



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

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Specialist's Report

OPERATIONAL FACTORS

CEN22FA096

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A. ACCIDENT

Location: Defiance, Missouri
Date: January 8, 2022
Time: 1919 central standard time¹
Airplane: Beechcraft BE-58; N585CK; Callsign Star Check 247; Serial No. TH-1299

B. AIR SAFETY INVESTIGATOR

Shawn Etcher
Air Safety Investigator
Operational Factors Division (AS-30)
National Transportation Safety Board

C. SUMMARY

On January 8, 2022, about 1919 central standard time, a Beech B58, N585CK, was destroyed when it was involved in an accident near Defiance, Missouri. The two commercial pilots sustained fatal injuries. The airplane was operated by AirNet II, LLC, as a Title 14 *Code of Federal Regulations* Part 91 positioning flight, from Spirit of St. Louis Airport (SUS), Chesterfield, Missouri to Centennial Airport (APA), Denver, Colorado.

D. DETAILS OF THE INVESTIGATION

January 20, 2022, the Operational Factors investigator was assigned the investigation to review pilot records and interview personnel from the operator and the Federal Aviation Administration (FAA) principal operations inspector (POI) for the operator.

January 26, 2022, the Operational Factors investigator requested manuals and pilot records from the operator and pilot records from the FAA.

February 23, 2022, the Operational Factors investigator interviewed AirNet II LLC personnel, including pilots that had flown with one or both accident pilots, a training instructor that trained both accident pilots, the chief pilot, and the director of operations.

February 24, 2022, the Operational Factors investigator interviewed the Federal Aviation Administration POI assigned to AirNet II LLC.

E. HISTORY OF FLIGHT

About 1859, the accident flight contacted the SUS air traffic control (ATC) tower ground controller and requested, then received, and readback the clearance to APA. About 1901, the

¹ All times are central standard time (CST) unless otherwise noted. At the time of the accident central standard time was universal time coordinate (UTC) minus 6 hours

accident flight contacted ground control requesting taxi instructions. The ATC ground controller issued taxi instructions to runway 26L via taxiway “Alpha.” About 1908, a pilot on the accident flight contacted the ATC tower and requested takeoff clearance.

According to ADS-B² data, the accident airplane departed Spirit of St. Louis (SUS), Chesterfield, Missouri, at 1910, on an instrument flight plan to Centennial Airport (APA), Denver, Colorado. After climbing to 8,000 ft mean sea level (msl) on a west heading, the airplane made a gradual left turn toward a southeast heading and subsequently descended.

The controller queried about the airplane’s incorrect altitude and direction of flight. A jumbled radio transmission was made by a pilot and no distress call was received. The final 10 seconds of captured ADS-B data indicated the airplane descended from 7,500 to 4,700 ft msl. The last recorded ADS-B data was at 1919:07.242 at an altitude of 4,700 ft. msl.

The airplane subsequently impacted forested terrain on a west heading. Broken tree limbs indicated the airplane was in a steep descent at impact and the debris path was about 320 yards long. The airplane was retained for examination.

F. FACTUAL INFORMATION

1.0 Occupants of the Flight

The only two occupants on the plane were the pilots.

1.1 Pilot Information

The pilot was 35 years old. At the time of the accident, she was based out of Rickenbacker International Airport (LCK), Columbus, Ohio. She had approximately 1,274³ hours of total flight experience and approximately 54 of those hours were in the aircraft make and model. According to records provided to the Operational Factors investigator, her most recent training in the aircraft was on November 17, 2021.

1.1.1 Pilot Certification Record

FAA Records of the pilot indicated the following:

Student Pilot – Limitations: Carrying Passenger Is Prohibited certificate issued February 17, 2018.

Private Pilot – Airplane Single Engine Land; Limitation: English Proficient certificate issued October 1, 2018.

Private Pilot – Airplane Single Engine Land; Instrument Airplane; Limitation: English Proficient certificate issued March 17, 2019.

² Automatic dependent surveillance-broadcast. ADS-B provides real-time precision, shared situational awareness, advanced applications for pilots and controllers alike. Source: [Automatic Dependent Surveillance-Broadcast \(ADS-B\) \(faa.gov\)](https://www.faa.gov/atsb/adsb/)

³ Source: Operator completed NTSB Form 6120.1 “Pilot/Operator Aircraft Accident/Incident Report.”

Commercial Pilot – Airplane Single Engine Land; Instrument Airplane; Limitation: English Proficient certificate issued October 19, 2019.

Flight Instructor – Airplane Single Engine Land certificate issued June 25, 2020.

Flight Instructor – Airplane Single-Engine, Instrument Airplane certificate issued July 18, 2020.

Commercial Pilot – Airplane Single Engine Land; Airplane Multiengine Land, Instrument Airplane; Limitation – English Proficient certificate issued November 29, 2020.

1.1.2 Pilot Certificates and Ratings Held at the Time of the Accident

Commercial Pilot (issued November 29, 2020)

Airplane Multiengine Land

Airplane Single-Engine Land

Instrument – Airplane

Medical Certificate- First-Class (Issued June 8, 2021)

Limitation: None

1.1.3 Pilot's Flight Time

The pilot's approximate flight times⁴ were based on AirNet II- records

Total Hours ⁵	1,274
Total Pilot in Command (PIC) Hours	1,142
Total Hours BE-58	54
Total Hours PIC BE-58	31
Night Hours ⁶	86
Night Hours BE-58	34
Actual IMC ⁷	21
Actual IMC BE-58	7
Actual IMC previous 30 Days	7
Simulated IMC	45
Hours Previous 24-hours	2.7
Hours Previous 7 Days	21.5
Hours Previous 30 Days	28.6

⁴ Flight time does **not** include the accident flight.

⁵ The pilot's most recent FAA Form 8710-1 "Airman Certificate and/or Rating Application," dated November 29, 2020, she indicated 553.20 total hours and 46.0 hours of "instrument" experience. The "instrument" experience does not differentiate between simulated or actual.

⁶ The pilot reported on an AirNet II "SIC Pilot Status Report," dated January 6, 2022, 83 hours at night and 66 instrument hours. The form did not specify if the instrument hours were actual or simulated, nor did it specify the aircraft make and model the hours were accumulated in. A review of the AirNet II "SIC Pilot Status Report," dated December 7, 2021, indicated 74.6 hours at night and 64 instrument hours.

⁷ Instrument meteorological conditions

1.1.4 Pilots Training and Proficiency Checks⁸

Date of Hire	October 25, 2021
Initial New Hire Training Completed	November 17, 2021
Competency/Proficiency Check Part 135 ⁹	November 17, 2021

1.2 Co-Pilot Information

The co-pilot was 55 years old. He was seated in the right front (co-pilot) seat. He had approximately 7,695 hours of total flight experience and approximately 60 of those hours were in the aircraft make and model. According to records provided to the Operational Factors investigator, his most recent recurrent training in the aircraft was on November 17, 2021. He was also qualified as a pilot-in-command for flights operated under *CFR* Part 135.

1.2.1 Co-Pilot Certification Record

Private Pilot – Airplane Single Engine Land certificate issued October 7, 1983.

