National Transportation Safety Board

Memorandum

March 27, 2000

GROUP CHAIRMAN'S FACTUAL REPORT

OPERATIONAL FACTORS

A. ACCIDENT

Number	:	NYC-99-MA-178
Location	:	Martha's Vineyard, Massachusetts
Date	:	July 16, 1999
Time	:	2141 Eastern Daylight Time
Aircraft	:	Piper PA-32R-301TC, N9253N

B. OPERATIONS GROUP

Chairman	:	Mr. David S. Muzio National Transportation Safety Board Parsippany, New Jersey
Member	:	Mr. Steve Demko National Transportation Safety Board Parsippany, New Jersey
Member	:	Dr. Bartholomew Elias National Transportation Safety Board Washington, District of Columbia
Member	:	Capt. P.D Weston National Transportation Safety Board Washington, District of Columbia

C. SUMMARY

On July 16, 1999, about 2141 eastern daylight time, a Piper PA-32R-301, Saratoga II, N9253N, was destroyed when it collided with water approximately 7 1/2 miles southwest of Gay Head, Martha's Vineyard, Massachusetts. The certificated private pilot and two passengers were fatally injured. No flight plan was filed for the personal flight conducted in night visual meteorological conditions under 14 CFR Part 91. The flight originated from Essex County Airport, Caldwell, New Jersey, destined for Martha's Vineyard Airport, Vineyard Haven, Massachusetts.

D. DETAILS OF INVESTIGATION

The Operations Group, comprised of representatives from the National Transportation Safety Board, was formed on July 17, 1999, with additional members being added throughout the course of the investigation.

During the investigation, flight instructors who had flown with the pilot were interviewed, flight training records were reviewed, a copy of the pilot's logbook was examined, and witnesses were interviewed.

E. HISTORY OF FLIGHT

Witnesses stated that the purpose of the flight was to fly to Martha's Vineyard, drop off one passenger, and then continue on to Hyannis, Massachusetts.

An employee of a fixed base operator (FBO) at Caldwell stated he had called the pilot on the day of the accident, about 1300, to verify that the pilot wanted to use the airplane over the weekend. The pilot informed the employee he did plan to fly it, and would arrive at the airport between 1730 and 1800. The employee informed the pilot the airplane would be parked outside of the hangar.

A review of computer weather briefing records revealed that a person using the pilot's account obtained aviation weather information from an internet site, at 1834. The weather briefing was for a route from Teterboro, New Jersey, to Hyannis, with Martha's Vineyard as an alternate. The forecast for Hyannis called for winds 250 degrees true at 10 knots, visibility 6 miles, and sky clear; with winds becoming 280 degrees at 8 knots. Additionally, no AIRMETS or SIGMETS were issued for the route of flight, and all airports along the route of flight reported visual meteorological conditions.

Witnesses at Caldwell airport observed the pilot and a female near the airplane. One witness observed the pilot on crutches. The same witness also observed the pilot loading luggage into the airplane. Another witness observed the pilot perform an engine run-up and then watched the airplane depart about 2040, adding that the takeoff and right downwind departure "seemed normal."

According to communication transcripts, the pilot contacted ground control at Caldwell about 2034, and stated, "...saratoga niner two five three november ready to taxi with mike...right turnout northeast bound." The ground controller instructed the pilot to taxi to runway 22, which he acknowledged. At 2038:32, the pilot contacted the tower and advised he was ready for takeoff. At 2038:39, the tower controller issued a takeoff clearance, and the pilot acknowledged the clearance at 2038:43. A few seconds later, the tower controller asked the pilot if he was heading toward Teterboro, to which he replied, "No sir I'm uh actually I'm heading a little uh north of it, uh eastbound." The tower controller then instructed the pilot to make a right downwind departure. This was acknowledged by the pilot, at 2038:56. There was no record of any further communications between the pilot and air traffic control.

According to radar data, a target transmitting a VFR transponder code of 1200 was observed about 1 mile southwest of Caldwell at an altitude of 1,300 feet, at 2040:59. It remained on an approximate course of 055 degrees magnetic until reaching the Hudson River. Then, while remaining below 2,000 feet msl, the target turned north. About 8 miles northwest of the Westchester County Airport, White Plains, New York, the target began a climb to a cruise altitude of 5,500 feet. At the same time, it turned to a course of approximately 100 degrees, which remained constant until about 5 minutes before the accident. When the radar data was overlaid on a New York VFR sectional map, it showed that the target had crossed just north of Bridgeport, Connecticut, and then proceeded out over the water between Bridgeport and New Haven, Connecticut. The target then passed Point Judith, Rhode Island, continuing over the Rhode Island Sound, in the direction of Martha's Vineyard.

The radar data also revealed that the target began a descent from 5,500 feet msl about 34 miles west of Gay Head. The indicated airspeed during the descent was about 160 knots, and the rate of descent was about 600 feet per minute (fpm). About 2,200 feet msl, the target began a turn to the right and climbed back to 2,500 feet msl. It remained at 2,500 feet msl for about 1 minute while tracking southeasterly. The target started a second descent of about 900 fpm, and turned left back to the east. Thirty seconds into the maneuver, the target started a right turn and entered a descent that exceeded 4,700 fpm. The target's last recorded altitude was 1,100 feet msl, at 2140:34.

F. PILOT INFORMATION

The pilot held a private pilot certificate with a single engine land rating. His last FAA second class medical was dated December 27, 1997.

1. Overview of Pilot's Logbook

According to a copy of the pilot's first logbook, he started taking flight instruction on October 4, 1982, and over the next 6 years, flew with six different flight instructors.

During that period, the pilot logged 47.4 hours of flight experience, of which 46.9 hours were with flight instructors. In the same logbook, no entries were made from September 1988, to December 1997. From December 1997, until November 1998, the pilot flew with an additional six flight instructors, and logged another 178.2 hours of flight experience, of which 113.3 hours were with flight instructors.

No entries where found in the pilot's logbook beyond November 1998. Witnesses reported that the pilot used a different logbook after this time, and that he carried it in the airplane, along with the airplane's maintenance records. Neither of these documents were recovered from the accident site.

Maintenance records from the pilot's Cessna 182, logbook entries from known flight instructors, witness statements, and training records were used to reconstruct the pilot's flight time from December 1998, to the date of the accident. The combination of the first logbook and the reconstructed flight time indicated that the pilot had a total flight experience, including simulator time, of 326.5 hours, of which 55 hours were at night. In addition, the pilot had 35.6 hours in the accident airplane, of which 9.4 hours were at night. He also had 3.1 hours of solo time in the accident airplane, with 0.8 hours of that being at night. His last known flight without a flight instructor onboard was on May 28, 1999, in the accident airplane.

2. Flights to and From the Accident Area

Within 15 months prior to the accident, the pilot conducted a total of thirty five flights similar to the accident flight in various single engine airplanes. From Caldwell to Martha's Vineyard, four flights were conducted, with three of them being without a flight instructor. All four flights ended with night landings. From Teterboro to Martha's Vineyard, four flights were conducted. Three of them ended with night landings. The fourth flight was without a flight instructor and ended during daylight. From Caldwell to Hyannis, three flights were conducted, all were without a flight instructor, and two ended with night landings. From Teterboro to Hyannis, two flights were conducted, with one being without a flight instructor, and no night landings. From Martha's Vineyard to Caldwell, six flights were conducted. Five of the flights were without a flight instructor, and one ended with a night landing. From Martha's Vineyard to Teterboro, four flights were conducted. One of the flights ended in a night landing. From Hyannis to Caldwell three flights were conducted, all were without a flight instructor, and one ended with a night landing. From Hyannis to Teterboro one flight was conducted with a flight instructor and ended with a daylight landing.

Within 2 months prior to the accident, the pilot conducted eight flights similar to the accident flight in the accident airplane. From Caldwell to Martha's Vineyard, four flights were conducted resulting in three night landings. One of the flights was without a flight instructor, and ended during daylight. From Martha's Vineyard to Caldwell, three flights were conducted during daylight, with one of the flights being via Hyannis.

3. Excerpts from Remark Section In Pilot's Logbook.

Review of entries that were annotated as solo flights in the pilot's logbook revealed the following remarks:

On July 31, 1998, the pilot flew a Cessna 182 from Caldwell to Hyannis. The flight was conducted during both day and night. The pilot remarked that there was marginal VFR conditions, and of flying through and around clouds. The night portion of the flight was into Hyannis.

On September 7, 1998, the pilot flew a Cessna 182 from Hyannis to Norwood, Massachusetts, and back to Hyannis. The flight was conducted during daylight hours. The pilot remarked about hazy conditions and rain. He also referred to flying the airplane at a low altitude over the ocean.

On September 8, 1998, the pilot flew a Cessna 182 from Hyannis to Caldwell. The flight was conducted during daylight hours. The pilot remarked about rain and flying low at 2,500 feet.

On September 27, 1998, the pilot flew a Cessna 182 from Caldwell to Martha's Vineyard, and back to Caldwell. The flight was conducted during daylight hours. The pilot remarked about marginal VFR conditions partway due to haze and 4 miles of visibility.

4. Pilot's Training at Flight Safety International (FSI)

According to FSI records, the pilot had approximately 47 hours of flight experience before starting a private pilot training course at their facility in Vero Beach, Florida. The pilot started the course in December 1997, and completed it on April 20, 1998. He was then issued a private pilot certificate on April 22, 1998.

