National Transportation Safety Board
Aviation Accident Final Report

Location:	Slidell, LA	**Accident Number:**	CEN16FA158
Date & Time:	04/19/2016, 2115 CDT	**Registration:**	N7MC
Aircraft:	BEECH 65 A90 1	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Public Aircraft		

Analysis

The airline transport pilot and commercial copilot were conducting a mosquito abatement application flight. Although flight controls were installed in both positions, the pilot typically operated the airplane. During a night, visual approach to landing at their home airfield, the airplane was on the left base leg and overshot the runway's extended centerline and collided with 80-ft-tall power transmission towers and then impacted terrain. Examination of the airplane did not reveal any preimpact anomalies that would have precluded normal operation.

Both pilots were experienced with night operations, especially at their home airport. The pilot had conducted operations at the airport for 14 years and the copilot for 31 years, which might have led to crew complacency on the approach . Adequate visibility and moon disk illumination were available; however, the area preceding the runway is a marsh and lacks cultural lighting, which can result in black-hole conditions in which pilots may perceive the airplane to be higher than it actually is while conducting an approach visually.

The circumstances of the accident are consistent with the pilot experiencing the black hole illusion which contributed to him flying an approach profile that was too low for the distance remaining to the runway. It is likely that the pilot did not maintain adequate crosscheck of his altimeter and radar altimeter during the approach and that the copilot did not monitor the airplane's progress; thus, the flight crew did not recognize that they were not maintaining a safe approach path. Further, it is likely that neither pilot used the visual glidepath indicator at the airport, which is intended to be a countermeasure against premature descent in visual conditions.

Probable Cause and Findings

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

The unstable approach in black-hole conditions, resulting in the airplane overshooting the runway extended centerline and descending well below a safe glidepath for the runway. Contributing to the accident was the lack of monitoring by the copilot allowing the pilot to fly well below a normal glidepath.

Findings

Aircraft	Descent/approach/glide path - Not attained/maintained (Cause)
Personnel issues	Task monitoring/vigilance - Pilot (Cause) Aircraft control - Pilot (Cause) Monitoring other person - Copilot (Factor)
Environmental issues	Dark - Effect on operation (Cause)

Factual Information

History of Flight

Approach-VFR pattern base	not used
	Collision with terr/obj (non-CFIT)
	Loss of control in flight (Defining event)

On April 19, 2016, about 2115 central daylight time, a Beech 65-A90-1 airplane, N7MC, collided with towers suspending high-power transmission lines while attempting to land at Slidell Municipal Airport (ASD), Slidell, Louisiana. Both pilots were fatally injured, and the airplane was destroyed. The airplane was registered to and operated by the Saint Tammany Parish Mosquito Abatement District as a 14 Code of Federal Regulations Part 91 public aircraft operations flight . Night visual meteorological conditions existed at the airport at the time of the accident, and the flight was operating on a visual flight rules flight plan. The local flight originated about 2000.

After completing a planned mosquito abatement application flight, the pilots radioed their intention to land at ASD. The accident pilots were flying a visual pattern to runway 18, and another company airplane was behind them conducting a practice GPS approach to runway 18. When the pilot of the other company airplane radioed that they had crossed the GPS approach's final approach fix, the accident pilot radioed that they were on the left base leg and were number one to land at the airport. Seconds later, the pilots of the other company airplane saw a blue arc of electricity, followed shortly after by a plume of fire. The accident pilots could not be reached on the radio, and the company pilots notified emergency personnel. The airplane was located in a marsh about 0.6 nautical mile north-northwest of the approach end of runway 18.