Private Pilot – Airplane Single Engine Land, Instrument Airplane certificate issued July 13, 2007.

Commercial Pilot – Airplane Single Engine Land, Instrument Airplane certificate issued April 9, 2008.

Commercial Pilot – Airplane Single Engine Land, Airplane Multiengine Land, Instrument Airplane; Limitation – English Proficient certificate issued May 24, 2017.

Remote Pilot – Small Unmanned Aircraft System certificate issued June 5, 2017.

1.2.2 Co-Pilot Certificates and Ratings Held at the Time of the Accident

Commercial Pilot (issued May 24, 2017)

Airplane Single-Engine Land

Airplane Multiengine Land

Instrument – Airplane

Remote Pilot (issued June 5, 2017)

Small Unmanned Aircraft System

Medical Certificate First-Class (issued October 4, 2021)

Limitations: Not valid for any class after October 31, 2022

⁸ Source: Attachment 3 – Accident Pilots Flight Training Records

⁹ Training included an oral, written and flight maneuvers as required on *CFR* 135.293, 135.297, and 135.299. All 30-training items accomplished indicated a grade of “satisfactory.” One item, localizer approach, indicated retraining of the maneuver.

1.2.3 Co-Pilot's Flight Time

The co-pilot's approximate flight times¹⁰ were based on AirNet II-provided records

Total Hours ¹¹	7,695
Total PIC Hours	6,697
Total Hours BE-58	60
Total Hours PIC BE-58	60
Total Night Hours ¹²	158
Total Night Hours BE-58	30
Total Actual IMC ¹³	203
Total Actual IMC BE-58	14
Total Actual IMC Previous 30 Days	3
Total Simulated IMC	13
Hours Previous 24-hours	2.7
Hours Previous 7 Days	2.7
Hours Previous 30 Days	20.3

1.2.4 Co-Pilot's Training Record

Date of Hire	October 25, 2021
Initial New Hire Training Completed	November 30, 2021
Competency/Proficiency Check Part 135 ¹⁴	December 1, 2021

2.0 Airplane¹⁵

The airplane was a light, twin-engine, retractable tricycle landing gear, metal, low-wing monoplane aircraft. The airplane had a conventional horizontal and vertical stabilizer. The Beech 58 aircraft was also known as the Beech Baron. The control surfaces were bearing supported and operated through push-pull rods and conventional cable systems terminating in bellcranks.

The control column was a “throw-over” type control column which controlled the elevator and ailerons. To throw over the control wheel from one front seat to the other a T-handle latch on

¹⁰ Flight time does **not** include the accident flight.

¹¹ The pilot's most recent FAA Form 8710-1 “Airman Certificate and/or Rating Application,” dated May 24, 2017, indicated 7,217.20 total hours and 173.40 hours of “instrument” experience. The “instrument” experience does not differentiate between simulated or actual.

¹² The co-pilot reported on the AirNet II Verification of Pre-Qualification form, dated October 25, 2021, 128.8 hours of night experience and 202.2 hours of instrument experience. The form did not specify if the instrument hours were actual or simulated nor did it specify the aircraft make and model the hours were accumulated in.

¹³ Co-pilot's logbook indicated on March 29, 2021, he had 13.6 hours of actual instrument conditions and 179.7 hours of simulated instrument conditions. Source: Operational Factors – Attachment 3 – Accident Pilots Training Records.

¹⁴ Training included an oral, written and flight maneuvers as required on *CFR* 135.293, 135.297, and 135.299. All 30 training items accomplished indicated a grade of “satisfactory.”

¹⁵ Source: Beechcraft Baron 58 Airplane Flight Manual, Section VII “Systems Description”.

the back of the control arm was required to be pulled and the control wheel could be positioned as desired. In addition, there was an optional dual control column that was required for flight instruction¹⁶ but was not installed on the accident aircraft.

The rudder pedals which controlled the rudder were adjustable by pressing the spring-loaded lever on the side of each pedal arm and move the pedal to its forward or aft position.

The rudder, left aileron, and elevator were adjustable with the controls mounted on the center console through a close cable system. There were also mechanical position indicators for each of the trim tabs that were integrated with their respective controls. The left aileron tab incorporated servo action in addition to its trimming purpose. The elevator trim was accomplished through either the electric or the manual pitch trim system. The elevator trim was controlled by an “ON-OFF” switch located on the instrument panel and a thumb switch on the control wheel. It also had an emergency release button, which was located on the left handle grip of the control wheel. When the button was depressed, it would deactivate the system and would remain deactivated while being held in the depressed position.

AirNet II LLC’s Operations Specifications A003 authorized the BE-58-58 to operate under 14 *CFR* Part 135 in IFR and VFR conditions as well as conduct day and night operations.

The Beechcraft Baron 58 “Airplane Flight Manual” Section II “Limitations” listed the minimum flight crew as “*One Pilot.*”



Photo 1: Not the Accident Airplane. (Courtesy of Flickr)

¹⁶ The accident airplane did not have a dual yoke installed. However, in the months following the accident AirNet II LLC installed dual yokes on their Baron fleet.

3.0 Company Personnel Interviews

An interview with a pilot that had most recently flew the accident airplane, stated he flew the airplane the week prior, with the accident pilot. They operated a flight from SUS to APA and back to SUS. On the flight from APA to SUS, shortly after departure the cabin door, located on the right side of the airplane, “*popped open right after takeoff*”¹⁷ and they had to return to APA. He further stated that when the door popped open it “*felt draggy*” and that it was “*pretty loud.*” Additionally, when they configured the airplane for landing and extended the flaps to 40° the control column “*started shaking real bad.*” The flight landed uneventfully, and the door was secured.¹⁸ The flight then departed towards SUS. On that flight he recalled one maintenance item he wrote in the aircraft maintenance logbook, which was the combustion heater, other than that there were no mechanical issues with the airplane¹⁹.

In discussing the work environment with AirNet II personnel, they described it as “*very open door*” and “*never had an issue going to them [management].*”

The chief pilot stated that he himself and the director of operations would be always available to pilots via phone, except when one of them was required to go on rest, then the other would be on call. They stated that they were an open resource to the pilots and would field various questions from weather to cargo questions and others. The chief pilot stated that he “*had people who just flat out say that we’re not comfortable with this weather*” and that there has never been any punitive action taken on the pilot. Prior to the trip pairing the chief pilot and director of operations discussed the pairing of the two accident pilots because of their recent hire with the company. Additionally, they talked with pilots that had flown with either of the accident pilots recently and then talked with the accident pilots themselves about being paired together. The chief pilot stated that he “*got nothing, no expression of concern from either of them*”²⁰ for the accident pairing. Additionally, neither the chief pilot nor the director of operations received any calls from either of the two accident pilots the night of the accident questioning the weather or anything pertaining to the flight.

The ground training at AirNet II was provided in-house by other pilots. The ground training consisted of about a week of regulations, weather, aircraft systems, crew resource management, and the general operations manual. After the completion of the ground training, the pilot was then trained in a flight training device (FTD)²¹ for about one week. The FTD was configured as the airplane and was used to provide the pilot with an opportunity to learn the procedures required at AirNet II and as a refresher for their instrument scanning as the FTD could simulate both day and night IMC conditions. After the trainee pilot completed the FTD they operated the Baron airplane

¹⁷ Source: Operational Factors – Attachment 1 - AirNet II Personnel Transcripts pg. 168.

