



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

July 29, 2020

Group Chairman's Factual Report

OPERATIONAL FACTORS

CEN19MA190

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A. ACCIDENT

Location: Addison, Texas
Date: June 30, 2019
Time: 0911 central daylight time¹
Airplane: Textron Aviation B300, N534FF

B. OPERATIONAL FACTORS GROUP

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C. SUMMARY

On June 30, 2019, about 0911 central daylight time¹, a Textron Aviation B300, N534FF, was destroyed when it was involved in an accident near Addison, Texas. The airline transport pilot, the commercial co-pilot, and eight passengers sustained fatal injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

¹ All times are central daylight time (CDT) based on a 24-hour clock, unless otherwise noted.

D. DETAILS OF THE INVESTIGATION

On June 30, 2019, the Operations (Ops) Group Chairman traveled via commercial airplane to Dallas, Texas Love Field (DAL) and then via rental car to Addison, Texas. On the morning of July 1, the OPS Group Chairman attended the organizational meeting held by the NTSB Investigator-in-Charge (IIC), FAA participants, and parties to the investigation. The Operations Group was formed with a party member from the FAA. There were no Textron party members specifically assigned to the Ops Group; however, Textron assistance was available and provided throughout the field phase of the investigation and during follow-up activities.

The group toured the accident site and took photographs of the wreckage and damaged airport facilities. Due to the extensive aircraft damage, documentation of the cockpit was not performed by the Ops Group; the Systems Group Chairman agreed to perform this function. The Ops Group coordinated with NTSB Transportation Disaster Assistance (TDA) personnel to obtain medical and next-of-kin information on the flight crew and passengers. Witnesses were interviewed and copies of security camera video from numerous sources were collected and reviewed.

The Ops Group visited the hangar and facilities of the airplane's owner, EE Operations LLC, and interviewed the owner's representatives.

PTRS data and pilot blue ribbon packages were requested from the FAA. Statements were received from ADS Million Air employees who last serviced the airplane with fuel and copies of fueling records were obtained.

July 2, 2019, the Ops Group visited the pilot's family attorney in Fort Worth, TX to review the aircraft maintenance records. Once reviewed and inventoried, the records were received by the Ops Group Chairman and transported to the NTSB Command Center at ADS. The records were then turned over to the Maintenance Records Group Chairman.

On September 18, 2019, the Ops Group reconvened at the North Texas FAA Flight Standards District Office in Irving, Texas to interview the Flyte Aero LLC co-owners. On September 30, 2019, a contract mechanic for Flyte Aero, who was not available for the September 18 interview, was interviewed by telephone.

During the week of January 20-24, 2020, several pilots who knew the accident flight crewmembers were interviewed again, focusing on the pilot's rotation technique and procedures and his pre-takeoff checklist discipline.

E. FACTUAL INFORMATION

1.0 History of Flight

Flyte Aero personnel reported that they arrived at the owner's hangar at ADS between 0700 and 0730 on the morning of the accident to ready the airplane for the flight. The airplane was moved from the hangar to the ramp in front of the hangar with a tug. There was a "dime sized" drop of oil on the painted hangar floor which was easily wiped away with a rag. The airplane was clean

and showed no evidence of an oil leak. The pilots arrived soon thereafter and the passengers arrived after the flight crew. The airplane was serviced with 329 gallons of fuel; all tanks four were filled to capacity. The copilot greeted the passengers at the hangar. The passengers' bags were carried to the airplane by Flyte personnel and were loaded into the baggage compartment by the copilot. There was no scale around and the flight crew did not weigh any of the bags. The co-owner reported that the bags were "proportionate" for the time away; a pleasure trip to southwest Florida with family and friends. Also, there was food from a deli for the flight and some bottles of wine in a cooler.

The airplane was equipped with a cockpit voice recorder and the unit was powered up at 0706:54. At 0749:51, an unidentified person began discussing an oil burn (consumption) issue with the pilot. The conversation continued to say that the crew needed to monitor an oil burn issue with the left engine. The conversation concluded by saying the pilots needed to continue to monitor the issue, keep a log, and take notes. Flyte personnel reported that they did not have this conversation with the pilot; the identity of the person was not determined.