Pilot Information

Certificate:	Flight Instructor; Commercial	**Age:**	59, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With Waivers/Limitations	**Last FAA Medical Exam:**	02/18/2016
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	7769 hours (Total, all aircraft), 22.9 hours (Total, this make and model), 6.9 hours (Last 90 days, all aircraft), 6.9 hours (Last 30 days, all aircraft), 1.6 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	**Age:**	68, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Helicopter; Instrument Airplane; Instrument Helicopter	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With Waivers/Limitations	**Last FAA Medical Exam:**	07/15/2015
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	06/23/2015
Flight Time:	18163 hours (Total, all aircraft), 614 hours (Total, this make and model), 14.3 hours (Last 90 days, all aircraft), 7.4 hours (Last 30 days, all aircraft), 1.6 hours (Last 24 hours, all aircraft)		

Pilot

The left seat pilot, age 59, held a commercial pilot certificate with ratings for airplane single-engine land, airplane multiengine land, and instrument airplane. In addition, he held a flight instructor certificate for airplane single-engine and instrument airplane. He was issued a second-class medical certificate, dated February 18, 2016, with the limitation that he must wear corrective lenses for near and distant vision. On his medical application, the pilot reported that he used hydrochlorothiazide and irbesartan.

As of December 11, 2015, the pilot reported accruing 6,825 hours of single-engine total time with 50 hours logged in the preceding 6 months and 952 hours of multiengine total time with 15 hours logged in the preceding year. His flight time in the Beech C90 was 15 hours with 5 hours logged in the preceding year. He estimated that he had 7,762 total hours with 1,135 hours of night time, 10 hours of actual instrument time, and 305 hours of simulated instrument time. He reported his last biennial flight review occurred in February 2014.

Company records showed that the pilot flew the accident airplane for 7.4 hours in 2015 and 5.7 hours in 2014. On July 1, 2015, the pilot was approved by the aerial operations supervisor to act as pilot-in-command for the accident airplane and a Britten-Norman BN-2T airplane, N717MC.

Copilot

The copilot, age 68, who was in the right seat, held an airline transport pilot certificate with ratings in airplane single-engine land, multiengine land, rotorcraft-helicopter, and instrument airplane and helicopter. He also held a commercial pilot certificate for airplane single-engine sea and a flight instructor certificate for airplane single and multiengine, rotorcraft-helicopter, and instrument airplane and helicopter. He was issued a second-class medical certificate, dated

July 14, 2015, with the limitation that he must have available glasses for near vision. On his medical application, the copilot reported that he used diltiazem, losartan, pravastatin, metoprolol, etodolac, pantoprazole, sildenafil, and warfarin.

As of February 25, 2016, the pilot reported accruing 4,310 hours of single-engine total time with 50 hours logged in the preceding 6 months and 5,910 hours of multiengine time with 105 hours logged in the preceding year. His flight time in the Beech C90 was 627 hours with 59 hours logged in the preceding year. He estimated that he had 18,163 total hours with 4,619 hours of night time, 2,199 hours of actual instrument time, and 431 hours of simulated instrument time. He reported that his last biennial flight review occurred in February 2014.

The copilot was also the department's aerial operations supervisor. He had worked for the Saint Tammany Parish Mosquito Abatement District for 31 years. According to other company pilots, although the copilot was the more senior pilot, he was seated in the right seat and would have been performing copilot duties.

Both pilots had flown the accident airplane together on April 4, 7, 8, 11, and 18, 2015, for a total of 6.9 hours. Each flight ended in a night landing to ASD. On the forms for each of the flights, the area for "comments and/or mechanical problems" was blank.

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	**Registration:**	N7MC
Model/Series:	65 A90 1	**Aircraft Category:**	Airplane
Year of Manufacture:	1968	**Amateur Built:**	No
Airworthiness Certificate:	Restricted	**Serial Number:**	LM-106
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	12/01/2015, Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:	18 Hours	**Engines:**	2 Turbo Prop
Airframe Total Time:	15208 Hours at time of accident	**Engine Manufacturer:**	Pratt & Whitney Canada
ELT:	C126 installed, not activated	**Engine Model/Series:**	PT6A-20
Registered Owner:	ST TAMMANY PARISH MOSQUITO ABATEMENT DIS	**Rated Power:**	525 hp
Operator:	ST TAMMANY PARISH MOSQUITO ABATEMENT DIS	**Operating Certificate(s) Held:**	None

The low-wing, twin engine airplane was manufactured in 1968. It was powered by two 550-shaft- horsepower Pratt & Whitney Canada PT6A-20 turboprop engines. Each engine drove a three-blade, variable-pitch, full-feathering Hartzell HC-B3TN-3B propeller. The airplane was operated as a public aircraft operations flight by the Saint Tammany Parish of Louisiana for

mosquito abatement purposes.