¹⁸ Beechcraft Baron 58 “Emergency Procedures” for an unlatched door in flight stated, in part “*...flight characteristics of the airplane will not be affected except for a reduction in performance. Return to the field in a normal manner...*”

¹⁹ Maintenance Records indicate that on January 5, 2022, the cabin heater combustion blower motor was replaced.

²⁰ Source: Operational Factors – Attachment 1 - AirNet II Personnel Interview transcripts pg. 68.

²¹ A full-scale replica of an airplane’s instruments, equipment, panels, and controls in an open flight deck area or an enclosed airplane cockpit, including the assemblage of equipment and computer software programs necessary to represent the airplane in ground and flight conditions to the extent of the systems installed in the device; does not require a force (motion) cueing or visual system. Source: [AC 120-45A - AIRPLANE FLIGHT TRAINING DEVICE QUALIFICATION \(faa.gov\)](https://www.faa.gov/aircraft/airrtrng/AC120-45A-AIRPLANE-FLIGHT-TRAINING-DEVICE-QUALIFICATION)

in the local area with an instructor pilot, which could be the director of operations, chief pilot, or other trained and qualified AirNet II pilot. During the flight training portion, the instructor if required would simulate instrument conditions in flight by either using a hat and sun visor; however, depending on the weather they may have done some of their training in actual IMC conditions. Following the flight training, either the chief pilot or director of operations would conduct a checkride with the trainee pilot to ensure they were meeting the standards required. Following the checkride, the trainee pilot would then operate on the line with other pilots.

According to the chief pilot and director of operations, the accident co-pilot was qualified to operate as the PIC on all *CFR* Part 135 flights in the Baron. The accident PIC had not obtained the required experience to operate as a PIC on *CFR* Part 135 flights and would be the PIC on the *CFR* Part 91 flights in order to gain the required experience. See Section 5.1 for further information on the requirements under *CFR* Part 135.

3.1 Pilot's Boyfriend Interview

The FAA personnel assigned to the accident from the St. Louis Flight Standards District Office, were contacted by and conducted an interview with the boyfriend of the pilot on January 11, 2022²². The boyfriend stated to them that the pilot had contacted him via text message, on the night of the accident just prior to departure from SUS. She had stated to him that she *"had concerns about this flight in particular due to the weather and her and the other pilot's skill set."* Additionally, her concern was that the other pilot had not done a lot of IFR flight, and she was *"not very confident in his IFR abilities."*

4.0 Company Information

AirNet II LLC offered scheduled and on-demand Part 135 cargo charter services and transporting of radiopharmaceuticals/nuclear medicine. AirNet II utilized seven Beechcraft Barons and 11 Bombardier Learjet 35A aircraft and was headquartered in Columbus, Ohio. Pilot bases were located at LCK and SUS. According to the Chief Pilot, at the time of the accident there were 22 pilots employed at AirNet II LLC and *"everyone is dual qualified."*²³

The operator did not have an SMS but did have an aviation safety action program (ASAP). According to the chief pilot, the ASAP committee has in the past provided the company with feedback on *"simple procedural things"* such as emergency checklist location. However, the chief pilot also stated that for about six months prior to the accident the ASAP committee *"had been quiet."*²⁴ A pilot member of the ASAP event review committee reported that the ASAP committee receives *"maybe one or two every few months."*²⁵

4.1 Company Organizational Chart

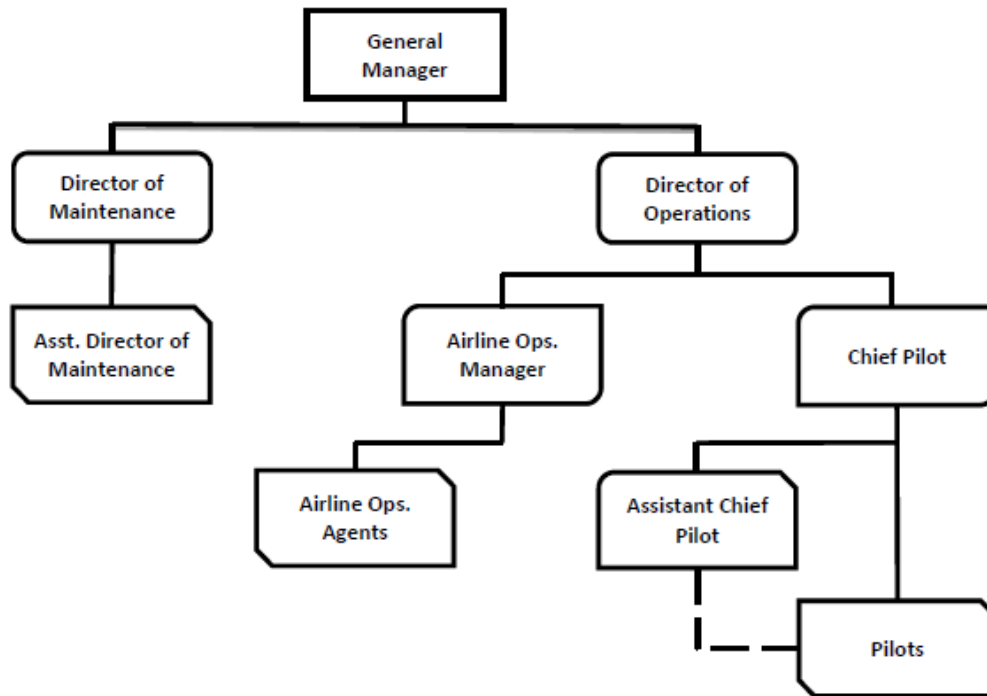
The AirNet II operations manual provided the following "company organizational chart":

²² Source: Operational Factors – Attachment 4 - "FAA Inspectors Interview Summary and Written Statement with Pilot's Boyfriend."

²³ Source: Operational Factors – Attachment 1 - AirNet II Personnel Transcripts, pg. 19.

²⁴ Source: Operational Factors – Attachment 1 - AirNet II Personnel Transcripts, pg. 25.

²⁵ Source: Operational Factors – Attachment 1 - AirNet II Personnel Transcripts, pg. 229.



NOTES

1. General Manager serves as agent of service for the certificate
2. Director of Operations satisfies the requirements of 14 CFR 119.69 (a) (1)
3. Chief Pilot satisfies the requirements of 14 CFR 119.69 (a) (2)
4. Director of Maintenance satisfies the requirements of 14 CFR 119.69 (a) (3)

5.0 Weight and Balance

The AirNet II Operations Specifications (OPS SPEC) A096 “Actual Weight Program for All Aircraft” provided authorization for using 436 lbs. for combined weights for flightcrew members, authorized persons, and their baggage. However, according to the director of operations, OPS SPEC A096 was only used when operating the Learjet; for the Baron fleet, pilots were to use actual weights.