At 0751, the flight crew could be heard calling Jeppesen Technical Support regarding an activation key problem with the Proline Fusion system. The issue was not resolved prior to the flight. At 0826, the crew called up ATIS for the local weather. At 0830:11, the crew received their clearance to SPG on the ground control frequency. At 0902:59, there was noise similar to an engine start. At 0903:15, there was the sound of a second engine start. At 0903:39, there were sounds similar to a blower fan increasing and decreasing in intensity. At 0905:03, the copilot called ground control, stating they were ready to taxi. The flight was cleared to taxi at 0905:16.

At 0908:52, the copilot reported that the flight was ready for takeoff for runway 15. At 0909:41, the flight was cleared for takeoff. At 0910:10, there is an increase in propeller rpm. At 0910:24, the copilot called airspeed alive. At 0910:34, the airplane lifted off the runway. At 0910:40.1, the pilot indicated confusion. At 0910.41.0 there was the sound of a click. At 0910.41.7, a sound similar to a stall warning was noted. At 0910.43.6, the copilot stated that the left engine was lost just lost. At 0910.44, there was the sound of a chime. At 0910:44.5, there was the sound of another click noted. At 0910:45.2, the stall warning sound continued until the end of the recording. At 0910:48.8 the "bank angle" annunciator sounded. At 0910:49.5, an expletive from the copilot was heard. At 0910:49.5 and at 0910:50.5, the "bank angle" annunciator sounded again. At 0910:51.1, the sound of the airplane's impact with the hangar was heard.

Throughout the CVR recording, there was no call by the pilot or copilot for the airplane's before engine starting, engine starting, before taxi, or before takeoff (runup) checklists to be utilized. There was no passenger briefing prior to the flight. The flight crew did not discuss any emergency contingencies prior to takeoff, or what would be done if there was an engine failure during takeoff. The airplane's V-speeds were not called out during the takeoff roll.

Several witnesses observed the accident. One witness was located at the hangar to the north of the impacted hangar. She described the sound of the engines; the airplane was getting closer to her as her back was to the departing aircraft. She turned around to see where the aircraft was. The aircraft appeared as if it was flying in her direction. She initially thought the pilot was "showing off" because he was "way too low" to be turning left. Then she noticed the aircraft kept

turning and was going to hit the hangar next to her. After the crash, she could feel the heat from the fire. She did not notice anything with the aircraft engine noise or if both engines were still running.

Another witness was in his office at the time of the accident. The office was at the intersection of Airport and Addison Roads. His window faced the east side of the hangar that the airplane hit. He observed the airplane after it took off, and it appeared to be doing “stunts.” Then he realized that it was not a stunt plane; it was too large. He then saw the airplane spiral down, turning counter-clockwise. He could not hear the airplane from his office. It hit the hangar and he observed the fireball. He was going to call 911 until he realized that the fire station was adjacent to the hangar.

Another witness was outside on the ramp at the time, working on his airplane. He observed the King Air rotate at the 3,000 ft remaining marker for runway 33 and it climbed “pretty steeply” to about 50-75 ft agl. He first thought the pilot was “showboating” because of the steep rotation. The airplane then went into a “hard left yaw” with “full deflection of the rudder.” The pilot never raised the landing gear. Instead of lowering the nose, it looked like he increased power on the right engine, which further aggravated the yaw and added more roll. This put the airplane into an arcing left turn away from the runway. He kept pulling the nose higher instead of lowering it as if the pilot was trying to power through the engine loss. He was surprised that the pilot never thought to pull the power back on the right engine. The airplane stalled and he lost sight of it over the corner of the Atlantic Aero building.

Another witness was standing on the ramp at Atlantic Aero with a friend. The witness was a professional pilot with 20 years of experience: complex aircraft, jet aircraft, and flight instructor. She had an unobstructed view of the runway and hangar where the King Air crashed. She was facing south. She saw the King Air going down the runway. The airplane did not have its distinctive “growl;” it seemed more quiet than normal. The airplane sounded like it did not have sufficient power to take off. The airplane rotated, but did not have enough speed to fly. It was initially in ground effect, then it climbed slowly and then drifted to the left. It crossed the grass between the taxiway and runway. It was too early for a normal turnout after takeoff. It drifted initially with no bank, then it rolled and nosed into the hangar. This appeared to be a “textbook stall.” There was no smoke, no bangs, the gear were not up. The pitch angle was not excessively high, then it stalled.