The flight instructor that prepared the pilot for his private pilot check ride, stated that the pilot had "very good" flying skills for his level of experience. During this period, the pilot flew a total of 52.9 hours, of which 43.3 hours were with a flight instructor.

On April 5, 1999, the pilot returned to FSI to enroll in an airplane instrument course. According to an instructor that flew with the pilot, the pilot did not enroll in the FAR Part 141 program because it required a student to complete the course without interruption. Even though the pilot elected to enter the Part 61 program, he followed the same curriculum and standard as the Part 141.

The pilot made several trips, primarily on weekends, to FSI to receive instrument training. The pilot departed FSI for the last time on April 24, 1999. When he departed, he had flown flew a total of 13.3 hours at FSI, of which all 13.3 hours were with flight

instructors. In addition, the pilot logged 16.9 hours of simulator time, and had satisfactorily completed up to lesson plan 12, out of 25.

According to FAA records, the pilot completed his airplane instrument written examination on March 12, 1999, and received a score of 78%. No records were obtained that indicated the pilot ever took an airplane instrument check ride.

3. Matrix of Pilot's Flight Experience

(a.) Pilot's Total Flight Time by Year

Year	Day	Night	*Night W/O CFI	Actual	Hood	Simulator	Dual	*W/O CFI	PIC	Total
1982	9.0	0.0	0.0	0.0	0.7	0.0	9.0	0.0	0.0	9.0
1983	3.3	0.0	0.0	0.0	0.2	0.0	3.3	0.0	0.0	3.3
1984	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	33.7	1.4	0.0	0.0	1.4	0.0	34.6	0.5	0.5	35.1
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	7.2	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	7.2
1998	145.5	33.2	10.8	2.9	8.2	0.0	113.8	64.9	136.7	178.7
1999	53.4	19.9	0.8	6.1	1.3	16.9	87.1	6.1	74.4	93.2
Totals	252.1	54.5	11.6	9.0	11.8	16.9	255.0	71.5	211.6	326.5

* Without a Flight Instructor Onboard the Airplane.

(b.) Pilot's Flight Time Previous 12 Months

Month	Day	Night	*Night W/O CFI	Actual	Hood	Simulator	Dual	*W/O CFI	PIC	Total
August	2.3	1.0	1.0	0.0	0.0	0.0	0.0	1.5	3.3	3.3
September	15.2	4.5	4.5	0.0	0.0	0.0	1.1	18.6	18.6	19.7
October	10.4	9.6	2.9	0.8	1.3	0.0	9.9	10.1	20.0	20.0
November	7.1	3.0	0.0	0.1	1.9	0.0	10.1	0.0	10.1	10.1
December	1.5	6.2	0.0	0.0	0.0	0.0	7.7	0.0	7.7	7.7
January	13.6	5.3	0.0	1.0	0.0	0.0	18.9	0.0	18.9	18.9
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	2.9	1.8	0.0	0.0	0.0	0.0	4.7	0.0	4.7	4.7
April	14.4	1.9	0.0	0.0	1.3	16.9	30.2	3.0	14.4	33.2
May	9.9	4.3	0.8	2.4	0.0	0.0	11.1	3.1	14.2	14.2
June	8.8	2.0	0.0	2.7	0.0	0.0	10.8	0.0	10.8	10.8
July	6.8	4.6	0.0	0.0	0.0	0.0	11.4	0.0	11.4	11.4
Total	92.9	44.2	9.2	7.0	4.5	16.9	115.9	36.3	134.1	154.0

* Without a Flight Instructor Onboard the Airplane.

(c.) Pilot's Total Flight Time by Aircraft

Make	Model	Day	Night	Actual	Hood	Simulator	Dual	PIC	Total
	A-39	1.1	0.0	0.0	0.0	0.0	1.1	0.0	1.1
Cessna	152	1.2	0.0	0.0	0.0	0.0	1.2	0.0	1.2
Cessna	172	17.9	2.8	0.0	0.9	0.0	20.7	6.6	20.7
Cessna	172R	5.5	6.0	0.8	0.5	0.0	8.9	11.5	11.5
Cessna	172RG	1.8	0.0	0.0	0.0	0.0	1.8	0.0	1.8
Cessna	182	79.8	27.9	2.2	3.2	0.0	57.3	107.7	107.7
Cessna	182S	13.8	1.5	0.9	2.6	0.0	13.2	13.6	15.3
Frasca	142	0.0	0.0	0.0	0.0	16.9	16.9	0.0	16.9
Grumman	AAIC	1.3	0.0	0.0	0.0	0.0	1.3	0.0	1.3
Piper	PA-128	6.0	0.0	0.0	0.0	0.0	2.8	6.0	6.0
Piper	PA-129	1.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0
Piper	PA-28-161	82.2	5.0	0.0	3.9	0.0	77.6	20.2	87.2
Piper	PA-28-181	9.4	1.9	0.0	0.7	0.0	10.8	3.4	11.3
Piper	PA-28-201	6.0	0.0	0.0	0.0	0.0	6.0	6.0	6.0
Piper	PA-32R-301	26.2	9.4	5.1	0.0	0.0	32.5	35.6	35.6
Piper	PA-44	1.9	0.0	0.0	0.0	0.0	1.9	0.0	1.9
Total		255.1	54.5	9.0	11.8	16.9	255.0	211.6	326.5

4. Interviews with Flight Instructors

(a.) Flight Instructor Number 1

This instructor was self-employed, and did not work for FSI. He was designated by the FAA as a "designated pilot examiner." His designation allowed him to give check rides for all certificates except airline transport pilot (ATP), and initial flight instructor. He was contracted by FSI on occasion to administer check rides as required by FAR Part 61. He gave approximately 200 check rides a year, and estimated that 80 percent of the applicants passed.

In April of 1998, the instructor was contacted by FSI to give the pilot a check ride for his private pilot certificate with a single engine land rating. When the oral portion of the examination was completed, and it was time for the flight portion of the examination, the weather was marginal. A front was passing through the area, and the instructor allowed the pilot to make the decision to proceed or cancel the check ride. The pilot elected to postpone the flight until the next day.

The next day, the weather cleared and the check ride continued. The pilot was asked to plan a VFR flight via a victor airway, and after departure, was placed under the "hood". While flying the airplane by reference to the instruments, the pilot was required to follow vectors given to him by the instructor. The instructor then took control of the airplane for the purpose of placing it into an unusual attitude. First, the instructor placed the airplane into a 45 degree bank, reduced power, and then returned control of the airplane to the student. For the second unusual attitude recovery, the instructor lowered the nose, started a turn, and added full throttle before returning control to the pilot. In both cases, the pilot

recovered while wearing a "hood" and referencing the airplane's flight instruments.

(b.) Flight Instructor Number 2

This instructor was the pilot's primary flight instructor at FSI during 1998 and 1999. He conducted training with the pilot in preparation for an airplane single engine land rating, and then an airplane instrument rating.

This instructor accumulated approximately 56.4 hours of flight time with the pilot over approximately 13 months. The certified flight instructor held ratings as an instrument instructor, multi engine instructor, and airline transport pilot. He had given over 2,100 hours of flight instruction, and had accumulated approximately 3,019 hours of total flight experience

Even though the instructor stated the pilot's progression was normal, and that he grasped all of the basic skills needed to complete the instrument course, he did remember the pilot having difficulty completing one of the lesson plans. According to the instructor, lesson plan number 11, which was designed to develop a student's knowledge of VOR and NDB operations while working with ATC, took 7 attempts to complete. The instructor added that the fourth attempt was satisfactory. The fifth lesson was conducted in a Piper PA-44 to introduce the pilot to multi-engine operations. The pilot then left FSI for approximately 1 week. After returning, the instructor felt he needed some refresher training before continuing, so they repeated lesson plan 11 two more times.

After the pilot completed lesson plan 11, the instructor felt the pilot's basic instrument flying skills and simulator work were excellent. However, when given multiple tasks while flying the pilot had trouble managing those tasks, which the instructor felt was normal for that stage of training.

In addition to flying with the pilot at FSI, the instructor flew with the pilot in the pilot's Cessna 182 on numerous occasions. He also gave the pilot an airplane "high performance endorsement" in the pilot's Cessna 182.

(c.) Flight Instructor Number 3

This instructor flew three times with the pilot at FSI. In addition to being a certified flight instructor, he functioned as an assistant group leader, standards pilot, and a stage check airman for FSI. He had approximately 1,600 hours of total flight experience, and about 1,100 hours as a flight instructor. In addition, he had 20 to 25 students complete their entire training program with him, and acquire certificates ranging from private pilot to flight instructor.

When the instructor was asked about the pilot repeating lesson number 11, the instructor commented that it was not unusual since the pilot came to FSI only on the weekends. With several days between periods, it was sometimes necessary for a pilot to review the previous lesson.

The instructor thought the pilot stopped his instrument training because of a broken foot. He also commented that the pilot was average, not a standout. The instructor added that the pilot showed improvement after each flight, and that he seemed well attuned with his abilities.

(d.) Flight Instructor Number 4

This instructor had approximately 3,200 hours of total flight experience, and about 1,100 hours as a flight instructor. In addition, he was a certified multi-engine instructor, a glider instructor, and an active duty military pilot. The flight instructor had approximately 4.5 hours of flight time in the pilot's Cessna 182 with the pilot. All of this time was acquired during a cross country flight from Ketchum, Idaho to Los Angeles, California, in January of 1999.