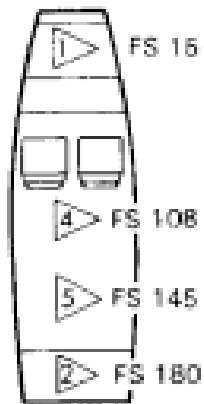


Figure 1: Source: Beechcraft Baron 58, Section VI.

USABLE FUEL				
		136 GAL	166 GAL	194 GAL
Gallons	Weight	Mom/100		
10	60	46	46	46
20	120	92	92	92
30	180	140	140	140
40	240	189	189	189
50	300	238	238	238
60	360	288	288	288
70	420	338	338	338
80	480	388	388	388
90	540	439	439	439
100	600	489	489	489
110	660	539	539	539
120	720	590	590	590
130	780	641	641	641
136	816	671		
140	840		692	692
150	900		743	743
160	960		793	793
166	996		824	
170	1020			845
180	1080			899
190	1140			953
194	1164			974

Figure 2: Usable Fuel Table. Source: Beechcraft Baron 58.

The figures below indicate the weight and balance of the aircraft and a graphical depiction of where calculated center of gravity would move as fuel was consumed. The weights in **bold** were

the aircraft limitations from Section 2 “Limitations” of the POH²⁶. The “Aft CG²⁷ Limit” was 86.0 inches Aft of Datum.²⁸ Figure 2 below shows the CG envelope range. The weights in *italics* were estimated weights. All weights are in lbs.

Maximum Ramp Weight	5,424
Maximum Takeoff Weight	5,400
Maximum Landing Weight	5,400

GENERAL WEIGHT AND BALANCE CHART

For Reference see Beechcraft Baron 58 POH Section VI "Wt. and Bal/Equip List"

ITEM	WT. (LBS.)	ARM (IN.)	MOMENT (IN. LBS.)
BASIC OPERATING WEIGHT	3816.0	76.67	292572.72
Front Seats - FWD ²⁹	339.0	75.00	25425.00
Front Seats - AFT		82.00	0.00
Nose Compartment		15.00	0.00
Cargo - FWD of Spar		108.00	0.00
Cargo - AFT of Spar ³⁰	60.0	145.00	8700.00
Cargo - AFT Baggage		180.00	0.00
Fuel LBS.	1164.0		97400.00
AFTER ENGINE START			
Fuel Remaining at Accident Site (estimate)	1128.0		94300.00
Climb Fuel Burn (approx.)	36.0		
TOTAL WEIGHT	5379.0	CG 78.84	TOTAL MOMENT 424097.72
ZERO FUEL WEIGHT	4215.0	77.51	MOMENT AT ACCIDENT 420997.72
APPROX WEIGHT AT ACCIDENT	5343.0	78.79425791	

Figure 3: Weight and Balance Calculation.

²⁶ Pilots Operating Handbook

²⁷ Center of Gravity which was defined as “the point about which an aircraft would balance if it were possible to suspend it at that point. It is the mass center of the aircraft or the theoretical point at which the entire weight of the aircraft is assumed to be concentrated. It may be expressed in inches from the reference datum or in percent of MAC. The CG is a three-dimensional point with longitudinal, lateral, and vertical positioning in the aircraft.”

Source: FAA Pilot’s Handbook of Aeronautical Knowledge Chapter 10.

²⁸ The Datum Line is located 83.1 inches forward of the centerline through the forward jack points. Source: Beechcraft Baron 58 Pilot Operating Handbook and FAA Approved Airplane Flight Manual, Section II Limitations.

²⁹ Pilot weights were based on their most recent FAA Medical certificate which were dated 6/8/21 and 10/4/21.

³⁰ Estimated crew bag weights were based on 30 lbs. for each bag which was the approved average for crew baggage in the company’s Learjet fleet. Source: Email from Director of Operations on March 2, 2022.

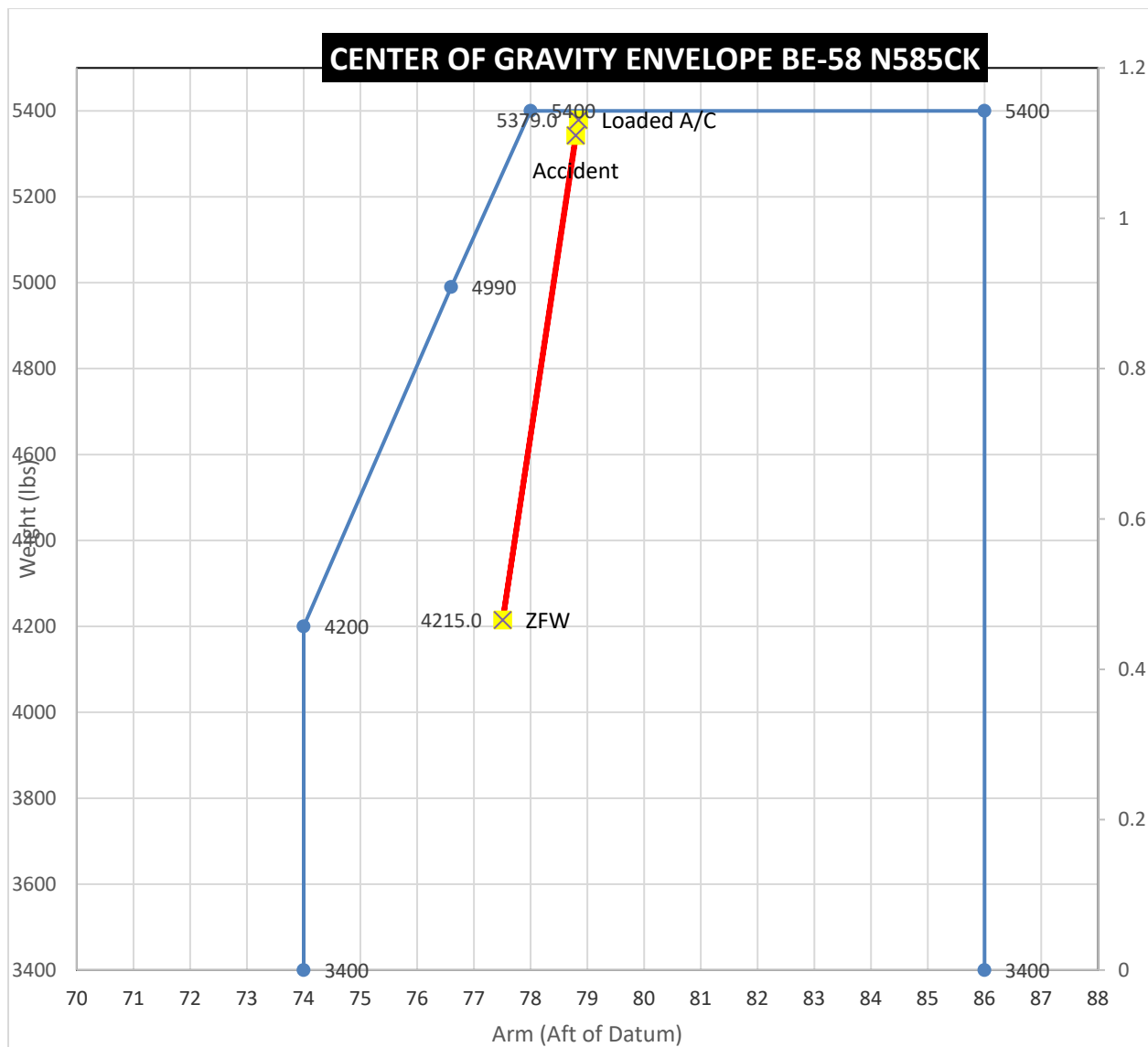


Figure 4: Center of Gravity Envelope.