For additional witness statements, see the NTSB public docket for this investigation.

2.0 Flight Crew Information

The accident flight crew consisted of a pilot and copilot. The pilot held a single-pilot type rating in the accident airplane. The copilot was not type rated in the accident airplane. According to the copilot’s wife, the pilot was always at the controls when passengers were on board; the copilot was not allowed to fly the airplane under those circumstances. A mutual acquaintance of both pilots reported that the pilot was not comfortable flying the King Air single pilot; he always took a copilot along on his flights.

2.1 The Pilot

2.1.1 The Pilot's Pilot Certificates and Ratings Held at Time of the Accident

AIRLINE TRANSPORT PILOT (Issued March 3, 2015)

AIRPLANE MULTI-ENGINE LAND

BE-300, CE-500, CE-650, CE-750, G-1159, G-IV, HS-125, IA-JET, LR-60, LR-JET
COMMERCIAL PRIVILEGES AIRPLANE SINGLE ENGINE LAND AND SEA

FLIGHT INSTRUCTOR (Issued November 7, 2002)

AIRPLANE MULTI-ENGINE

Limitations: Valid only when accompanied by pilot certificate no. [REDACTED]. Expires:
November 30, 2004.

MEDICAL CERTIFICATE FIRST CLASS (Issued December 21, 2018)

Restrictions: Must wear corrective lenses and possess glasses for near and interim vision.

2.1.2 The Pilot's Training and Proficiency Checks Completed

The pilot completed recurrent training in the accident airplane on March 23, 2019, at Rich Aviation Services, Fort Worth, Texas. The training consisted of 2.7 hrs in the airplane, including abnormal and emergency procedures. Ground training (systems) was completed on March 22, 2019 and included, but was not limited to, the following topics: engine/propellers, performance, and weight and balance.

The flight instructor for the pilot's recurrent training was interviewed after the accident. This was the first and only time he flew with the pilot. It was obvious to him that he was a career professional pilot. It was obvious that he had gone through lots of professional training before.

They briefed the entire profile before the flight; it was a good briefing of everything they planned to accomplish on the recurrent ride. Nothing stood out as far as the pilot's performance. He was "super strong" on King Air knowledge. If there was an area where he was weak, it was on the avionics and new technology. They spent some extra time with the external power connected going over the avionics in the airplane. The pilot demonstrated a good attitude during the training and accepted advice and coaching well. There were no areas of concern that he noticed.

The pilot performed well on the simulated single engine failure on takeoff. Since it was the actual airplane, the instructor did not pull an engine back on the runway for safety reasons. He would wait until positive rate of climb and gear coming up, about 200 to 300 feet agl, then would pull an engine back. This maneuver, like all the others, was pre-briefed.

The recurrent training accomplished a flight review and instrument proficiency check.

2.1.3 The Pilot's Flight Times

The pilot's flight times, in hours, based on a pilot history form completed and signed on March 7, 2019:

Total pilot flying time	16,450
Total flying time last 12 months	200
Total flying time last 90 days	45
Total multi-engine	16,250
Total turboprop	3,100
Total jet	13,250
Total B300	1,100
Total B300 last 12 months	30
Total B300 last 90 days	30

2.1.4 The Pilot's 72-Hour History

See NTSB Human Performance factual report, located in the public docket for this accident.

2.1.5 Additional Information About the Pilot

Several pilots were interviewed who knew the pilot and flew with him in the past. Regarding the pilot's takeoff rotation technique, all reported that the pilot used two hands during the rotation or they could not recall. None of the pilots interviewed reported that the pilot asked them to back them up on, or guard the power levers during the takeoff or rotation. One pilot reported that he had an aggressive rotation technique; he would "pull up abruptly" at rotation.

Acquaintances of the pilot were asked about his checklist usage. The consensus was that the pilot did not utilize the checklist during the normal operation of N534FF. One pilot reported that he was "bad about using checklists." Another pilot reported that he was "...not strong on using checklists." Another pilot reported that he was impressed with anyone who could "...climb into the airplane and take off with minimal use of a checklist."

