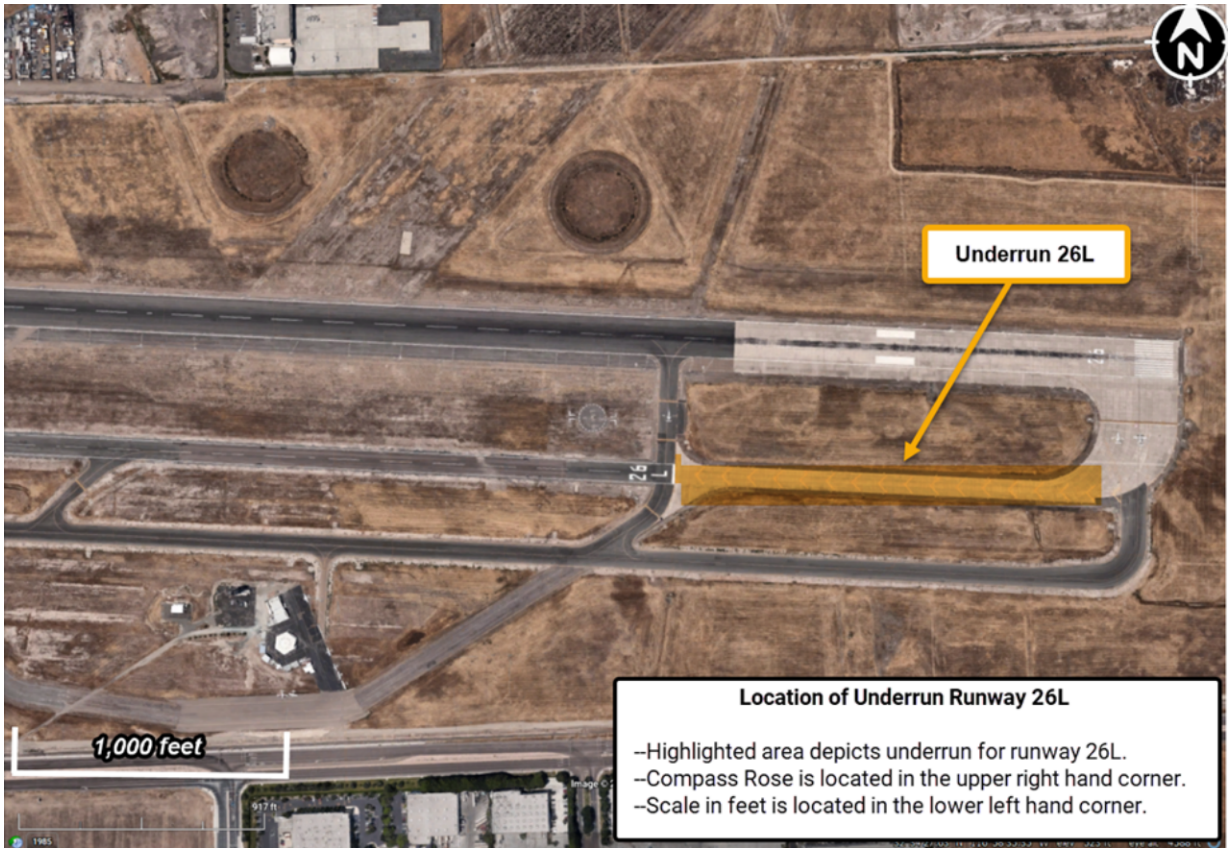


Figure 1. Google Earth image of SDM, showing the underrun runway 26L.

ADS-B data showed that Copter 129, as instructed by the controller, crossed the airport mid-field, at or above 2,000 ft mean sea level (msl), and entered the left traffic pattern for landing on the underrun of runway 26L. At, 1753:50 the controller instructed Copter 129 to continue in the left closed pattern due to traffic, which the pilot read back. ADS-B data showed that after Copter 129 arrived to the underrun, it then took off, flew one traffic pattern, and again landed on the underrun.