According to the flight instructor the pilot did an "excellent" job in all phases of the cross country flight. He was "very well trained," and possessed good checklist discipline. He had "excellent" situational awareness. In addition, he had an "excellent" general knowledge of aviation and flying. The instructor added that the pilot was a very motivated, hard working, and a professional student pilot and private pilot.

(e.) Flight Instructor Number 5

This instructor had approximately 12,000 hours of total flight experience, and 4,500 hours instructing. He was a certificated airline transport pilot and rated single engine, multi-engine, and instrument instructor. While working for a local flight school, the instructor met the pilot for the first time 11 years before the accident. The encounter was for a day and the instructor helped the pilot prepare for a private pilot oral examination. The second time was in April 1999. The instructor made three flights with the pilot over a 2-month period in the accident airplane, totaling about 3.8 hours. The last flight was on June 25, 1999. The instructor added that he did not log his personal flights so he had no way of knowing exactly how much flight time he flew with the pilot.

Their first flight together was after the pilot purchased the airplane. The flight was a combination of instruction and an evaluation of the airplane. The flight lasted for approximately 45 minutes, and the pilot did most of the flying. In addition, they tested the autopilot, global positioning system, radios, and general

flight characteristics of the airplane. No deficiencies or anomalies were identified. The instructor added that it was the nicest Saratoga he had ever seen.

Their second flight together was day VFR from Caldwell, New Jersey, to Washington, District of Columbia. The pilot flew the majority of the flight, and a standard traffic pattern to a full stop landing was executed. The instructor estimated that the flight was about 1.5 hours in duration. The pilot remained in Washington, and the instructor along with another flight instructor, flew the airplane back to Caldwell. The other instructor onboard also intended to provide flight instruction to the pilot, so the return flight was used to familiarize him with the airplane.

Their third flight was on June 25, 1999, from Caldwell to Martha's Vineyard, Massachusetts. The departure, en route, and descent portions of the flight were executed in VMC, but an instrument approach was required into Martha's Vineyard because of a 300 foot ceiling. The instructor requested an IFR clearance, and was cleared for the ILS 24 approach. The instructor used the opportunity to demonstrate a coupled approach, and the pilot executed the landing. During the landing, the instructor assisted with the rudders, because of the pilot's broken ankle. The instructor estimated the flight lasted approximately 1.5 hours. After dropping off the pilot, the instructor returned the airplane to Caldwell.

When asked to rate the pilot's aeronautical abilities, the instructor replied he was average for his level of experience. He also classified the pilot's ability to handle multiple tasks as average.

(f.) Flight Instructor Number 6

This instructor had approximately 14,172 hours of total flight experience, and about 12,449 hours as a certified flight instructor. In addition, he was an instrument flight instructor and multi-engine instructor. He flew with the pilot as an independent flight instructor, and as an employee of a local FBO. He started instructing the pilot on May 3, 1998, and their last flight was on July 1, 1999. By the end of their last flight together, the instructor had accumulated a total of 39.3 hours of flight time with the pilot, with 21.0 hours of that at night and 0.9 hours in instrument flight condition (IMC).

According to this instructor, the pilot used him on cross country flights for instruction, and as a safety pilot. The only exception was on IMC flights, then he was used primarily for instruction.

The instructor had no knowledge of the pilot ever suffering from a visual, or vestibular illusion, and he never saw the pilot inadvertently place the airplane into an unusual attitude. He continued by saying the pilot had the ability to fly the

airplane without a visible horizon, but may have had difficulty performing additional tasks.

The instructor flew with the pilot to Martha's Vineyard, in the accident airplane, on July, 1, 1999. The flight took place at night, and IMC prevailed at the destination. The pilot executed a straight-in approach via radar vectors to runway 24. During the flight, the pilot used, and seemed "competent" with the autopilot. The instructor added that during the flight, the pilot was wearing a non-plaster cast on his leg which required the instructor to taxi the airplane, and assist with the landing.

The instructor added that the accident pilot was not ready for an instrument evaluation as of July 1, 1999, and would need additional training, and instruction before passing the evaluation.

The instructor was not aware of the pilot conducting any flights in the accident airplane without an instructor onboard. In addition, the instructor stated he would not feel comfortable with the accident pilot conducting a night VFR flight on a similar route, and in similar weather conditions as the accident. Regarding the pilot's aviation decision-making, the instructor categorized him as "non-aggressive."

In a subsequent interview, the instructor added that he talked to the pilot on the day of the accident, and offered to fly with him on the accident flight. The pilot replied "he wanted to do it alone."

(h.) Flight Instructor Number 7

This instructor had approximately 1,800 hours of total flight experience, and about 1,300 hours as a certified flight instructor. In addition, he was an instrument instructor. He flew with the pilot as an independent flight instructor, and as an employee of a local FBO. He started instructing the pilot in May 1998, and their last flight together was on July 12, 1999. During this time frame, the instructor accumulated 57.2 hours of flight time with the pilot, with 16.9 hours at night, and 7.7 hours in IMC.

During the month of May 1999, the instructor flew with the pilot on a cross country flight. The flight was conducted primarily in IMC, and the autopilot may have been used, but the pilot did most of the flying, and the instructor felt the flight went well. The instructor continued by saying that the pilot had the capability to conduct a night flight to Martha's Vineyard as long as he had a visible horizon.

The instructor added that the pilot always wanted to learn more about aviation, and was committed to improving as a pilot. About a week before the accident,

the instructor flew with the pilot to Toronto, Canada. During the flight, the instructor witnessed the pilot studying the manual for the airplane's GPS. In addition, the instructor had worked with the pilot on the use of the airplane's autopilot, and felt he was competent.

According to the instructor, on one or two occasions, the airplane's autopilot turned to a heading other than what was selected. This required the autopilot to be disengaged and then re-engaged. He described the event as if the autopilot had independently changed from one navigation mode to another, and did not feel the event was significant because it only happened once or twice.

The instructor made six or seven flights with the pilot in the accident airplane to Martha's Vineyard. The majority of flights were conducted at night, and during the flights, the pilot had no trouble flying the airplane. In addition, the instructor had given the pilot a complex airplane signoff in the accident airplane.

The instructor concluded by saying that the pilot was methodical about his flight planning, and would compute a weight and balance whenever needed. He also considered the pilot to be very cautious regarding his aviation decision making.

In a subsequent interview, the instructor stated that he flew the accident airplane, along with the pilot back from Martha's Vineyard on June 1, 1999, after the pilot broke his ankle. He does not remember how the airplane got to Martha's Vineyard, but did not think, the pilot flew it without a flight instructor. In addition, he was not aware of the pilot ever operating the accident airplane without an instructor onboard. Also, he could not remember the exact date he gave the pilot a complex airplane sign off in the accident airplane, but thought it was before the injury.

In another interview, the instructor remembered seeing the pilot at East Hampton, New York on May 22, 1999. He talked with the pilot, and the pilot stated he had flown solo in the accident airplane from Caldwell, New Jersey. The pilot then flew solo to Teterboro, New Jersey. The flight was conducted at night, and the instructor followed in another airplane. The instructor estimates the flight took 0.8 hours.

5. *Pilot Medical and Pathological Information*

(a.) Pilot Medical History, June 1, 1999 to July 16, 1999

According to medical records, on June 1, 1999, the pilot fractured his ankle in a "hang gliding" accident, and on June 2, 1999, underwent surgery for the injury. On June 23, 1999, the pilot's leg was removed from a cast and placed in a Cam-Walker. On July 15, 1999 the Cam-Walker was removed. On July 16, 1999, the

pilot was given a "straight cane and instructed in cane usage." It was noted that the pilot was "full-weight bearing with mild antalgic gait."

The pilot's physical therapist described the pilot's limitations as not having full dorsiflexion, and could not determine whether the pilot's gait was due to this "slight" limitation of motion or due to mild pain.

The pilot's orthopedic surgeon felt that at the time of the accident, the pilot would have been able to apply the same pressure to his left foot that is required of the right foot during emergency braking of an automobile.

According to a witness that saw the pilot on July 16, 1999, at Caldwell, the pilot was on crutches talking on a phone. He also observed the pilot's sister-in-law retrieve a walking cane from a white convertible, then return to the airplane.

(b.) Toxicology and Autopsy Information

A toxicological test was performed on the pilot by the Federal Aviation Administration Toxicology and Accident Research Laboratory, Oklahoma City, Oklahoma.

An autopsy was preformed on the pilot on July 21, 1999, by Dr. James Weiner, Office of the Chief Medical Examiner, Commonwealth of Massachusetts.

6. Pilot 24 Hour History

According to a witness that was employed as the pilot's assistant, and who also managed his daily calendar, the pilot did not delay his planned departure time because of his wife or sister-in-law's schedule. In addition, she does not remember the pilot expressing any concerns about conducting the flight that night.

According to a witness who traveled from Manhattan, New York, on the day of the accident, via car service, over the George Washington Bridge to Teterboro Airport, Teterboro, New Jersey, traffic was the second heaviest he had ever seen. He added that he left Manhattan between 1815 and 1830 with an estimated arrival time of 1850 at Teterboro. His actual time of arrival was between 1930 and 2000.

The witness also reported that on the day of the accident, the executive editor for George Magazine, had a conversation with the pilot about the impending flight.

Contact information for the editor was requested in early December, then again via telephone on December 17, 1999, from an estate attorney responsible for

coordinating communications between the Safety Board, George Magazine, and the pilot's family. The attorney replied that the editor no longer worked for the magazine and did not know how to locate him, but would try. No communication was received from the attorney regarding the location of George Magazine's Executive Editor.