5.1 Center of Gravity

The FAA’s Pilot’s Handbook of Aeronautical Knowledge (FAA-H-8083-25B), Chapter 10 “Weight and Balance” provides, in part, the following guidance on the effects and stability of aircraft in reference to the location of the center of gravity:

Stability and Center of Gravity Limits for the location of the CG are established by the manufacturer. These are the fore and aft limits beyond which the CG should not be located for flight. These limits are published for each aircraft in the Type Certificate Data Sheet (TCDS), or aircraft specification and the AFM or pilot’s operating handbook (POH). If the CG is not within the allowable limits after loading, it will be necessary to relocate some items before flight is attempted. The forward CG limit is often established at a location that

is determined by the landing characteristics of an aircraft. During landing, one of the most critical phases of flight, exceeding the forward CG limit may result in excessive loads on the nosewheel, a tendency to nose over on tailwheel type airplanes, decreased performance, higher stalling speeds, and higher control forces...

Control

In extreme cases, a CG location that is beyond the forward limit may result in nose heaviness, making it difficult or impossible to flare for landing. Manufacturers purposely place the forward CG limit as far rearward as possible to aid pilots in avoiding damage when landing. In addition to decreased static and dynamic longitudinal stability, other undesirable effects caused by a CG location aft of the allowable range may include extreme control difficulty, violent stall characteristics, and very light control forces which make it easy to overstress an aircraft inadvertently... The aft CG limit is the most rearward position at which the CG can be located for the most critical maneuver or operation. As the CG moves aft, a less stable condition occurs, which decreases the ability of the aircraft to right itself after maneuvering or turbulence

6.0 Relevant Systems

6.1 Autopilot

The Beechcraft Baron 58 Airplane Flight Manual, Section VII “Systems Description,” provided the following guidance on the autopilot and pressure system available on the Baron airplane:

Pressure for the flight instruments, deice boots, and autopilot (if installed) is supplied by two, engine-driven, dry pressure pumps interconnected to form a single system. If either pump fails, check valves automatically close and the remaining pump continues to operate all gyro instruments. A pressure gage on the instrument panel indicates pressure in inches of mercury. Two red buttons on the pressure gage serve as a source failure indicators, each for its respective side of the system. The pressure system incorporates two filters per engine. One is located on the rear baffle of the engine to filter intake air to the pressure pump. The other is down stream of the pump and is located aft of the firewall in the upper nacelle. This filter protects the instruments.

The Beechcraft Baron 58 Airplane Flight Manual, Section X “Safety Information” provided, in part, the following on the autopilot:

Because there are several different models of autopilots and electric trim systems installed in Beech airplanes and different installations and switch positions are possible from airplane to airplane, it is essential that every owner/operator review his Airplane Flight Manual (AFM) Supplements and ensure that the supplements properly describe the autopilot and trim installation on his specific airplane...

6.1.1 Bendix King KFC 200

The airplane was equipped with a Bendix King KFC-200 flight control system. According to the Bendix King “Pilot’s Guide” was a “*basic 2- axis system*” and provided pitch and roll with

altitude hold. It was equipped with a solid-state KC 295 Flight Computer which provided computed pitch and roll commands which were displayed as visual guidance commands on the V-bar. It was equipped with a "Flight Command Indicator," "Pictorial Navigation Indicator" and "Mode Controller."

The Flight Command Indicator (FCI) contained an air driven vertical gyro, at least one engine must be running, the pressure system must be operating, and the gyro was "up to speed" before the system would operate. The FCI displayed the following information:

- Pitch and roll attitude
- Pitch and roll commands
- DH (Decision Height) annunciation when used with radar altimeter



Photo 2: KI 256 Flight Command Indicator
(Source: Bendix King Pilot's Guide)

The Pictorial Navigation Indicator displayed constantly slaved gyro magnetic heading information, along with VOR/LOC/RNAV course deviation and glideslope deviation indications.



Photo 3: KI 525A Pictorial Navigation Indicator
(Source: Bendix King Pilot's Guide)

The Mode Controller contained six pushbutton switches for turning on the Flight Director and selection of all flight director modes. It also included a solenoid-held switch for autopilot engagement, a vertical trim rocker switch, and a preflight test button. On a similar aircraft as the accident aircraft, this was located on the lower left side of the instrument panel below the flight instruments.



Photo 4: KC 290 Mode Controller
(Source: Bendix King Pilot's Guide)

The KA 285 Annunciator Panel annunciated all vertical and lateral Flight Director/Autopilot system modes, including all “armed” modes prior to capture. It indicates to the pilot when the selected mode has been received and accepted by the system and if an “armed” mode was selected when capture has been initiated. It also is equipped with marker beacon lights and trim failure warning.



Photo 5: KA 285 Annunciator Panel
(Source: Bendix King Pilot's Guide)

6.1.2 Operating the KFC 200 System

The Bendix King Pilot's Guide provided, in part, the following information on the various modes and operations of the autopilot:

There are eleven (11) modes of operations that are provided by the KFC 200 system to offer the pilot Flight Director/Autopilot commands in response to his selection of desired modes on the Mode Controller.

Most of these modes are activated by pushbutton switches on the Mode Controller. These pushbuttons operate with alternate action. The first depression of the pushbutton activates a mode; the second depression cancels it, if it has not already been automatically deactivated. Annunciation of the mode selected appears on the annunciator panel.

Any operating mode not compatible with a newly-selected mode will be automatically cancelled in favor of the pilot's latest selection. This lets the pilot advance along his flight sequence without the inconvenience of having to manually cancel modes...

The Basic Mode of System Operation

The system will be in the Basic Attitude Reference or "Gyro" mode with engine running and aircraft "power on" but no modes selected (annunciator Panel blank). This provides indication of aircraft heading on the Pictorial Navigation Indicator, and roll and pitch attitude on the Flight Command indicator. The FCI command V-bar is biased out of view.

Flight Director Mode (FD)

The Flight Director mode is activated by depressing the "FD" button on the Mode Controller.

The FCI Command V-bar will appear and provide the pilot with steering commands to maintain wings level and the pitch attitude that existed at the time of Flight Director engagement. To fly the command V-bar, the pilot will bank and pitch the aircraft to put the orange delta wing "aircraft" into the V-bar. The command is satisfied when the V-bar aligns symmetrically at the top of the orange delta wing.

If pitch attitude is changed, recycling the FD button will synchronize the Command V-bar to the new pitch attitude.

If a change only in the commanded pitch attitude is desired, the Control Wheel Steering (CWS) button installed on the pilot's control wheel allows the pilot to synchronize the Command V-bar (in the FD mode with autopilot disengaged) without removing his hand from the control wheel.