According to the PIC of the MH-60R (Navy 410/Seahawk 410), the crew consisted of two pilots and a non-flying crewmember. About 1754, Navy 410 made their initial contact with ATCT while they were about 5 miles west of the airport. The controller instructed Navy 410 to enter the downwind for underrun runway 26L. The pilot read back “left downwind for runway 26L.” The controller then asked if they could accept the underrun at their own risk. The pilot responded with “affirmative.” About 30 seconds later, the controller cleared Copter 129 for the option to land on the runway 26L underrun and the pilot acknowledged the instruction. About 1756, the controller informed Navy 410 that they were number 2 following a helicopter on short final for the runway 26L underrun, then cleared Navy 410 for the option to land on the runway 26L underrun, and instructed them to make left closed traffic. Navy 410 stated they had the traffic in sight. The controller further instructed Navy 410 to maintain visual separation from the helicopter on the underrun. The pilot responded that they “copied all.” About 1756, Navy 410 began to use the callsign Seahawk 410, which continued for the remainder of the flight.

About 1757, according to the controller, he saw that Seahawk 410 appeared to have turned to their base leg early. He then instructed Copter 129 that he needed them “on the go.” The pilot responded with, “Copter 129 on the go.” About 4 seconds later, the controller advised Seahawk 410 that, “the copter on the go was going to the left.” Seconds later, the pilot of Seahawk 410 asked the controller to repeat the instruction. The controller then stated, “Seahawk 410 verify you’re overflying...Navy.” About 3 seconds later, the controller instructed Seahawk 410 to, “go around the northside of runway 26L.” The pilot responded, “Seahawk 4.” According to the controller, he instructed Seahawk 410 to go around after he became nervous that they were either going to be overflying Copter 129 or were going to the other runway [runway 26R]. About 1757, the pilot of Copter 129 stated, “Mayday, Mayday, Mayday Copter 129.”

According to the crew of Copter 129, after departing, and while between 200 to 500 ft above ground level (agl) he saw another helicopter overhead as it appeared in the upper window above his head. He initiated maneuvers to avoid the helicopter, including lowering the collective and applying right cyclic. He then felt and heard the impact.

According to the crew of Seahawk 410, after turning to the final approach leg and aligning with runway 26L, while about 500 ft agl at about 50 knots, the controller directed them to, “go around the north side of 26L.” While over the first half of the runway, the PIC felt the other helicopter impact them on the aft-bottom portion of their helicopter and saw debris fly up under the rotor arc. The pilot then landed on runway 26R, repositioned off the runway, and shut down the helicopter.

Postaccident examination revealed that Copter 129 sustained substantial damage to the 4 main rotor blade tips, 1 tail rotor blade, and the vertical stabilizer. Seahawk 410 sustained substantial damage to the left side of the stabilator.

During postaccident interviews, ATCT personnel explained that the underrun was a non-movement portion of runway 26L, about 1,800 to 2,000 ft long, that was neither maintained by the airport nor lighted. The underrun was used for helicopter operations by civilian and military helicopters without written procedures. According to the air traffic manager, runway 26L was not approved for UH-60 helicopters to touch down on the runway because of the weight restriction. A review of airport data revealed the weight bearing capacity for runway 26L was 12,500 pounds.

FAA Order JO 7110.65Z, Air Traffic Control

Chapter 3, Section 11, Helicopter Operations, paragraph 3-11-4, Helicopter Arrival Separation, stated in part: *"Separate an arriving helicopter from other helicopters by ensuring that it does not land until one of the following conditions exists: b. A preceding, departing helicopter has left the landing area."*

Chapter 2, Section 1, General Control, paragraph 2-1-6, Safety Alert, stated in part:

*"Issue a safety alert to an aircraft if you are aware the aircraft is in a position/altitude that, in your judgment, places it in unsafe proximity to terrain, obstructions, or other aircraft. Once the pilot informs you action is being taken to resolve the situation, you may discontinue the issuance of further alerts. Do not assume that because someone else has responsibility for the aircraft that the unsafe situation has been observed and the safety alert issued; inform the appropriate controller."*

According to the Aeronautical Information Manual (AIM) *"If takeoff is requested from nonmovement areas, an area not authorized for helicopter use, an area not visible from the tower, an unlighted area at night, or an area off the airport, the phraseology "DEPARTURE FROM (requested location) WILL BE AT YOUR OWN RISK (additional instructions, as necessary)."* Additionally, the AIM stated, in part, that the *"Cleared for the Option" procedure will permit an instructor, flight examiner or pilot the option to make a touch-and-go, low approach, missed approach, stop-and-go, or full stop landing."*