Regarding weight and balance calculation, one pilot reported that, "Howard was not known for computing weight and balance." Another pilot reported that he would not compute weight and balance if he was familiar with the airplane; he would if he was unfamiliar with the airplane.

2.2 The Copilot

2.2.1 The Copilot's Pilot Certificates and Ratings Held at Time of the Accident

COMMERCIAL PILOT (Issued July 25, 2013)

AIRPLANE SINGLE AND MULTI-ENGINE LAND; INSTRUMENT AIRPLANE

FLIGHT INSTRUCTOR (Issued September 11, 2017)

AIRPLANE SINGLE AND MULTI-ENGINE; INSTRUMENT AIRPLANE

Limitations: Valid only when accompanied by pilot certificate no. [REDACTED]. Expires: 30 Sep 2019.

MEDICAL CERTIFICATE FIRST CLASS (Issued April 3, 2018)

Restrictions: None.

2.2.2 The Copilot’s Training and Proficiency Checks Completed

The pilot completed recurrent training in the B200 simulator on May 13-14, 2019, at Rich Aviation Services, Fort Worth, Texas. The simulator training consisted of 2.0 hrs, including abnormal and emergency procedures. Ground training (systems) was completed on May 13, 2019 and included, but was not limited to, the following topics: engine/propellers, performance, and weight and balance. The systems training included the Beech F90 with Beech C90/B200 differences training.

The flight instructor for the copilot was interviewed after the accident. He recalled the simulator session on May 14, 2019 for recurrent training. The copilot was “low time” but was building experience and did a “fine job.” He performed well with radio communications, use of checklists, and understanding procedures. One thing that he emphasized in recurrent were V1 cuts. In the past, he spent hours in the simulator doing that with the copilot. Constantly doing V1 cuts in the sim. He flew one trip with the pilot in an airplane. “He was a fine young man. Did a good job in the sim and the airplane.”

2.2.3 The Copilot’s Flight Times

The copilot’s flight times, in hours, based on a pilot history form completed and signed on April 1, 2019:

Total pilot flying time	2,357
Total flying time last 12 months	367
Total flying time last 90 days	189
Total multi-engine	1,254
Total turboprop	840
Total jet	116

2.2.4 The Copilot’s 72-Hour History

See NTSB Human Performance factual report, located in the public docket for this accident.

2.2.5 Additional Information About the Copilot

The pilot’s wife was interviewed after the accident. She reported that her husband was never allowed to fly the King Air (manipulate the flight controls in flight) when there were passengers on board.

A pilot who was knew both crewmembers reported that the pilot's personality could have affected the actions of the copilot during flight. He described the pilot as a "gear up, shut up" kind of pilot.

Other characterizations of the copilot included, "very, very particular," and very much "by the book." One pilot stated that he "...did a great job in (the) right seat...he was like a sponge...great flying habits."

3.0 Medical and Pathological Information

See NTSB Medical Factual Report, located in the public docket for this accident.

4.0 Aircraft Information

The accident airplane was a Textron Aviation B300, certified in accordance with 14 CFR Part 23 (Normal Category) and was an all-metal, low-wing, monoplane. It had fully cantilevered wings and a T-tail empennage. It was powered by two wing-mounted Pratt & Whitney Canada PT6A-60A turboprop engines rated at 1,050 shaft horsepower each. Each engine was equipped with a conventional four-blade, full-feathering, constant speed, counter-weighted, reversing, variable-pitch propeller mounted on the output shaft of the reduction gearbox.

The airplane, serial number FL-1091, was manufactured in 2017. The airplane was purchased by the owner on March 21, 2019.

The airplane was divided into two sections: cockpit and cabin. The cockpit consisted of the pilot and copilot seats, instrument and control panels, and other equipment. The cabin contained nine passenger seats (double four-place club seats and a belted lavatory seat), a cabin entry door, two emergency escape doors, and various passenger convenience items.