The Flight Director can also be activated by direct selection of any specific mode, which will activate the Command V-bar. Such selection will illuminate both FD and the appropriate annunciator mode.

Autopilot Engagement (AP)

The autopilot is engaged by moving the solenoid-help AP switch on the Mode Controller to the “ON” position.

CAUTION: Prior to Autopilot engagement, the pilot should make sure the V-0bar commands are satisfied. This will prevent any rapid changes in the aircraft’s flight path when the Autopilot is engaged.

The Autopilot provides two-axis (pitch and roll) stabilization and automatic elevator trim as well as automatic response to all selected Flight Director commands.

Heading Select/Preselect Mode (HDG)

Select a desired heading by positioning the heading “bug” on the PNI. This is done with the HDG knob on the PNI.

Depress the HDG button on the Mode Controller to activate the HDG mode. “HDG” will light on the Annunciator Panel and a computed, visually displayed bank command is shown on the FCI. Following this bank command, the aircraft will bank and roll out on the desired preselected heading.

The Command B-bar on the FCI will deflect in the direction of the shortest turn to satisfy the commanded turn of the preselected heading. The aircraft may be manually banked to realign the V-bar and satisfy the command or, the Autopilot is engaged, the aircraft will automatically bank, turn to, rollout and hold the preselected heading. As the aircraft approaches the selected heading the V-bar will command a rollout to wings level.

With the HDG mode in operation, Subsequent changes made in the heading “bug” position on the PNI will immediately cause the V-bar on the FCI to call for a turn to the new heading, unless the HDG button on the Mode Controller has been depressed again to cancel the HDG mode.

The HDG mode is cancelled when NAV or APPR coupling occurs, or when the FD mode button is pushed to “OFF”

Navigation (NAV ARM and NAV CPLD) Mode

The NAV mode provides visual bank command on the Flight Command Indicator and deviation guidance on the PNI to intercept and track a VOR course or an RNAV course...

When the “NAV” button on the Mode Controller is depressed, “NAV/ARM” will be lighted on the Annunciator Panel and the automatic capture circuit is armed. Heading select, if operating, is retained until capture occurs.

The VOR or RNAV “course-capture” point is variable to prevent overshoot and depends on angle of intercept and the rate the course deviation is changing. Upon capture, a bank command will be displayed on the FCI; the HDG, if on, will be cancelled and “NAV/CPLD” will be lighted on the Annunciator Panel...

6.1.3 Operator Training on Autopilot

The operator provided a 10-page PowerPoint presentation on the use of the autopilot system, as part of the presentation on the avionics available on the Barron. The training consisted of both lateral and vertical modes, the most commonly used modes, how to engage and disengage the autopilot, pilot actions for autopilot malfunctions, and the limitations for the use of the autopilot. The training module provided the following altitude loss chart:

F. Maximum Altitude losses due to autopilot malfunction:	
<u>Configuration</u>	<u>Alt Loss</u>
Cruise, Climb, Descent	400'
Maneuvering	100'
APPR	40'
SE APPR	40'

Figure 5: Altitude Loss Chart
(Source: AirNet II BE 58 Avionics Training Module)

The training also described the required pilot actions needed in the event of autopilot malfunctions; those actions were:

- *During an unscheduled autopilot pitch or roll input there are steps that need to be taken to disconnect the autopilot and regain aircraft control*
 1. *Firmly grasp the control wheel*
 2. *Press and hold the autopilot/trim disconnect*
 3. *Retrim the aircraft as needed*
 4. *Pull the AP and Trim circuit Breakers*
 5. *Release the AP/TRIM disconnect*

6.2 Flight Instruments

The Beechcraft Baron 58 Airplane Flight Manual, Section VII “Systems Description,” provided the following guidance on the various instruments available to the pilot, including the flight instruments:

The flight instruments are located on a floating panel directly in front of the pilot's seat. Standard flight instrumentation includes attitude and directional gyros, airspeed, altimeter, vertical speed, turn coordinator, and a clock. A magnetic compass is mounted above the instrument panel and an outside air temperature indicator is located on the left

side panel. Located on the right side of the instrument panel is the standard pressure gage for the instrument air system.



Photo 6: Instrument Panel of N583CK - Similar as the Accident Airplane
(Note: Dual yoke was not on the accident airplane)

6.3 Pitot and Static System

The Beechcraft Baron 58 Airplane Flight Manual, Section VII “Systems Description,” provided the following guidance on the pitot and static system used on the Baron aircraft:

The pitot and static system provides a source of impact and static air for the operation of flight instruments.

PITOT SYSTEM

A standard pitot tube for the pilot's flight instruments is located immediately to the left of the nose gear doors. The optional pitot tube for the copilot's instrument is located to the right of the nose gear doors.

Left and right pitot heat switches, located on the pilot's left subpanel, supply heat to the left and right pitot masts respectively.

The pitot system needs no drain because of the location of the components.

STATIC SYSTEM

Static air is taken from a flush static port located on each side of the aft fuselage. The static air is routed to the rate-of climb indicator, altimeter and airspeed indicator. The static air line is drained at the emergency static air source by raising the lever to the emergency static air source position. Return the lever to normal position after the line is completely drained.

The emergency static air source is designed to provide a source of static pressure to the instruments from inside the fuselage should the outside static air ports become blocked. An abnormal reading of the instruments supplied with static air could indicate a restriction in the outside static air ports. A lever on the lower sidewall adjacent to the pilot, is placarded OFF NORMAL, ON EMERGENCY. When it is desired or required to use this alternate source of static air, select the ON EMERGENCY position. To recognize the need and procedures for the use of emergency static air, refer to EMERGENCY PROCEDURES. Airspeed Calibrations and Altimeter Corrections charts are in the PERFORMANCE section

6.4 Flight Control

The Beechcraft Baron 58 Airplane Flight Manual and Pilot Operating Handbook, Section VII "System Description," provided, in part, the following guidance on the flight controls on the Baron aircraft:

CONTROL SURFACES

Control surfaces are bearing supported and operated through push-pull rods and conventional cable systems terminating in bellcranks.

CONTROL COLUMN

The throw-over type control column for elevator and aileron control can be placed in front of either front seat. Pull the T-handle latch at the back of the control arm and position the control wheel as desired. Check for full freedom of movement after repositioning the control.

NOTE

If a reduced power throttle position exists when throwing over the control column, it will be necessary to momentarily move the throttle levers forward for passage of the control column.

The optional dual control column is required for flight instruction.

RUDDER PEDALS

To adjust the rudder pedals, press the spring-loaded lever on the side of each pedal arm and move the pedal to its forward or aft position. The adjustment lever can also be used to place the right set of rudder pedals against the floor, (when the copilot brakes are not installed) when not in use.