## Pilot Information (A1)

| | | | |
|---|---|---|---|
| **Certificate:** | Commercial; Flight instructor | **Age:** | 32,Male |
| **Airplane Rating(s):** | None | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | Helicopter | **Restraint Used:** | 5-point |
| **Instrument Rating(s):** | Helicopter | **Second Pilot Present:** | Yes |
| **Instructor Rating(s):** | Helicopter; Instrument helicopter | **Toxicology Performed:** | |
| **Medical Certification:** | Class 2 Without waivers/limitations | **Last FAA Medical Exam:** | February 24, 2022 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | September 5, 2022 |
| **Flight Time:** | 3395 hours (Total, all aircraft), 1725 hours (Total, this make and model), 3000 hours (Pilot In Command, all aircraft), 21 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft) | | |

## Co-pilot Information (A1)

| | | | |
|---|---|---|---|
| **Certificate:** | Airline transport; Flight instructor | **Age:** | 41,Male |
| **Airplane Rating(s):** | Single-engine land | **Seat Occupied:** | Right |
| **Other Aircraft Rating(s):** | Helicopter | **Restraint Used:** | 5-point |
| **Instrument Rating(s):** | Helicopter | **Second Pilot Present:** | Yes |
| **Instructor Rating(s):** | Helicopter; Instrument helicopter | **Toxicology Performed:** | |
| **Medical Certification:** | Class 2 Without waivers/limitations | **Last FAA Medical Exam:** | November 12, 2021 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | June 21, 2022 |
| **Flight Time:** | 11493 hours (Total, all aircraft), 675 hours (Total, this make and model), 11451 hours (Pilot In Command, all aircraft), 101 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft) | | |

## Pilot Information (A2)

| | | | |
|---|---|---|---|
| **Certificate:** | Military | **Age:** | 31,Female |
| **Airplane Rating(s):** | None | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | Helicopter | **Restraint Used:** | 5-point |
| **Instrument Rating(s):** | Helicopter | **Second Pilot Present:** | Yes |
| **Instructor Rating(s):** | Helicopter | **Toxicology Performed:** | |
| **Medical Certification:** | Class 1 Without waivers/limitations | **Last FAA Medical Exam:** | June 14, 2022 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | July 12, 2022 |
| **Flight Time:** | 1235 hours (Total, all aircraft), 1030 hours (Total, this make and model), 480 hours (Pilot In Command, all aircraft), 46 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft) | | |

## Co-pilot Information (A2)

| | | | |
|---|---|---|---|
| **Certificate:** | Military | **Age:** | 30,Female |
| **Airplane Rating(s):** | None | **Seat Occupied:** | Right |
| **Other Aircraft Rating(s):** | Helicopter | **Restraint Used:** | 5-point |
| **Instrument Rating(s):** | Helicopter | **Second Pilot Present:** | Yes |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | |
| **Medical Certification:** | Class 1 With waivers/limitations | **Last FAA Medical Exam:** | November 15, 2022 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | May 19, 2022 |
| **Flight Time:** | 820 hours (Total, all aircraft), 616 hours (Total, this make and model), 224 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft) | | |

## Other flight crew Information (A2)

| | | | |
|---|---|---|---|
| **Certificate:** | None | **Age:** | Male |
| **Airplane Rating(s):** | None | **Seat Occupied:** | Rear |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | 5-point |
| **Instrument Rating(s):** | None | **Second Pilot Present:** | Yes |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | |
| **Medical Certification:** | None None | **Last FAA Medical Exam:** | |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 1454 hours (Total, all aircraft), 1454 hours (Total, this make and model) | | |

## Aircraft and Owner/Operator Information (A1)

| | | | |
|---|---|---|---|
| **Aircraft Make:** | Sikorsky | **Registration:** | N160AQ |
| **Model/Series:** | UH-60A | **Aircraft Category:** | Helicopter |
| **Year of Manufacture:** | 1982 | **Amateur Built:** | |
| **Airworthiness Certificate:** | Restricted (Special) | **Serial Number:** | 81-23588 |
| **Landing Gear Type:** | Tailwheel | **Seats:** | 4 |
| **Date/Type of Last Inspection:** | April 16, 2022 Continuous airworthiness | **Certified Max Gross Wt.:** | 22000 lbs |
| **Time Since Last Inspection:** | 4702 Hrs | **Engines:** | 2 Turbo shaft |
| **Airframe Total Time:** | as of last inspection | **Engine Manufacturer:** | General Electric |
| **ELT:** | C126 installed, not activated | **Engine Model/Series:** | T700-GE-700 |
| **Registered Owner:** | CORMORANT VENTURE LLC | **Rated Power:** | 1318 |
| **Operator:** | HeliStream Inc. | **Operating Certificate(s) Held:** | Rotorcraft external load (133), On-demand air taxi (135), Agricultural aircraft (137), Pilot school (141), Certificate of authorization or waiver (COA) |
| **Operator Does Business As:** | | **Operator Designator Code:** | JMXA |