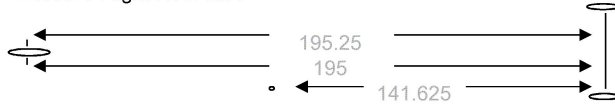
5.0 Weight and Balance

The weight and balance of the airplane was estimated using original factory data. Passenger weights were obtained from next of kin, FAA, drivers records, and the medical examiner. The cargo on the airplane was weighed during the recovery of the wreckage; however, some cargo was burned and an undetermined number of glass bottles were broken that contained beverages.

The maximum takeoff and landing weight for the accident airplane was 15,000 lbs. The estimated ramp weight prior to departure was 15,660 lbs. The computed center of gravity was 206.71 inches aft of datum (208.0 inches aft of datum was the aft limit).

Model: 350
S/N: FL-1091
Mod Sheet No:
Load Sheet No:
Effective Flight Nos: N/A

Weighed By: From Factory Data
Date: 3/7/2017
Loading Description: Nominal



Plumb Measurement Method (P)		
Nose Gear F.S.	Main Jack pt F.S.	Main Gear F.S.
30	83.5	225.125

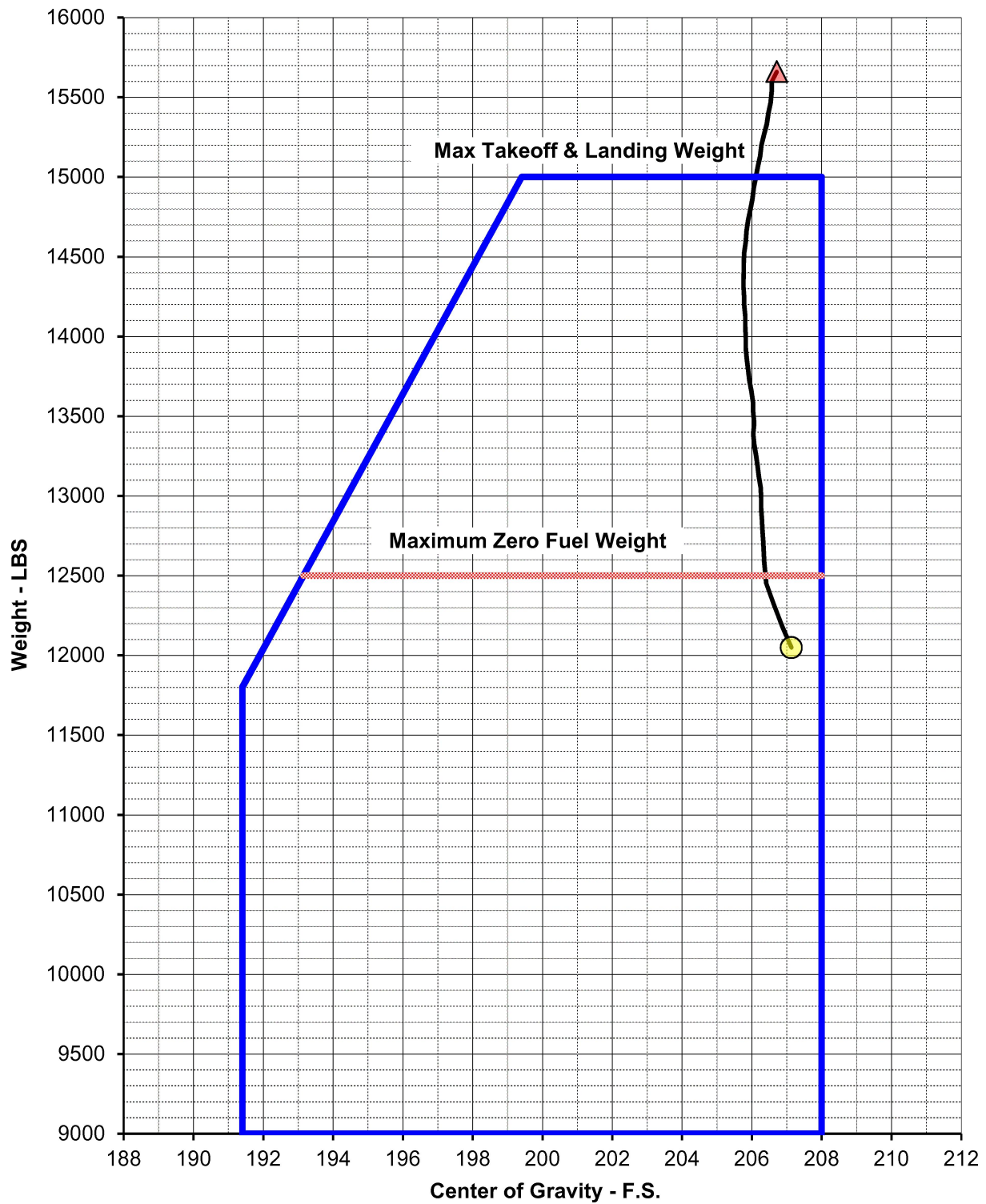
Reaction Points	Strut (S) Ext (d) in
Left Main	2.65
Right Main	3.5
Nose	2.25