Using witness statements and other federal agencies, the executive editor of George Magazine was located, and a telephone interview was conducted by a Safety Board Investigator on March 4, 2000.

The editor began his employment at George Magazine in April or May of 1995, as senior editor. It was during this period he first met the pilot. Then in January 1999, the editor was promoted to executive editor. In both positions, he worked directly for the pilot, but closer after being promoted. The editor left the magazine on good terms on January 3, 2000, to pursue other opportunities.

The editor was aware of only one flight conducted by the pilot without a flight instructor onboard from November 1998, until the date of the accident. The flight took place in the pilot's Cessna 182 during April 1999, when the pilot accompanied by his wife flew to Washington, D.C. to attend a White House Correspondents Dinner. The witness added that the flight to Washington was conducted in late afternoon, and that the pilot encountered reduced visibility en route due to smoke.

When asked about the pilot's schedule on the day of the accident, the editor replied that the pilot usually left work between 3:00 p.m. and 4:00 p.m. on Fridays during the summer. He continued by saying that the pilot would have never planned to leave the office between 6:00 p.m. and 7:00 p.m. "He was the boss, and liked to get out of the office on Fridays." The editor had lunch with the pilot on the day of the accident, and recalled the pilot was in good sprits. During the lunch, the witness expressed concern to the pilot about his injury and flying. The pilot responded he was looking forward to the flight. The witness felt the pilot was frustrated about injuring his ankle and not being able to fly.

When asked for names of flight instructors the pilot may have flown with in his Saratoga, the editor responded Jay Biederman, and possibly John York.

In closing, the editor said the pilot was a seriously devoted student of flying, and worked hard at developing his flying skills.

G. AIRPLANE INFORMATION

According to FAA records the airplane was manufactured on June 9, 1995. On August 25, 1998, the airplane was purchased by Raytheon Aircraft Company, Wichita, Kansas,

and resold the same day to Air Bound Aviation, Inc., Fairfield, New Jersey. The airplane was sold again on August 27, 1998, to a pilot in New Jersey.

On April 28, 1999, the airplane was sold to Columbia Aircraft Sales, Inc., Groton, Connecticut. It was then sold back to Air Bound Aviation, Inc., on April 28, 1999, and to Random Ventures, Inc., New York, New York (the accident pilot), the same day.

According to FAA records, work orders, and a statement from an employee of a maintenance facility, a pre-purchase inspection of N9253N was conducted on April 16, 1999. According to the statement, "The aircraft was found to be in very good condition, with only a few minor discrepancies." At the time of the pre-purchase examination, the total airframe time was recorded at 581.9.

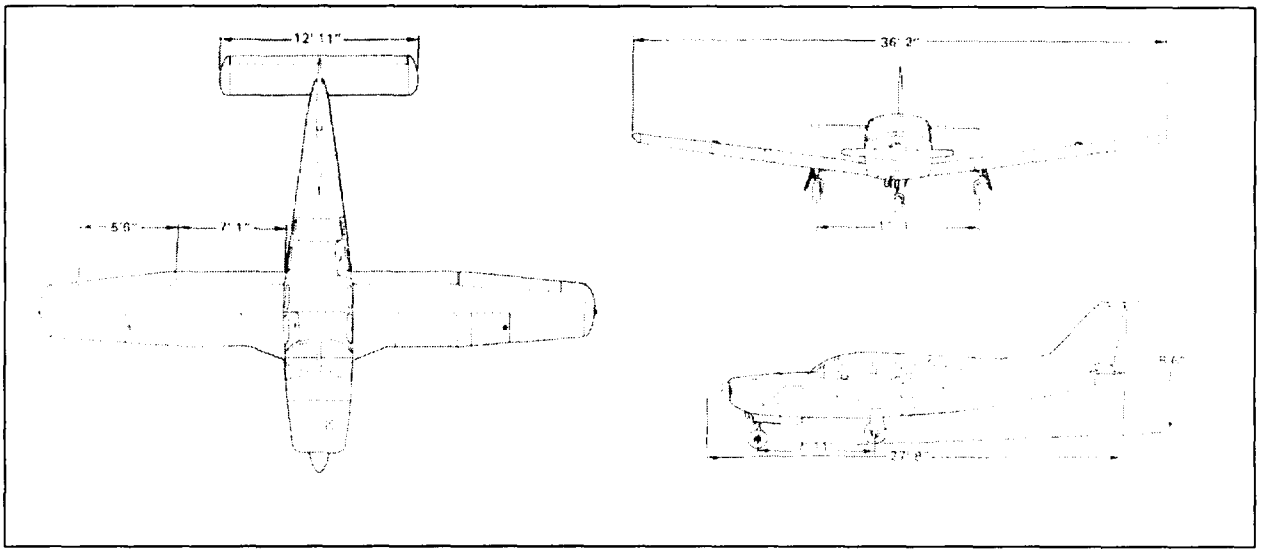
According to the airplane's Pilot Operating Handbook (POH), it was a single engine, low wing, with retractable landing gear. It was primarily constructed of aluminum. It could seat up to seven occupants, and had two separate 100 pound capacity baggage compartments. The overall length of the airplane was 27 feet 8 inches, with a wingspan of 36 feet 2 inches. Maximum takeoff and landing weight was 3,600 pounds. Airspeed limitations were published as 197 knots for "never exceed" speed, 154 knots for maximum structural cruising speed, and 134 knots for "design maneuvering" speed at 3,600 pounds. The airplane was designed for a positive flight load of 3.8 G. A negative flight load was not published; however, the POH did state inverted maneuvers were not approved.

Intentional spins were prohibited in the airplane, but the POH provided the following guidance for inadvertent spin entry: Immediately apply full rudder opposite the direction of rotation. Move the control wheel full forward while neutralizing the ailerons. Move the throttle to idle. Once the rotation stops, neutralize the rudder, and ease back on the control wheel as required to smoothly regain level flight.

The fuel system in the airplane was comprised of two interconnected tanks in each wing. Maximum fuel load was listed as 107 gallons with 5 gallons unusable. Fuel consumption for the engine at 75 percent power was approximately 16.0 gallons per-hour.

The stall characteristics of the airplane were "conventional". An approaching stall would be indicated by a stall warning horn which activated between 5 and 10 knots above stall speed. Mild airframe buffeting and gentle pitching could precede a stall. The gross weight stalling speed with power off and full flaps was 57 knots of indicated airspeed. With the flaps up the speed increased by 3 knots. Loss of altitude during a stall could be as high as 400 feet, depending on configuration and power.

1. Three View of Airplane:



H. WEIGHT AND BALANCE INFORMATION

A weight and balance was computed using five different scenarios. In each scenario the pilot, 200 pounds, was in the front left seat. The forward baggage compartment was loaded with 50 pounds, and the aft compartment with 100 pounds. Fuel onboard was estimated at 300 pounds, and was based on the airplane being topped-off in Buffalo, New York, then returning to Caldwell before departing on the accident flight. Both passengers were estimated to weigh 120 pounds, and the airplane's empty weight was estimated at 2,434 pounds with a center of gravity of 83.81 inches.

1. Airplane Weight and Balance Calculations

Scenario A - One passenger located in the right forward seat, with the other passenger located in the left or right rear facing middle seat. The total weight was 3,324 pounds, total moment was 293,616 inch-pounds, and the center of gravity was 88.3 inches.

Scenario B - One Passenger located in the right rear facing middle seat, with the other passenger located in the left rear facing middle seat. The total weight was 3,324 pounds, total moment was 297,648 inch-pounds, and the center of gravity was 89.5 inches.

Scenario C - One passenger located in the left or right rear facing middle seat, and the other passenger located in the left or right rear seat. The total weight was 3,324 pounds, total moment was 302,268 inch-pounds, and the center of gravity was 90.9 inches.

Scenario D - One passenger located in the right forward seat, with the other passenger located in the left or right rear seat. The total weight was 3,324 pounds, total moment was 298,236 inch-pounds, and the center of gravity was 89.7 inches.

Scenario E - One passenger located in the right rear seat, with the other passenger located in the left rear seat. The total weight was 3,324 pounds, total moment was 306,888 inch-pounds, and the center of gravity was 92.3 inches.

According to the center of gravity range chart, at 3,324 pounds the forward center of gravity limit was 86.6 inches, and the aft limit was 95.0 inches.

I. METEOROLOGICAL INFORMATION

According to a pilot who was planning a flight from Caldwell to Martha's Vineyard on the night of the accident, visibility at Caldwell was 4 miles about the time the accident pilot departed, and "extremely hazy." He added that he cancelled his flight, "Based only on the current weather conditions at CDW, the fact that I could not get my friends to come with me, and the fact I would not have to spend money on a hotel room in Martha's Vineyard."

A pilot that flew a Cheyenne II from Teterboro to Nantucket, Massachusetts around the time of the accident, VFR at 17,500 feet msl, stated that that the top of the haze layer was 14,000 feet msl. On climb out and below 14,500 feet, the pilot "...could easily pick out land marks...." 5 miles away. Above the haze layer visibility, was unrestricted, and void of clouds."