The airplane's most recent inspection was a combined Phase I through IV and annual inspection recorded on December 1, 2015, at an airframe total time of 15,189.6 hours. On that date, the left engine had accrued 9,676.6 hours since new and 1,638.4 hours since overhaul. The right engine had accrued 7,413 total hours since new and 1,248.5 hours since overhaul. Airplane forms filled out before the flight showed that the airplane had logged 15,207.1 total hours.

The airplane was originally manufactured as a US Army U-21D. It remained in military service until 1995 when it was sold to a civilian company. In 1998, the airplane was registered with the Federal Aviation Administration (FAA) as a Beechcraft 65A90-1 and issued a special airworthiness certificate for restricted use for the purpose of agriculture and pest control. The airplane was acquired by the Saint Tammany Parish in June 2012. The airplane was equipped with a radar altimeter and had controls installed in both pilot seats.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Night
Observation Facility, Elevation:	KASD, 36 ft msl	**Distance from Accident Site:**	2 Nautical Miles
Observation Time:	2053 CDT	**Direction from Accident Site:**	169°
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	Calm /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	20°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Slidell, LA (ASD)	**Type of Flight Plan Filed:**	None
Destination:	Slidell, LA (ASD)	**Type of Clearance:**	None
Departure Time:	2000 CDT	**Type of Airspace:**	

At 2053, the ASD automated weather reporting facility reported calm wind, visibility 10 miles, clear sky, temperature 68° F, dew point 64° F, and a barometric pressure of 30.09 inches of mercury .

Astronomical data from the US Navy Observatory indicated that the moon rose on the day of the accident at 1730 and set the following morning at 0541. The moon disk illumination was 94%.

Airport Information

Airport:	SLIDELL (ASD)	**Runway Surface Type:**	N/A
Airport Elevation:	28 ft	**Runway Surface Condition:**	
Runway Used:	N/A	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Traffic Pattern

ASD is located 4 miles northwest of Slidell, Louisiana, and is a publicly owned, nontowered airport that is open to the public. The airport is at an elevation of 28 ft mean sea level. It has a 5,002 ft long, 100 ft wide asphalt runway aligned with 18/36. Runway 18 has a displaced threshold with a published landing distance of 4,057 ft. It is lit with medium-intensity runway lighting and runway end identifier lights, which are preset to low intensity between the hours of dusk and dawn. There is precision approach path indicator lightning (PAPI) located on the left side of the runway, configured for a 3.0° glideslope.

The other company pilots reported that the airfield lighting was illuminated and that the PAPI operated normally.

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-Ground
Total Injuries:	2 Fatal	**Latitude, Longitude:**	30.360278, -89.823333

The airplane initially impacted two 70- to 80-ft-tall towers that suspended high-power transmission lines . The lines generally ran on a heading of 150°/330° and, due to their height, were not required to be illuminated. Ceramic isolators were shattered on the northern pole, and the top guide wire was damaged on the southern pole. A portion of the airplane's lower chemical tank and left wing tip were found directly beneath the poles. The airplane's debris path followed a 175° heading in marshy terrain for about 555 ft.

The main wreckage came to rest about 0.6 nautical mile northwest of runway 18's approach end. The main wreckage consisted of the metal hopper tank frame, the upper portion of the fuselage, cockpit instrumentation, inboard left wing, outboard right wing, left horizontal, vertical stabilizer, rudder, and the left engine with its propeller. A postimpact fire consumed a majority of the cabin structure. The airplane's nose was generally aligned with 350° magnetic, and the fuselage was inverted.

Flight control continuity was confirmed to all surfaces. The flaps were in the retracted position. The elevator and rudder trim positions could not be determined due to impact damage. The fuel selector position could not be determined. The emergency locator transmitter (ELT) was still attached to the airplane, and the antenna and was found in the "armed" position, but it was thermally damaged. The company pilots in the other airplane reported that they did not hear any ELT beacon.