Reaction Points	Indicate Reaction Method (P or S) S			
	Weight (lbs)	Arm (in)	Moment (in-lbs)	
Left Main	3302	239.9	792149.8	
Right Main	4086	239.9	980231.4	
Nose	2380	83.5	198730.0	
Total as Weighed	9768	201.8	1971111.2	
BEW				

Weighed Condition	Description	Weight (lbs)	Arm (in)	Moment (in-lbs)
Add	Drainable Unusable Fuel	-42	176.5	-7413.0
Less	Protective Seat Covers	8	222.6	1780.8
BEW				

Additions	Description	Weight (lbs)	Arm (in)	Moment (in-lbs)
Fuel	MAIN tanks	2545		
	AUX tanks	1066		
Crew	Pilot - Howard Cassidy Jr.	240	129.0	30960.0
	Copilot - Matthew Palmer	188	129.0	24252.0
Passengers	Row 1 - 1 Brian Ellard	135	174.0	23490.0
	Row 1 - 2 Gina Thelen	130	174.0	22620.0
	Row 2 - 1 Mary Titus	140	216.0	30240.0
	Row 2 - 2 Stephen Thelen	182	216.0	39312.0
	Row 3 - 1 Ornella Ellard	130	247.0	32110.0
	Row 3 - 2 Alice Maritato	130	247.0	32110.0
	Row 4 - 1 John Titus	215	292.0	62780.0
	Row 4 - 2 Dylan Maritato	138	292.0	40296.0
Cabinets	Forward	100	156.0	15600.0
	Mid	22	232.0	5104.0
	Low Profile	40	309.0	12360.0
Baggage	Aft	358.62	359.0	128744.6
	Cabin Baggage	8.69	174.0	1511.2
		8.69	216.0	1876.0
		8.69	247.0	2145.2
		8.69	292.0	2536.0
Miscellaneous	Magazine Rack	6	310.0	1860.0
	Chart Cases	50	148.0	7400.0

	Weight (lbs)	Arm (in)	Moment (in-lbs)
Zero Fuel Weight	12,049	207.13	2495831.15
Total Fuel Weight	3,611	205.32	741400.00
Ramp Weight	15,660	206.71	3237231.15



6.0 Performance

See Airplane Performance Factual Report, located in the public docket for this accident.

7.0 Meteorological Information

The ADS weather at 0847 included wind from 100° at 6 knots, 10 statute miles visibility, scattered clouds at 1,400 ft, temperature 24°C, dew point 20°C, and altimeter setting of 30.06 inches of mercury.

8.0 Aids to Navigation

Not applicable.

9.0 Communications

There were no known communication difficulties.

10.0 Airport Information

The accident airplane was based at Addison Airport (ADS), Addison, Texas. ADS was a public airport located at 32° 58.113'N, 096° 50.186'W. The airport elevation was 645 ft.

The airplane departed runway 15. Runway 15/33 was 7,203 ft long and 100 ft wide. The runway was grooved asphalt, in good condition. The runway was dry at the time of the accident. The airport had an air traffic control tower that was operational at the time of the accident.

11.0 Organizational and Management Information

The airplane was registered to EE Operations LLC. The Chief Financial Officer (CFO) for EE Operations LLC and EE Real Estate LLC was interviewed after the accident. He reported that EE Operations LLC was a subsidiary of Ellard Family Holdings LLC. The family-owned business consisted of real estate and insurance dealings. He reported that the airplane was used primarily for Ellard family business and personal travel for the Ellard family and their friends. He reported that the airplane was operated exclusively under 14 CFR Part 91.