On the descent into Nantucket, and approximately 5 miles south of Martha's Vineyard, the pilot referenced his moving map display, and advised his passenger that the island should be on the left side of the airplane. The pilot and passenger attempted to acquire the island visually, but could not. The pilot added, "there was no horizon and no light." It was "inky black." The pilot then turned towards Martha's Vineyard, but still saw no evidence of the island. The airplane's anti-collision strobes had been on the entire flight, and the forward pointing lights had been on during the descent. At no time did any of them illuminate any clouds or fog. The pilot had no visual reference of any kind, nor did he have any evidence of a restriction to visibility. The pilot continued on to Nantucket, where he executed a VFR approach.

Another pilot, who departed Teterboro about 2030 on the night of the accident destined for Martha's Vineyard, stated that after departure, he climbed to 7,500 feet msl and monitored several ATC frequencies, but did not transmit on any of them until his arrival at Martha's Vineyard. His route of flight took him over the north shore of Long Island and to Montauk, New York. He then cross over Block Island, Rhode Island, and proceeded direct to Martha's Vineyard.

He added that the entire flight was under visual flight rules, with a visibility of 3 to 5 miles in haze. Over land, he could see lights on the ground when looking directly down or slightly forward. Over water, there were no lights to reference, and the pilot was not sure if he was on top of the haze layer. Between Block Island and Martha's Vineyard there was no visible horizon. The pilot remembered starting to see lights on Martha's Vineyard when he was in the vicinity of Gay Head at an altitude of 3,000 to 5,000 feet, but did not remember seeing the marine lighthouse at Gay Head. He also remember seeing the rotating beacon at Martha's Vineyard when he was 4 miles out. The pilot landed at Martha's Vineyard, and after a short stay, taxied for departure.

The pilot departed Martha's Vineyard just as the controller announced the tower was closing, about 2200. After takeoff, the pilot proceeded on a heading of 290 degrees, climbed to 6,500 feet, and proceeded direct to Groton, Connecticut. During the flight to Groton, the visibility remained the same as the flight to Martha's Vineyard, about 3 to 5 miles in haze.

A pilot that departed on a 2-hour flight from Bar Harbor, Maine at 1730 destined for Farmingdale, New York, reported that his preflight briefing indicated visual meteorological conditions en route. However, because of the pilot's familiarity with the route and possibility of summer haze, he elected to file an IFR flight plan. During the flight he was routed through the Cape Cod area. The flight was conducted at 6,000 feet msl and the pilot encountered visibilities of 2 to 3 miles throughout the flight due to haze. Most of the flight was in IMC and the lowest visibility was over water between Cape Cod and eastern Long Island. He did not encounter any clouds below 6,000 feet.

J. NIGHT FLYING INFORMATION

According to FAA-H-8083-3, Airplane Flying Handbook, "Night flying requires that pilots be aware of, and operate within, their abilities and limitations. Although careful planning of any flight is essential, night flying demands more attention to the details of preflight preparation and planning."

"Preparation for a night flight should include a thorough review of the available weather reports and forecasts with particular attention given to temperature/dewpoint spread. A narrow temperature/dewpoint spread may indicate the possibility of ground fog. Emphasis should also be placed on wind direction and speed, since its effect on the airplane cannot be as easily detected at night as during the day."

"Night flying is very different from day flying and demands more attention of the pilot. The most noticeable difference is the limited availability of outside visual references. Therefore, flight instruments should be used to a greater degree in controlling the airplane."

"Remember that if a descent must be made through fog, smoke, or haze in order to land, the horizontal visibility is considerably less when looking through the restriction

than it is when looking straight down through it from above. Under no circumstances should a VFR night-flight be made during poor or marginal weather conditions unless both the pilot and aircraft are certificated and equipped for flight under instrument flight rules (IFR)."

"Crossing large bodies of water at night in single-engine airplanes could be potentially hazardous, not only from the standpoint of landing (ditching) in the water, but also because with little or no lighting the horizon blends with the water, in which case, depth perception and orientation become difficult. During poor visibility conditions over water, the horizon will become obscure, and may result in a loss of orientation. Even on clear nights, the stars may be reflected on the water surface, which could appear as a continuous array of lights, thus making the horizon difficult to identify."

K. NIGHT VFR REQUIREMENT COMPARISON

1. General Information

According to the International Civil Aviation Organization (ICAO), the provision concerning operation of VFR flights between sunset and sunrise was contained in Annex 2, Rules of the Air, Chapter 4.

Paragraph 4.3, stated:

"VFR flight between sunset and sunrise, or such other period between sunset and sunrise as may be prescribed by the appropriate ATS authority, shall be operated in accordance with the conditions prescribed by such authority."

2. Selected Country Night VFR Requirements

A comparison of visual flight regulations for uncontrolled airspace from several countries, which were in effect at the time of the accident, was made. The regulation comparisons included, if applicable, weather requirements, airport and airspace requirements, specific pilot experience or training requirements, aircraft requirements, and any other additional information regarding night VFR. The information was compiled from sources, which included ICAO Supplement to Annex 2 – Ninth Edition, Rules of the Air. The supplement stated the differences between the national regulations and practices of States and the corresponding International Standards contained in Annex 2, as notified to ICAO in accordance with Article 38 of the Convention on International Civil Aviation and the Council's resolution of 21 November 1950.

(a.) United States

Below 10,000 feet, night VFR visibility requirements were 3 statute miles, and cloud clearance requirements were 500 feet below, 1,000 feet above, and 2,000 feet horizontal. An exception was in the traffic pattern of an airport at night and within one-half mile from the runway, the minimum requirements were clear of clouds and visibility not less than one mile.

The minimum training requirements for private pilots to conduct night VFR operations was 3 hours of night flight training that included one cross-country flight of over 100 nautical miles total distance; and 10 takeoffs and 10 landings to a full stop at an airport. Night flying exceptions were that, a person was not required to comply with the night flight training requirements if the person received flight training in and resided in the State of Alaska. A person who received flight training in, and resided in, the State of Alaska, but did not meet the night flight training requirements of this section, may have been issued a pilot certificate with a limitation, "Night flying prohibited". They also must have complied with the appropriate night flight training requirements within the 12-calendar-month period, after the issuance of the pilot certificate. At the end of that period, the certificate would have become invalid for use until the person complied with the appropriate night training requirements. The person may have had the "Night flying prohibited" limitation removed, if the person accomplished the appropriate night flight training requirements and presented to an examiner, a logbook or training record endorsement from an authorized instructor that verified accomplishment of the appropriate night flight training requirements.

(b.) Mexico

Night flights were subjected to all of the requirements that regulated instrument flights, except when the meteorological conditions allowed descents or ascents from cruise, inside a control area, or within a radius not greater than 10 nautical miles of the aerodrome.

(c.) New Zealand

If the person sought to exercise private pilot privileges at night, night flight experience must have been acceptable to the director. The holder of a private pilot license should not have acted as pilot-in-command or as co-pilot of an aircraft at night unless an appropriately qualified flight instructor had certified, in that holder's logbook, that the holder had satisfactorily completed the flight training required to perform that activity. Minimum required visibility for aircraft in uncontrolled airspace was 5 miles. The minimum ceiling in uncontrolled airspace was 1,500 feet.

(d.) Russia Federation

Night VFR was prohibited, unless authorized by the appropriate ATS authority. All flights were to be conducted under IFR.

(e.) Japan

No specific flight training was required. Minimum required visibility above 10,000 feet was 5 miles, surface to 10,000 feet was 1 mile. Minimum required cloud clearances above 10,000 feet was 1,000 above or below the cloud and 1-mile horizontally. From the surface to 10,000 feet was 500 feet above the cloud, 1,000 feet below, and 2,000 feet horizontally. An additional note was that many airports do not operate at night.

(f.) Argentina

Night flights outside the airport traffic zone must have been operated in total compliance with instrument flight rules. The minimum required visibility within an airport control zone was 3 statute miles. The minimum required ceiling within an airport control zone was 1,000 feet.

The holder of a private pilot license was to, before undertaking a local night flight, satisfactorily attended a course of approved training for the local night flight rating, which included:

Ten hours of instrument flight training or five hours of instrument flight training and 5 hours of instrument ground training, and 10 hours of local night flying, of which five hours should have been dual and five hours solo.

(g.) Cyprus

Night VFR was only allowed for training, and then only between the two island airports of LCLK and LCPH. All other night VFR flights were to be conducted under IFR.

(h.) Switzerland

An endorsement was to be mentioned on pilot's license or within pilot's logbook. Minimum required visibility was 5 miles. Minimum required ceiling was 1,000 feet.

(i.) Italy

An endorsement was required for night VFR flight. Minimum required visibility was 3 miles. Minimum required ceiling was 3,000 feet. IFR equipment was to be installed on the aircraft. Flight plan was to have been filed.

(j.) France

To fly at night in France, a pilot must have had night training and an endorsement from a flight instructor and three to five night landings in the past 6 months. Minimum required visibility was 5 miles. Minimum ceiling, for local flights within 7.5 miles of the airport was 1,500 feet. All other flights outside the local area had to have a minimum ceiling of 5,000 feet. A flight plan was required, if takeoff was to be 30 minutes prior to sunset or after dark. Flights must have been conducted below 2,000 feet if they were conducted out of airways, but in controlled areas. Pilots were also required to follow a designated VFR route that had specific reporting points. Radio contact was mandatory with ATC or auto information.

(k.) Finland

VFR flights were not to have been conducted at night outside of a control zone, in any airspace class, if the flight visibility was less than 5 miles. Exception was made for the traffic pattern of an uncontrolled aerodrome, if the ground visibility was 2 miles or better and cloud conditions that allowed the flight to be conducted clear of clouds at given minimum heights. Special authorization was required from CAA if the cloud base for the route of flight or in the respective area was less than 2,000 feet.