Both pilots' restraint hardware remained latched; the webbing was consumed by fire. The left fuel flow gauge read 400 pounds per hour and the right fuel gauge read 250 pounds per hour. The cockpit instrumentation was impact and thermally damaged and was largely unreadable. The right inlet turbine temperature gauge read about 700°. The left propeller speed read about 1,100 rpm.
The right engine was impact-separated and found upright. Its propeller remained attached to the engine. Two of the three blades displayed S-bending with nicks on their leading edges. Examination of the left propeller blades found one blade almost completely consumed by the postcrash fire. Another blade was partially consumed and displayed curling with a rearward bend. The third blade was curled and bent rearward. No anomalies were detected with the airframe and engine.

A thermally damaged SD card was recovered from the airplane's ADAPCO Wingman GX system and sent to the National Transportation Safety Board laboratory for data extraction. Due to the damage sustained in the accident, the chips on the card were not recoverable.

Communications

The accident pilots were communicating on the airport's common traffic advisory radio frequency (CTAF), which was not recorded. The pilots in the company airplane who were also on the CTAF reported no distress calls before the accident.

Medical And Pathological Information

Pilot

The St. Tammany Parish Coroner's Office conducted an autopsy on the pilot. The autopsy showed no natural diseases that could have posed a potential hazard to flight safety.

The FAA Civil Aerospace Medical Institute performed forensic toxicology on specimens from the pilot. Testing was negative for carbon monoxide and ethanol. The following drugs were detected:

Ibuprofen detected in urine
Irbesartan detected in urine
Irbesartan detected in blood

The pilot had previously reported the use of irbesartan, which is used to treat high blood pressure, to the FAA. Ibuprofen is a nonnarcotic analgesic and anti-inflammatory agent and is available in prescription and nonprescription forms.

Copilot

The St. Tammany Parish Coroner's Office conducted an autopsy on the copilot. Although the autopsy did note several chronic medical conditions, there did not appear to be any natural diseases that posed an immediate hazard to flight safety.

The FAA Civil Aerospace Medical Institute performed forensic toxicology on specimens from the copilot. Testing was negative for ethanol and 15% carbon monoxide was detected in blood from the heart. The following drugs were detected:

Diltiazem detected in urine
Diltiazem detected in blood (heart)
Metoprolol detected in urine
Metoprolol NOT detected in blood (heart)
Rosuvastatin detected in urine
Rosuvastatin detected in blood (heart)
Warfarin detected in urine
Warfarin detected in blood (heart)

The copilot had previously reported all of the detected medications except the rosuvastatin to the FAA. Rosuvastatin is a prescription medication used to reduce blood cholesterol and triglycerides levels.

Additional Information

The FAA's Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25A), dated 2008, Chapter 10, "Night Operations," states the following:
Night Illusions

A black-hole approach occurs when the landing is made from over water or non-lighted terrain where the runway lights are the only source of light. Without peripheral visual cues to help, pilots will have trouble orientating themselves relative to Earth. The runway can seem out of position (downsloping or upsloping) and in the worse case, results in landing short of the runway. If an electronic glide slope or visual approach slope indicator (VASI) is available, it should be used. If navigation aids (NAVAIDs) are unavailable, careful attention should be given to using the flight instruments to assist in maintaining orientation and a normal approach. If at any time the pilot is unsure of his or her position or attitude, a go-around should be executed.

Approaches and Landings

To fly a traffic pattern of proper size and direction, the runway threshold and runway-edge lights must be positively identified. Once the airport lights are seen, these lights should be kept in sight throughout the approach. Distance may be deceptive at night due to limited lighting conditions. A lack of intervening references on the ground and the inability of the pilot to compare the size and location of different ground objects cause this. This also applies to the estimation of altitude and speed. Consequently, more dependence must be placed on flight instruments, particularly the altimeter and the airspeed indicator.

The altimeter and VSI [vertical speed indicator] should be constantly cross-checked against the airplane's position along the base leg and final approach. A visual approach slope indicator (VASI) is an indispensable aid in establishing and maintaining a proper glidepath.

Administrative Information

Investigator In Charge (IIC):	Jason T Aguilera	**Report Date:**	06/13/2017
Additional Participating Persons:	Okey George; FAA FSDO; Baton Rogue, LA Ricardo Asensio; Textron Aviation; Wichita, KS Ben Smith; Saint Tammany Mosquito Abatement District; Slidell, LA		
Publish Date:	06/13/2017		
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=93038		