The CFO also reported that all occupants on board the accident flight were the two flight crewmembers, members of the Ellard family, or close personal friends of the Ellard family. He reported that no passengers provided compensation for the accident flight. A review of operating paperwork found with the maintenance records did not reveal any records or receipts that indicated the airplane was operated for compensation or hire.

The CFO reported that the accident pilot managed the day-to-day operation of the airplane through his company, S&H Aircraft LLC. EE Operations LLC compensated the accident pilot for his management and pilot services, and S&H Aircraft LLC, in turn, hired and compensated the copilots used in the operation of the airplane. There was no FAA principal operations inspector (POI) required for the oversight of the operation of N534FF under 14 CFR Part 91.

12.0 Relevant Systems

12.1.1 Engine Controls Friction Locks

The airplane was equipped with four friction locks located on the power quadrant of the pedestal. Each power lever had its own friction lever knob; there was one knob that controlled both propeller levers and one knob that controlled both condition levers. For additional information on the power levers, see the Aircraft Systems factual report, located in the public docket for this investigation.

Several pilots were interviewed after the accident regarding the phenomenon of throttle lever migration, or the tendency for the one or both power levers to spring back towards idle in flight. Every King Air pilot interviewed was either aware of the issue or had experienced it personally. One pilot reported that he experienced it on a recent flight. He pushed the power lever back up and tightened the friction lock, which remedied the issue. He also stated that the friction knobs are sensitive; they are either too tight or not tight enough. Another pilot perceived that he had a right engine failure in flight; while performing the emergency procedures, he realized that the right power lever migrated to the idle stop.

12.1.2 Engine Oil System

Engine oil, contained in an integral tank between the engine air intake and the accessory case, cooled as well as lubricated the engine. An oil radiator located inside the lower nacelle, kept the engine oil temperature within the operating limits.

The lubrication system capacity per engine was 14 U.S. quarts or 3.5 U.S. gallons (13.2 liters). The drain and refill quantity were approximately 11 U.S. quarts (10.4 liters) with 5 U.S. quarts (4.7 liters) measured on the dipstick for adding purposes.

12.1.3 Rudder Boost System

Per the B300 POH, Section 7, Systems Description:

RUDDER BOOST

The rudder boost is enabled by setting the pedestal mounted control switch, placarded RUDDER BOOST-OFF, to the RUDDER BOOST position and the FGC Panel Switch AP/YD DISC bar up. The system senses engine torque from both engines. When the difference in these torques exceeds a preset level, the electric servo is activated and deflects the rudder, which assists pilot effort. The servo contribution is proportional to the engine torque differential. Trimming of the rudder must be accomplished by the pilot. The rudder boost system is disabled if the RUDDER BOOST switch is OFF and interrupted when the DISC TRIM/AP YD switch is depressed.

An amber caution annunciation, RUDDER BOOST OFF, is displayed on the MFD to indicate that the rudder boost system is inoperative due to either the rudder boost control switch in the OFF position or the trim disconnect switch on either control yoke.

12.1.4 Autofeather System

Per the B300 POH, Section 7, Systems Description:

AUTOFEATHER SYSTEM

The automatic feathering system provides a means of immediately dumping oil from the propeller servo to enable the feathering spring and counterweights to start the feathering action of the blades in the event of an engine failure.

Green AFX annunciators are displayed next to the corresponding prop indication in the EICAS window on the MFD.

A caution annunciator, placarded AUTOFEATHER OFF, in the caution/advisory/status annunciator panel, will illuminate whenever the autofeather system is not armed and the landing gear is extended.

12.2 Relevant Procedures

12.2.1 Engine Controls Friction Locks Procedures

The B300 Pilot's Operating handbook (POH), Section 4, Normal Procedures, included procedures for using the engine controls friction locks. The BEFORE ENGINE STARTING procedures, item 16, addressed the friction locks:

- 16. Power Console and Pedestal.....CHECK
 - a. Power Levers.....IDLE, FRICTION SET
 - b. Prop Levers.....FULL FORWARD, FRICTION SET
 - c. Condition Levers.....FUEL CUTOFF, FRICTION SET

The BEFORE TAKEOFF (RUNUP) procedures, item 7, included a second procedure to check the friction locks:

- 7. Engine Controls Friction Locks.....SET

12.2.2 Testing the Rudder Boost System

The B300 POH, Section 4, Normal Procedures, BEFORE TAKEOFF (RUNUP), included procedures for testing the rudder boost system.