(l.) Australia

Pilot VFR Night Requirements:

The holder of a private pilot airplane license may have flown as pilot in command of an airplane, with no passengers, at night under VFR, without holding an airplane grade of night VFR. To conduct the operation, the pilot would have to be under the direct supervision of an authorized flight instructor, the airplane would have to be in a traffic pattern, and weather conditions would have to be VFR. The holder would also need, within 90 days before the day of the flight, at least three take-offs and three landings at night while flying under VFR as pilot in command. The take-off and landing requirement can also be met if the pilot preformed at least one take-off and landing at night with an instructor.

Qualifications for night flying under VFR:

Other than licensed agricultural operations, which a night VFR rating was endorsed, a student pilot, private pilot, commercial pilot or air transport pilot, was permitted to fly an aircraft in a traffic pattern at night under VFR. A pilot who held a license on which an instrument rating for a category of aircraft had been endorsed, may have flown an aircraft of the same category at night under VFR using the types of navigation aids endorsed in the pilot's log book for use with that rating. It was subject to compliance with any conditions that CASA issued in Civil Aviation Orders in relation to aeronautical experience and recent experience. CASA may have given a pilot who did not hold a license on which a night VFR rating or a night VFR agricultural rating had been endorsed, permission to fly an aircraft at night under the VFR on such terms and conditions as CASA may have directed.

VFR Night Flight Requirements:

Except with the permission of CASA, an aircraft shall not, except when necessary for take-off or landing, be flown at night under the VFR at a height less than 1,000 feet above the highest obstacle located within 10 miles of the aircraft in flight. A single engine aircraft must not have been flown at night under VFR except in the following operations. The operations were, private, aerial work, and charters that did not involve the carrying of passengers for hire or reward, and the operator was approved in writing by CASA to conduct the operations, and the operations were conducted in a turbine powered airplane approved in writing by CASA.

(m.) United Kingdom

VFR flight was not permitted in any UK airspace at night.

(n.) Netherlands

VFR flight was not permitted during the hours of darkness.

(o.) Canada

Canada required the filing of a flight plan for VFR at night. Canadian regulations also required a night "rating." The night "rating" consisted of 10 total hours of flight instruction, five dual, and five solo. Two hours of the dual must have been cross-country, and during the 5 solo hours there must have been 10 takeoffs and landings. The pilot must also have received 10 hours of instrument training.

The minimum required flight visibility for VFR night operations was 3 miles. The minimum distance of the aircraft from cloud was not to be less than 500 feet vertically and 2,000 feet horizontally.

L. SPATIAL DISORIENTATION INFORMATION

According to AC 61-27C, Instrument Flying Handbook, one purpose for instrument training is to maintain instrument proficiency which could prevent a pilot from being misled by several types of hazardous illusions that are peculiar to flight. In general, an illusion or false impression occurs when information provided by our sensory organs is misinterpreted or inadequate. Many illusions in flight can be created by complex motions and certain visual scenes encounter under adverse weather conditions and at night. "Some illusions may lead to spatial disorientation or the inability to determine accurately the attitude or motion of the aircraft in relation to the Earth's surface."

"The most hazardous illusions" that lead to spatial disorientation are created by the body's motion sensing system, located in each inner ear. This fluid-filled system consists of three semicircular tubes connected to a sac. Sensory organs in the tubes detect angular acceleration in pitch, yaw, and roll, and a sensory organ in the sac detects gravity and linear acceleration. In flight, the body's motion sensing system may be stimulated by aircraft motion alone, or in combination with head and body movement. This same system is not capable of detecting a constant velocity or "small" changes in velocity. Also, it is not capable of distinguishing between centrifugal force and gravity. In addition, "the motion sensing system, functioning normally in flight, can produce false sensations." For example, "deceleration while turning in one direction can produce the sensation of turning in the opposite direction, an illusion which can be corrected only by overriding the sensations from the inner ear by adequate outside visual references or by proper reading of flight instruments."

1. Major Illusions Leading To Spatial Disorientation

"The leans - A banked attitude, to the left for example, may be entered too slowly to set in motion the fluid in the "roll" semicircular tubes. An abrupt correction of this attitude can now set the fluid in motion and so create the illusion of a banked attitude to the right. The disoriented pilot may make the error of rolling the aircraft back into the original left-banked attitude or, if level flight is maintained, will feel compelled to lean to the left until this illusion subsides."

"Coriolis illusion - An abrupt head movement made during a prolonged constant-rate turn may set the fluid in more than one semicircular tube in motion, creating the strong illusion of turning or accelerating, in an entirely different axis. The disoriented pilot may maneuver the aircraft into a dangerous attitude in an attempt to correct this illusory movement."

"Graveyard spin - In a prolonged spin the fluid in the semicircular tubes which are in the axis of the spin will cease its motion. The deceleration that occurs during recovery to level flight will again set this fluid in motion, creating an illusion of spinning in the opposite direction. The disoriented pilot may return the aircraft to its original spin."

"Graveyard spiral - In a prolonged coordinated, constant-rate turn, the fluid in the semicircular tubes in the axis of the turn will cease its movement. An observed loss of altitude in the aircraft instruments and the absence of any sensation of turning may create the illusion of being in a descent with the wings level. The disoriented pilot may pull back on the controls, tightening the spiral and increasing the loss of altitude."

"Somatogravic illusion - A rapid acceleration during takeoff excessively stimulates the sensory organs for gravity and linear acceleration, and so creates the illusion of being in a nose-up attitude. The disoriented pilot may push the aircraft into a nose-low or dive attitude. A rapid deceleration by quick reduction of the throttle(s) can have the opposite the effect, with the disoriented pilot pulling the aircraft into a nose-up or stall attitude."

"Inversion illusion - An abrupt change from climb to straight-and-level flight can excessively stimulate the sensory organs for gravity and linear acceleration, creating the illusion of tumbling backwards. The disoriented pilot may push the aircraft abruptly into a nose-low attitude, possibly intensifying this illusion."

"Elevator illusion - An abrupt upward vertical acceleration, as can occur in a helicopter or an updraft, can shift vision downwards (visual scene moves upwards) through excessive stimulation of the sensory organs for gravity and linear acceleration, creating the illusion of being in a climb. The disoriented pilot may push the aircraft into a nose low attitude. An abrupt downward vertical acceleration, usually in a downdraft, has the opposite effect, with the disoriented pilot pulling the aircraft into a nose-up attitude."

"False horizon - A sloping cloud formation, an obscured horizon, a dark scene spread with ground lights and stars, and certain geometric patterns of ground lights can provide inaccurate visual information for aligning the aircraft correctly with the actual horizon. The disoriented pilot may place the aircraft in a dangerous attitude."

"Autokinesis - In the dark, a stationary light will appear to move about when stared at for many seconds. The disoriented pilot could lose control of the aircraft in attempting to align it with the false movements of this light."

"The sensations which lead to illusions during instrument flight conditions are normal perceptions experienced by normal individuals. These undesirable sensations cannot be completely prevented, but they can be ignored or sufficiently suppressed by developing absolute reliance upon what the flight instruments are telling the pilot about the attitude of his aircraft. Practice and experience in instrument flying are necessary to aid pilots in discounting or overcoming false sensations. As additional proficiency in instrument flying is acquired, pilots become less susceptible to these false sensations and their effects."

2. *Spatial Disorientation Training for Private Pilots*

According to the FAA Practical Test Standards, an applicant for a private pilot, single-engine-land rating must exhibit knowledge of spatial disorientation. In addition, the publication states that "the examiner shall also emphasize stall/spin awareness, spatial disorientation, wake turbulence avoidance, low level wind shear, inflight collision avoidance, runway incursion avoidance, and checklist usage."

A review of 14 CFR Part 61 (Certification: Pilots, Flight Instructors, and Ground Instructors) and Part 141 (Pilot Schools) revealed no training requirements specific to spatial disorientation.

A review of training records from FSI revealed that while preparing for his private pilot certificate, the pilot received instruction on the symptoms, causes, and effects of spatial disorientation, along with corrective actions, during a 3-hour block of instruction that included 37 other items. In addition, the pilot received unusual attitude training while attending the private pilot and instrument training courses at FSI.

M. ATTITUDE INDICATOR COMPARISON

According to AC 61-27C, "Instrument Flying Handbook," the operation of the bank index on some attitude indicators "can be confusing." For example, if an aircraft is banked to the right, some bank indexes (non-slotted) move left. Students "commonly misinterpret" these movements, and apply aileron control in the "wrong direction."

The accident airplane's attitude indicator was equipped with a bank index system similar in design to the one mentioned above. The pilot's previous airplane, a Cessna 182, which he sold approximately 2 months before the accident, was equipped with a slotted bank index.

N. AEROMEDICAL INFORMATION

1. *Information on Orthopedic Injuries*

According to Fundamentals of Aerospace Medicine, "although passengers can fly with an arm or leg cast, crew members must be able to perform their functions unencumbered. Further, they usually must have normal function of musculoskeletal system to accomplish the myriad of tasks involved in flight activities. In general, a crew member who has experienced an orthopedic injury should not be qualified for a return to flight duties until the injured part has regained essentially normal motion and muscle

strength. In addition, no residual discomfort or pain should be present at rest or during exertion that could restrict required activity."