7.0 Relevant Procedures

7.1 Cruise Climb Procedures

The AirNet II Multi-Engine Maneuvers guidance provided, in part, the following procedure for “noise abatement climb procedure:”

- 1. After the gear is retracted, accelerate to VY ³¹ and climb at VY*
- 2. 500 feet or Airport Boundary (whichever comes first) and clear of obstacles, set the props to 2500 RPM*
- 3. At 1000' AGL, verify flaps up and accomplish “After Takeoff Checklist”*
- 4. When on course or if operational need dictates, establish a cruise climb (greater than VY)*

The Beechcraft Baron 58 “Airplane Flight Manual and Pilot’s Operating Handbook”, Section 10 “Safety Information” provided the following guidance on airspeed for climbout:

During normal two-engine operations, always fly V_y (V_x ³² if necessary for obstacle clearance) on initial climb out. Then, accelerate to your cruise climb airspeed, which may be V_y plus 10 or 15 knots after you have obtained a safe altitude. Use of cruise climb airspeed will give you better engine cooling, increased inflight visibility and better fuel economy.

The Beechcraft Baron 58 “Airplane Flight Manual and Pilot’s Operating Handbook”, Section IV “Normal Procedures” defined V_y as the “Two-Engine Best Rate-of-Climb” and indicated that the speed for that was 104 kts.

8.0 Additional Information

8.1 SPINS

The Beechcraft Baron 58 “Airplane Flight Manual,” Section II “Limitations” provided the following “Maneuvers” information:

This is a normal category airplane. Acrobatic maneuvers, including spins, are prohibited.

The Beechcraft Baron 58 “Airplane Flight Manual,” Section III “Emergency Procedures” provided the following information for spins:

If a spin is entered inadvertently:

³¹ V_y was defined as “speed for best rate of climb.” Source: Title 14 CFR 1.2 “Abbreviations and symbols.”

³² V_x was defined as “speed for best angle of climb.” Source: Title 14 CFR 1.2 “Abbreviations and symbols.”

Immediately move the control column full forward, apply full rudder opposite to the direction of the spin and reduce power on both engines to idle. These three actions should be done as near simultaneously as possible; then continue to hold this control position until rotation stops and then neutralize all controls and execute a smooth pullout. Ailerons should be neutral during recovery.

NOTE

Federal Aviation Administration Regulations do not require spin demonstration of airplanes of this weight; therefore, no spin test have been conducted. The recover technique is based on the best available information.

8.2 Spatial Disorientation

The FAA's Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25B), Chapter 17 "Aeromedical Factors" provided the following information, in part, on Spatial Disorientation and Illusions:

Spatial disorientation specifically refers to the lack of orientation with regard to the position, attitude, or movement of the airplane in space. The body uses three integrated systems that work together to ascertain orientation and movement in space.

- *Vestibular system—organs found in the inner ear that sense position by the way we are balanced*
- *Somatosensory system—nerves in the skin, muscles, and joints that, along with hearing, sense position based on gravity, feeling, and sound*
- *Visual system—eyes, which sense position based on what is seen*

All this information comes together in the brain and, most of the time, the three streams of information agree, giving a clear idea of where and how the body is moving. Flying can sometimes cause these systems to supply conflicting information to the brain, which can lead to disorientation. During flight in visual meteorological conditions (VMC), the eyes are the major orientation source and usually prevail over false sensations from other sensory systems. When these visual cues are removed, as they are in instrument meteorological conditions (IMC), false sensations can cause a pilot to quickly become disoriented...under normal flight conditions, when there is a visual reference to the horizon and ground, the sensory system in the inner ear helps to identify the pitch, roll, and yaw movements of the airplane. When visual contact with the horizon is lost, the vestibular system becomes unreliable. Without visual references outside the airplane, there are many situations where combinations of normal motions and forces can create convincing illusions that are difficult to overcome.

The Handbook also advised, "unless a pilot has many hours of training in instrument flight, flight in reduced visibility or at night when the horizon is not visible should be avoided."

The FAA Airplane Flying Handbook (FAA-H-8083-3) described some hazards associated with flying when visual references, such as the ground or horizon, are obscured. "The vestibular sense (motion sensing by the inner ear) in particular tends to confuse the pilot. Because of inertia,

the sensory areas of the inner ear cannot detect slight changes in the attitude of the airplane, nor can they accurately sense attitude changes that occur at a uniform rate over a period of time. On the other hand, false sensations are often generated; leading the pilot to believe the attitude of the airplane has changed when in fact, it has not. These false sensations result in the pilot experiencing spatial disorientation."

FAA Publication "Spatial Disorientation Visual Illusions" (OK-11-1550) , states in part *"false visual reference illusions may cause you to orient your aircraft in relation to a false horizon; these illusions are caused by flying over a banked cloud, night flying over featureless terrain with ground lights that are indistinguishable from a dark sky with stars, or night flying over a featureless terrain with a clearly defined pattern of ground lights and a dark starless sky."* The publication further provides guidance on the prevention of spatial disorientation. One of the preventive measures was *"When flying at night or in reduced visibility, use and rely on your flight instruments."* It further states *"if you experience a visual illusion during flight (most pilots do at one time or another), have confidence in your instruments and ignore all conflicting signals your body gives you. Accidents usually happen as a result of a pilot's indecision to rely on the instruments."*

Although FAA Advisory Circular AC 60-4A, "Pilot's Spatial Disorientation," was canceled in May 2015, it provided credible information. The tests conducted with qualified instrument pilots indicated that it could take as long as 35 seconds to establish full control by instruments after a loss of visual reference of the earth's surface.

8.2.1 AirNet II Spatial Disorientation Training

The AirNet II training curriculum for the Baron included ground training, a minimum of six session in a Frasca FTD, and a minimum of five sessions in a Baron. Of the six FTD sessions, five included *"unusual attitude"* maneuvers. Of the five sessions to be conducted in the Baron, three included *"unusual attitude"* maneuvers. The maneuvers included a completion standard that a *"pilot should be demonstrating proficiency to commercial PTS during maneuvers."* The director of operations stated that in addition to the practical in the Frasca and the airplane, there was also a briefing session prior to the lesson and a debriefing session following the lesson for the instructor and student to discuss spatial disorientation and unusual attitudes.³³

8.3 Risk Management

The FAA's Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25B), Chapter 2 "Aeronautical Decision-Making" provided, in part, the following information on Risk Management and Crew Resource Management:

The goal of risk management is to proactively identify safety-related hazards and mitigate the associated risks. Risk management is an important component of ADM. When a pilot follows good decision-making practices, the inherent risk in a flight is reduced or even eliminated. The ability to make good decisions is based upon direct or indirect experience and education...

³³ Source: Email from the director of operations dated May 17, 2022.

As you work through the ADM cycle, it is important to remember the four fundamental principles of risk management.

- 1. Accept no unnecessary risk. Flying is not possible without risk, but unnecessary risk comes without a corresponding return. If you are flying a new airplane for the first time, you might determine that the risk of making that flight in low visibility conditions is unnecessary.*
- 2. Make risk decisions at the appropriate level. Risk decisions should be made by the person who can develop and implement risk controls. Remember that you are pilot-in-command, so never let anyone else—not ATC and not your passengers—make risk decisions for you.*
- 3. Accept risk when benefits outweigh dangers (costs). In any flying activity, it is necessary to accept some degree of risk. A day with good weather, for example, is a much better time to fly an unfamiliar airplane for the first time than a day with low IFR conditions.*
- 4. Integrate risk management into planning at all levels. Because risk is an unavoidable part of every flight, safety requires the use of appropriate and effective risk management not just in the preflight planning stage, but in all stages of the flight.*

While poor decision-making in everyday life does not always lead to tragedy, the margin for error in aviation is thin. Since ADM enhances management of an aeronautical environment, all pilots should become familiar with and employ ADM...