## Aircraft and Owner/Operator Information (A2)

| | | | |
|---|---|---|---|
| **Aircraft Make:** | Sikorsky | **Registration:** | 166583 |
| **Model/Series:** | MH-60R | **Aircraft Category:** | Helicopter |
| **Year of Manufacture:** | 2010 | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 166583 |
| **Landing Gear Type:** | Tailwheel | **Seats:** | 4 |
| **Date/Type of Last Inspection:** | Unknown | **Certified Max Gross Wt.:** | 23500 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 2 Turbo shaft |
| **Airframe Total Time:** | | **Engine Manufacturer:** | General Electric |
| **ELT:** | Installed | **Engine Model/Series:** | T700-GE-401C |
| **Registered Owner:** | U.S. Navy | **Rated Power:** | 441 Horsepower |
| **Operator:** | U.S. Navy | **Operating Certificate(s) Held:** | None |

## Meteorological Information and Flight Plan

| | | | |
|---|---|---|---|
| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Night |
| **Observation Facility, Elevation:** | KSDM,521 ft msl | **Distance from Accident Site:** | 1 Nautical Miles |
| **Observation Time:** | 17:53 Local | **Direction from Accident Site:** | 286° |
| **Lowest Cloud Condition:** | Clear | **Visibility** | 10 miles |
| **Lowest Ceiling:** | None | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | / | **Turbulence Type Forecast/Actual:** | None / None |
| **Wind Direction:** | | **Turbulence Severity Forecast/Actual:** | N/A / N/A |
| **Altimeter Setting:** | 30.04 inches Hg | **Temperature/Dew Point:** | 14°C / 5°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | El Cajon, CA (SEE) (A1); San Diego, CA (NZY) (A2) | **Type of Flight Plan Filed:** | Company VFR (A1); Military VFR (A2) |
| **Destination:** | San Diego, CA (A1); San Diego, CA (NZY) (A2) | **Type of Clearance:** | VFR (A1); VFR (A2) |
| **Departure Time:** | 17:45 Local (A1); 17:25 Local (A2) | **Type of Airspace:** | Class D (A1); Class D (A2) |

## Airport Information

| | | | |
|---|---|---|---|
| **Airport:** | Brown Field Municipal Airport SDM | **Runway Surface Type:** | Concrete |
| **Airport Elevation:** | 526 ft msl | **Runway Surface Condition:** | Dry;Vegetation |
| **Runway Used:** | 26L Underrun | **IFR Approach:** | None |
| **Runway Length/Width:** | 3185 ft / 75 ft | **VFR Approach/Landing:** | Touch and go;Traffic pattern |

## Wreckage and Impact Information (A1)

| | | | |
|---|---|---|---|
| **Crew Injuries:** | 2 None | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | N/A | **Aircraft Fire:** | None |
| **Ground Injuries:** | | **Aircraft Explosion:** | None |
| **Total Injuries:** | 2 None | **Latitude, Longitude:** | 32.57268,-116.98031 |

## Wreckage and Impact Information (A2)

| | | | |
|---|---|---|---|
| **Crew Injuries:** | 3 None | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | N/A | **Aircraft Fire:** | None |
| **Ground Injuries:** | | **Aircraft Explosion:** | None |
| **Total Injuries:** | 3 None | **Latitude, Longitude:** | 32.57268,-116.98031 |

## Administrative Information

| | |
|---|---|
| **Investigator In Charge (IIC):** | Salazar, Fabian |
| **Additional Participating Persons:** | Roger Messick; Federal Aviation Administration; San Diego, CA<br>Alex Thill; US Navy; San Diego, CA<br>Jonathan C. Cantwell; Sikorsky a Lockheed Company; Stratford, CT |
| **Report Date:** | |
| **Last Revision Date:** | |
| **Investigation Class:** | Class 3 |
| **Note:** | The NTSB did not travel to the scene of this accident. |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=106354 |