"For example, a pilot may have a normal range of motion after an ankle injury but be unable to apply necessary brake pressure due to residual pain. A flight attendant with apparently normal range of arm motion may not be able to operate emergency equipment because of residual muscle weakness or pain restriction. Such examples emphasize the need to ensure that the crew member with a 'healed' injury is in fact fully qualified for a return to duty. They also demonstrate the need for the aerospace medicine physician to have detailed knowledge of the crew member's duties in order to make appropriate recommendations."

2. Information on Fatigue

According to the Aeronautical Information Manual, "Fatigue continues to be one of the most treacherous hazards to flight safety, as it may not be apparent to a pilot until serious errors are made. Fatigue is best described as either acute (short-term) or chronic (long-term)."

"A normal occurrence of everyday living, acute fatigue is the tiredness felt after long periods of physical and mental strain, including strenuous muscular effort, immobility, heavy mental workload, strong emotional pressure, monotony, and lack of sleep. Consequently, coordination and alertness, so vital to safe pilot performance, can be reduced." Acute fatigue is prevented by adequate rest and sleep, as well as by regular exercise and proper nutrition."

"Chronic fatigue occurs when there is not enough time for full recovery between episodes of acute fatigue. Performance continues to fall off, and judgment becomes impaired so that unwarranted risks may be taken. Recovery from chronic fatigue requires a prolonged period of rest."

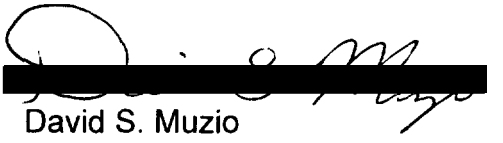
3. Information on Stress

According to the Aeronautical Information Manual, "Stress from the pressures of everyday living can impair pilot performance, often in very subtle ways. Difficulties, particularly at work, can occupy thought processes enough to markedly decrease alertness. Distraction can so interfere with judgment that unwarranted risks are taken, such as flying into deteriorating weather conditions to keep on schedule. Stress and fatigue can be an extremely hazardous combination."

"Most pilots do not leave stress on the ground. Therefore, when more than usual difficulties are being experienced, a pilot should consider delaying flight until these difficulties are satisfactorily resolved."

O. ADDITIONAL INFORMATION

A witness who hangared the accident airplane for the pilot stated that the pilot requested to have it moved out of the hangar about 5 to 10 times. In addition, the witness stated that the pilot was not authorized to move the airplane out of the hangar himself. He was required to let hangar personnel perform the task for him. Also, the witness was not aware of the pilot conducting any flights without a flight instructor onboard the accident airplane.



David S. Muzio
Air Safety Investigator

NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF AVIATION SAFETY
WASHINGTON, DC 20594

OPERATIONS GROUP FIELD NOTES

NYC-99-MA-178

A. ACCIDENT

Operator: John F. Kennedy, Jr.
Location: Near Martha's Vineyard, Massachusetts
Date: July 16, 1999
Time: About 2141 Eastern Daylight Time
Airplane: Piper PA-32R-301, N9253N

B. OPERATIONS GROUP

Dave Muzio, NTSB, Group Chairman
Stephen Demko, NTSB, Member
P. D. Weston, NTSB, Member

C. INTERVIEW SUMMRIES

Interviews were conducted on July22 & 23,1999, at the Flight Safety International Pilot Training Center, in Vero Beach, Florida as part of the investigation of accident number NYC-99-MA-178

Interview: Peter Benfield, Facility Director/Manager
Represented by: Declined
Present: P. D. Weston, NTSB
Time: July 22, 1999 12:30
Location: Flight Safety International, in Vero Beach, Florida

During the interview Mr. Benfield provided the following information:

He has been in his present position, Facility Director/Manager, for about 13 years. His center operates and maintains 92 airplanes that fly in excess of 7,000 hours a month

on a 7-day a week schedule. While a student is in training he/she must wear the center-approved uniform with epaulettes. The epaulettes denote the stage of training accomplished by the student i.e. 1/2 stripe solo, one stripe private pilot, etc. with four stripes being the notation for a graduate of the entire training program (solo through multiengine and Flight Instructor) offered at the center.

He first became acquainted with Mr. Kennedy during the fall of 1997, when Mr. Kennedy came to the center to purchase pilot supplies and buy uniforms. Mr. Kennedy wore the same uniform as all other students while in training at the center. Mr. Kennedy was scheduled to start his private pilot training in late December of 1997.

He recalled that Mr. Kennedy had originally started his flight training in 1982, soloed in 1988, and planed to start the private pilot training program with FSI. The records showed that Mr. Kennedy began training on December 28, 1997 but the training was stopped a few days later because of a death in the family.

Mr. Kennedy returned to the center about March 16, 1998 and remained in training until the completion of his private pilot check ride on April 22, 1998.

Most of the contact that Mr. Benfield had with Mr. Kennedy was administrative and he did not have the opportunity to fly with Mr. Kennedy.

Interview:	John McColgan, FAA Designated Pilot Examiner 15SO-078
Represented by:	Declined
Present:	P. D. Weston, NTSB
Time:	July 22, 1999 16:00
Location:	Flight Safety International, in Vero Beach, Florida

During the interview Mr. McColgan provided the following information:

Mr. McColgan was self-employed and he did not work for FSI. He was designated by the FAA to give pilot check rides and was contracted by FSI on occasion to administer check rides as required by Part 61. He gives about 200 check rides a year and estimates that 80% of the applicants pass the check ride. His designation allows him to give check rides for all certificates except ATP and initial flight instructor. He is authorized to give check rides within a geographic area that approximately encompasses the middle of the state of Florida. He reports to the FSDO in Orlando, Florida.

He is a retired US Air Force flight mechanic. During his assignment to the VIP transport squadron at Andrews Air Force base, on the VC-140 (Lockheed Jetstar) that he first met Mr. Kennedy. Mr. Kennedy was very young at the time and did not recall their earlier meeting on board the Jetstar.

Mr. McColgan was able to recall Mr. Kennedy's check ride in detail because of the notoriety of the applicant and his previous meeting with him. He was called by FSI to give Mr. Kennedy a private pilot's check ride on April 21, 1998. When the oral was completed and it was time for the flight portion of the check ride the weather was marginal, a front was passing through the area, and he allowed Mr. Kennedy to make the decision to proceed or cancel the check ride. Mr. Kennedy elected to postpone the check ride until the next day in improved weather. There was a letter of discontinuance issued to Mr. Kennedy. The next day the weather cleared and the check ride continued. Mr. Kennedy had been asked to plan a VFR trip out to Palm Beach County Glades (PHK) airport via victor airway 51. Sometime after departure Mr. Kennedy was put under the hood [to simulate instrument conditions] and during this time he flew the airplane only by reference to the instruments and was required to follow vectors given by Mr. McColgan. The check ride proceeded over the water to training area B south, when in the training area Mr. Kennedy was asked to recover from unusual attitudes by using the instruments. This was Mr. McColgan's standard procedure, so that if an applicant attempted to use visual references instead of instruments the applicant would not have a visible horizon to aid in the performance of the maneuver. The unusual attitude maneuver was successfully completed, as was the remainder of the check ride.

Mr. McColgan further explained how he set-up the unusual attitude recovery maneuver. There were two different phases to the event, in the first he would roll the airplane into a 450 bank, retard the power then give the controls to the applicant for the recovery. In

the second phase he would lower the nose, start a turn and add full power then give the controls to the applicant for the recovery. The entire check ride for Mr. Kennedy lasted one hour and fifty-three minutes. The time spent under the hood was at least 15 to 20 minutes. Mr. McColgan said that he always uses the FAA publication FAA-S-8081-14 as a guide for the maneuvers applicants perform during a check ride.

The check ride was given in N92429; an instrument equipped Piper Cadet.

Interview:	Jon Glenna, Flight Instructor
Represented by:	Declined
Present:	P. D. Weston, NTSB
Time:	July 22, 1999 14:30
Location:	Flight Safety International, in Vero Beach, Florida

During the interview Mr. Glenna provided the following information:

Mr. Glenna is a flight instructor, Assistant Group Leader, Standards Pilot and a Stage Check Airman. He has been with FSI as a flight instructor for two and one half years. He started in the position after receiving his certificates and ratings at FSI. He has about 1,600 hours total flying time with about 1,100 hours as a flight instructor. During this time he has had about 20/25 students complete their entire training program [solo, private pilot, commercial, instrument, multiengine and flight instructor] under his guidance.

He explained that FSI was a Part 141 training facility, and most of the training was given was under this part. However, some students are trained under Part 61. Mr. Kennedy was not enrolled in the part 141, FAA approved instrument training course because 141 training requires that a student, once started, complete the course without interruption. The check ride would be given by FSI personnel. Mr. Kennedy was enrolled in the Part 61 instrument training course because of his personal schedule that allowed his attendance only on weekends. As a Part 61 instrument student his check ride had to be given by a FAA Designated Pilot Examiner (DPE). He went on to explain that even though Mr. Kennedy was enrolled in the Part 61 course, the same training syllabus was used in his training as used in the Part 141 curriculum.

Mr. Glenna said that he acted as a substitute for Mr. Kennedy's normal instructor, Chris Benway, on three occasions. The first time was on April 17, 1999; the training period given in the Frasca trainer [a fixed based training device] that lasted two and one half-hours. During the period they went over maneuvers in lesson eleven. The second time he was with Mr. Kennedy was on April 23, 1999, when he flew a Piper Arrow to Orlando International Airport to pick-up Mr. Kennedy. On the return trip to Vero Beach Mr. Kennedy flew the airplane. The return flight lasted one hour and fifteen minutes. His third flight with Mr. Kennedy was on April 24, 1999. The training period was in N92429□, an instrument equipped Piper Cadet trainer that lasted one hour and forty nine minutes.