- 9. Overspeed Governors and Rudder Boost.....CHECK
 - a. Rudder Boost Switch.....OFF
[RUDDER BOOST OFF] – CAS MESSAGE DISPLAYED
 - b. Rudder Boost Switch.....RUDDER BOOST
AMBER [RUDDER BOOST OFF] – CAS MESSAGE REMOVED
 - c. Prop LeversFULL FORWARD
 - d. Prop Governor Test SwitchHOLD TO GOV

- e. Power Levers (individually).....INCREASE UNTIL PROP IS
STABILIZED AT 1500 TO 1610 RPM. CONTINUE
TO INCREASE UNTIL RUDDER MOVEMENT IS NOTED
(right power lever, right rudder; left power lever,
left rudder. Observe ITT and torque limits.)
- f. AP/Trim Disconnect.....DEPRESS TO 1ST LEVEL
(rudder boost is interrupted)
RUDDER BOOST OFF CAS MESSAGE DISPLAYED
- g. AP/Trim Disconnect.....RELEASE
AMBER RUDDER BOOST OFF CAS MESSAGE REMOVED
- h. Power Lever.....IDLE
- i. Repeat steps e through h on the opposite engine.
- j. Prop Governor Test Switch.....RELEASE

12.2.3 Testing the Autofeather System

The B300 POH, Section 4, Normal Procedures, BEFORE TAKEOFF (RUNUP), included procedures for testing the autofeather system.

- 11. Autofeather.....CHECK
 - a. Autofeather Switch.....HOLD TO TEST
 - b. Power Levers.....APPROXIMATELY 22% TORQUE
LEFT AFX & RIGHT AFX DISPLAYED ON EICAS
 - c. Power Levers.....RETARD INDIVIDUALLY
 - (1) At approximately 17% torque – OPPOSITE ANNUNCIATOR -
EXTINGUISHED
 - (2) At approximately 10% torque – BOTH ANNUNCIATORS – EXTIN-
GUISHED (prop starts to feather)

NOTE

Autofeather annunciators cycle on and off with each fluctuation
Of torque as the prop feathers.

- d. Power Levers.....IDLE
LEFT [AFX] & RIGHT [AFX] – REMOVED
(neither prop feathers)
- e. Autofeather Switch.....RELEASE
- 12. Autofeather.....ARM
AMBER [Autofeather Off] CAS MESSAGE REMOVED

12.2.4 Engine Oil Consumption

The Pratt & Whitney Canada Maintenance Manual (MM) addresses oil consumption in the PT6A-60A engine. According to the MM, maximum oil consumption is 0.2 lb/hr (90 cc/hr) or 0.90 liter/10 hr.

F. LIST OF ATTACHMENTS

- Attachment 1: Witness Statements
- Attachment 2: Information from Persons familiar with the Flight Crew or Operation
- Attachment 3: Fueling Records and Statements
- Attachment 4: Flight History Form – Pilot
- Attachment 5: Recurrent Training Documents – Pilot
- Attachment 6: Recurrent Training Certificate – Pilot
- Attachment 7: King Air 350 (B300) Training Syllabus
- Attachment 8: Flight History Form - Copilot
- Attachment 9: Recurrent Training Documents – Copilot
- Attachment 10: Weight and Balance Information
- Attachment 11: Aircraft Specifications Sheet – N534FF
- Attachment 12: Hangar Services Agreement – N534FF
- Attachment 13: Dry Lease Agreement – N534FF
- Attachment 14: Aircraft Services Agreement – N534FF
- Attachment 15: Turbine Powered Aircraft Insurance Application
- Attachment 16: B300 Pilot’s Operating Handbook Excerpts
- Attachment 17: King Air Magazine Excerpts
- Attachment 18: P&WC PT6A Maintenance Manual Excerpts
- Attachment 19: Airport Diagram
- Attachment 20: Weather Information

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