While CRM focuses on pilots operating in crew environments, many of the concepts apply to single-pilot operations. Many CRM principles have been successfully applied to single-pilot aircraft and led to the development of Single-Pilot Resource Management (SRM). SRM is defined as the art and science of managing all the resources (both on-board the aircraft and from outside sources) available to a single pilot (prior to and during flight) to ensure the successful outcome of the flight. SRM includes the concepts of ADM, risk management (RM), task management (TM), automation management (AM), controlled flight into terrain (CFIT) awareness, and situational awareness (SA). SRM training helps the pilot maintain situational awareness by managing the automation and associated aircraft control and navigation tasks. This enables the pilot to accurately assess and manage risk and make accurate and timely decisions.

9.0 FAA Regulations

9.1 Title 14 CFR 135.242 – PIC Qualifications

CFR 135.242 (c) Pilot in command qualifications provided the minimum flight hour qualifications for a pilot to act as pilot in command of an aircraft operated in Part 135 operation under instrument flight rules (IFR). The minimum requirements were, in part:

- (1) Holds at least a commercial pilot certificate with appropriate category and class ratings and, if required, an appropriate type rating for that aircraft; and*

(2) Has had at least 1,200 hours of flight time as a pilot, including 500 hours of cross country flight time, 100 hours of night flight time, and 75 hours of actual or simulated instrument time at least 50 hours of which were in actual flight; and

(3) For an airplane, holds an instrument rating or an airline transport pilot certificate with an airplane category rating;

9.2 Title 14 CFR Part 135.93 – Autopilot minimum altitude

Title 14 CFR Part 135.93 provided, in part, the following regulations in regard to the minimum altitude for use of the autopilot:

(b) Takeoff and initial climb. *No person may use an autopilot for takeoff or initial climb below the higher of 500 feet or an altitude that is no lower than twice the altitude loss specified in the Airplane Flight Manual (AFM), except as follows -*

(1) *At a minimum engagement altitude specified in the AFM; or*

(2) *At an altitude specified by the Administrator, whichever is greater.*

(c) Enroute. *No person may use an autopilot enroute, including climb and descent, below the following -*

(1) *500 feet;*

(2) *At an altitude that is no lower than twice the altitude loss specified in the AFM for an autopilot malfunction in cruise conditions; or*

(3) *At an altitude specified by the Administrator, whichever is greater.*

The accident flight was above the minimum altitudes required by the limitations and the regulations.

9.3 Title 14 CFR 61.57 - Recent Flight Experience

Title 14 CFR 61.57 provided, in part, the following guidance for recent flight experience required to act as a pilot in command of an aircraft:

(c) Instrument experience. *Except as provided in paragraph (e) of this section, a person may act as pilot in command under IFR or weather conditions less than the minimums prescribed for VFR only if:*

(1) *Use of an airplane, powered-lift, helicopter, or airship for maintaining instrument experience. Within the 6 calendar months preceding the month of the flight, that person performed and logged at least the following tasks and iterations in an airplane, powered-lift, helicopter, or airship, as appropriate, for the instrument rating privileges to be maintained in actual weather conditions, or under simulated conditions using a view-limiting device that involves having performed the following -*

(i) *Six instrument approaches.*

(ii) *Holding procedures and tasks.*

(iii) *Intercepting and tracking courses through the use of navigational electronic systems.*

(2) Use of a full flight simulator, flight training device, or aviation training device for maintaining instrument experience. A pilot may accomplish the requirements in paragraph (c)(1) of this section in a full flight simulator, flight training device, or aviation training device provided the device represents the category of aircraft for the instrument rating privileges to be maintained and the pilot performs the tasks and iterations in simulated instrument conditions. A person may complete the instrument experience in any combination of an aircraft, full flight simulator, flight training device, or aviation training device...

(d) Instrument proficiency check.

(1) Except as provided in paragraph (e) of this section, a person who has failed to meet the instrument experience requirements of paragraph (c) of this section for more than six calendar months may reestablish instrument currency only by completing an instrument proficiency check. The instrument proficiency check must consist of at least the following areas of operation:

- (i) Air traffic control clearances and procedures;*
- (ii) Flight by reference to instruments;*
- (iii) Navigation systems;*
- (iv) Instrument approach procedures;*
- (v) Emergency operations; and*
- (vi) Postflight procedures.*

(2) The instrument proficiency check must be -

- (i) In an aircraft that is appropriate to the aircraft category;*
- (ii) For other than a glider, in a full flight simulator or flight training device that is representative of the aircraft category; or*
- (iii) For a glider, in a single-engine airplane or a glider.*

(3) The instrument proficiency check must be given by -

- (i) An examiner;*
- (ii) A person authorized by the U.S. Armed Forces to conduct instrument flight tests, provided the person being tested is a member of the U.S. Armed Forces;*
- (iii) A company check pilot who is authorized to conduct instrument flight tests under part 121, 125, or 135 of this chapter or subpart K of part 91 of this chapter, and provided that both the check pilot and the pilot being tested are employees of that operator or fractional ownership program manager, as applicable;*
- (iv) An authorized instructor; or*
- (v) A person approved by the Administrator to conduct instrument practical tests...*

(e) Exceptions.

(1) Paragraphs (a) and (b) of this section do not apply to a pilot in command who is employed by a part 119 certificate holder authorized to conduct operations under part 125 when the pilot is engaged in a flight operation for that certificate holder if the pilot in command is in compliance with §§ 125.281 and 125.285 of this chapter.

(2) This section does not apply to a pilot in command who is employed by a part 119 certificate holder authorized to conduct operations under part 121 when the pilot is

engaged in a flight operation under part 91 or 121 for that certificate holder if the pilot in command complies with §§ 121.436 and 121.439 of this chapter.

(3) This section does not apply to a pilot in command who is employed by a part 119 certificate holder authorized to conduct operations under part 135 when the pilot is engaged in a flight operation under parts 91 or 135 for that certificate holder if the pilot in command is in compliance with §§ 135.243 and 135.247 of this chapter...

According to AirNet II documentation both pilots had received training and were instrument current at the time of the accident.

G. LIST OF ATTACHMENTS

Attachment 1 – AirNet Personnel Transcript

Attachment 2 – FAA Principal Operations Inspector Interview Transcript

Attachment 3 – Accident Pilots Training Records

Attachment 4 – FAA Interview Summary and Written statement from Boyfriend of the PIC

Attachment 5 – Accident Flight Crew Flight Schedules – Previous 30 days

Attachment 6 – Fuel Records

Attachment 7 – Accident Aircraft Airframe Maintenance Log and Avionics Inventory [Excerpts]

Attachment 8 – AirNet II Training PowerPoint Slides [Excerpts]

Attachment 9 – Email on Crew Bag Weights

Attachment 10 – AirNet II General Operations Manual [Excerpt]

Attachment 11 – Baron Pilot's Operating Handbook and Airplane Flight Manual [Excerpts]

Submitted by:

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