The training records appeared to indicate several repeats for lesson 11. Mr. Glenna stated that in Mr. Kennedy's case this would not be unusual since Mr. Kennedy came to FSI only on weekends for his training. With several days between training periods it was sometimes necessary to spend time in review of the previous weekend's lessons. Mr. Glenna stated that it was sometimes necessary to spend more time than one training period to accomplish the required items of a lesson. Although he was a stage

check pilot he never evaluated Mr. Kennedy because Mr. Kennedy was in the Part 61 training program and did not require stage checks by FSI personal.

He thinks the reason Mr. Kennedy stopped his instrument training was because of a broken foot, but he was not certain. He made general comments about Mr. Kennedy as a pilot that included; "Mr. Kennedy was an average pilot, not a standout. He showed improvement each time. He seemed to be well attuned with his abilities. He would want to see it done, then he would try it. He realized his abilities and limitations. Would accept criticism."

MILLION AIR®

FLIGHT TRAINING CENTER

July 21, 1999

Mr. David S. Muzio
National Transportation Safety Board
Northeast Regional Office
2001 Route 46, Suite 504
Parsippany, New Jersey 07054

Dear Mr. Muzio:

I, Bob Merena, have been employed as a flight instructor with General Aviation Aircraft Service, d/b/a/ Million Air since approximately 1975.

I first met John F. Kennedy, Jr., at the time of my initial flight with him in May of 1988. I flew with him on approximately fifteen (15) occasions. The last occasion that I flew with Mr. Kennedy was on July 1, 1999. This was a trip from Caldwell Airport to Martha's Vineyard with a solo return with the aircraft. This flight was a night flight and an instrument approach.

My last contact with Mr. Kennedy was by telephone on July 17, 1999. I had contacted Mr. Kennedy's office to inquire as to whether or not he needed his keys to the aircraft for that weekend. I was advised by Mr. Kennedy that he did not require the keys and that I should return them at my convenience to Mr. Ferguson at Caldwell Airport.

I am aware that Mr. Kennedy flew with a number of other flight instructors including J. Biederman and Timothy O'Neil. I have no personal knowledge as to the amount of time spent by Mr. Kennedy in the aircraft in question other than the time that I spent flying with him. I also have no personal knowledge concerning anyone else who may have flown that aircraft without Mr. Kennedy being present. I am also unaware of any unsafe or unlawful acts committed by Mr. Kennedy while operating the aircraft. It is my opinion, based upon my flight time with Mr. Kennedy, that he was a competent pilot.

Very truly yours,

Bob Merena

/cds

February 1, 2000

Mr. David S. Muzio
National Transportation Safety Board
Northeast Regional Office
2001 Route 46, Suite 504
Parsippany, New Jersey 07054

Re: **NTSB v. General Aviation Aircraft Service**

Dear Mr. Muzio:

I would ask that you accept this letter as an amendment to the prior Statement that I provided to your office concerning my involvement with John F. Kennedy, Jr. There was a typographical error in the prior Statement which indicated that I had last spoken to John F. Kennedy, Jr. on July 17, 1999. Actually, my last conversation with Mr. Kennedy on July 16, 1999. Thus, I would ask that you amend my prior Statement accordingly.

Please let me know if I can be of any further assistance to your investigation in this matter.

Very truly yours,

Bob Merena

BM/dmm

National Transportation Safety Board

Memorandum for Record

NAME: Robert Merena (CFI) DATE: January 27, 2000 TIME: 1400 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

The instructor stated that he talked to the pilot on the day of the accident, and offered to fly with him on the accident flight. "The pilot replied he wanted to do it alone." In addition, the instructor restated that he was not aware of the pilot ever flying the accident airplane without an instructor onboard.

[redacted]

DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

National Transportation Safety Board

Memorandum for Record

NAME: Brian Calcagne (Witness) DATE: July 23, 1999 TIME: 0930 EDT

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

According to a witness that sold the pilot a Cessna 182, the airplane had approximately 1,655 hours on it at the time of sale. When the pilot wanted to sell the airplane, the witness made an offer. An agreement was made, and the witness re-acquired the airplane. After the second sale, the airplane had approximately 1,792 hours on it.

The witness, who also hangared the pilot's Cessna for him, and then his Piper, stated that the majority of flights conducted by the pilot in the Cessna were without an instructor. He was not aware of the Cessna being operated without the pilot onboard, but said an instructor may have flown the airplane solo to pick the pilot up on a couple of occasions.

The Cessna was sold back to the witness, and the pilot acquired the Piper on or about May 21, 1999. After acquiring the Piper, the pilot requested to have it moved out of the hangar about 5 to 10 times to fly it. The witness is not aware of the pilot conducting any flights prior to the accident without an instructor in the Piper.

[redacted]
DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

RECORD OF CONVERSATION

Name of Person Contacted: Christopher Benway

Date: July 22, 1999

Time: 1400

Place: Buzzards Bay, Massachusetts

Mr. Benway identified himself as one of Mr. Kennedy's flight instructors, at Flight Safety International (FSI), Vero Beach, Florida. He instructed Mr. Kennedy in a Private Pilot curriculum, a Instrument Pilot curriculum, and flew additional hours recreationally.

Mr. Benway stated the following:

Mr. Kennedy began flight lessons, to be conducted under 14 CFR Part 61, at FSI about December 27, 1997. Mr. Kennedy arrived at FSI with about 46 previous flight hours, including solo flight time. Mr. Benway gave Mr. Kennedy one on one flight instruction. During the instruction, Mr. Kennedy took very detailed notes, and asked very good questions, but did not have very much time to study on his own. Mr. Kennedy had very good flying skills for a 46 hour pilot, when he arrived at FSI, but his radio work was very poor. One night flight, from Orlando, Florida, to Okeechobee, Florida, conditions were VFR, however there was no moon out, and no visual references to the ground. Mr. Kennedy was at the controls for the flight, but needed some assistance with navigation, and radio work. To Mr. Benway's knowledge, this flight was Mr. Kennedy's first exposure to total blackness, and flight with only reference to instruments. On another occasion, in March,1998, Mr. Benway and Mr. Kennedy flew from Vero Beach to Opa Locka, Florida, IFR. Mr. Kennedy was the pilot at the controls while Mr. Benway instructed. Mr. Kennedy's piloting was normal for his stage of training.

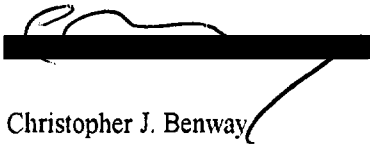
Mr. Kennedy began Instrument flight lessons on April 5, 1999, conducted under 14 CFR Part 61. His progress was normal, and grasped all of the basic skills needed to complete the lesson plans. Mr. Benway remarked that Mr. Kennedy had no hesitation repeating a lesson if he had trouble, and would repeat the lesson until he and the flight instructor were satisfied with the results. Mr. Benway recalled one lesson plan, when asked, where there were some problems completing the required objectives. The lesson plan in question was number 11, with the objective of developing the students knowledge of VOR and NDB operations while working with ATC. A review of records with Mr. Benway, which included the instrument pilot lesson plans conducted on April 17, 18, 23 and 24, 1999, revealed that lesson plan number 11 took 7 attempts to complete. Mr. Kennedy had some difficulty with the first three attempts at the lesson plan, but the fourth lesson was satisfactory. The fifth lesson, conducted in an Piper PA-44 airplane, was used as an introductory flight in multi-engine airplanes, and was satisfactory. Mr. Kennedy's aircraft control during the multi-engine flight was above normal, and landed the airplane with minimum assistance. The radio's and navigation work was shared and uneventful. Mr. Kennedy then left FSI until the following week. When Mr. Kennedy returned to FSI, he was asked that lesson plan 11 be conducted again, because Mr. Benway felt that he needed a refresher, and FSI policy was not to let a student continue beyond the completion standards for a particular lesson, until they are satisfied. The two additional lessons were conducted, and were unremarkable. Mr. Kennedy left FSI after completing lesson 11, and Mr. Benway commented that Mr. Kennedy's basic attitude instrument flying skills, and simulator work was excellent. However, when given multiple tasks while flying, there was trouble managing those tasks, which Mr. Benway stated was normal for that stage of training.

Mr. Kennedy was planning to return to FSI at a later date to complete the curriculum.

In addition to the flight instruction at FSI, Mr. Benway and Mr. Kennedy flew in Mr. Kennedy's Cessna 182 airplane on numerous occasions. Mr. Benway gave Mr. Kennedy the high performance endorsement for the Cessna 182.

A review of Mr. Benway's pilot log book revealed that he had instructed Mr. Kennedy in actual instrument conditions a total of 1.1 hours, simulated instrument flight time was 4.2 hours, and night flight time was 5.5 hours.

This record of conversation was reviewed by me, and is true and correct to the best of my knowledge,



Christopher J. Benway

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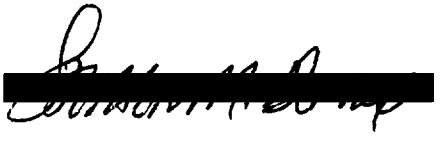

Stephen M. Demko
ASI

National Transportation Safety Board

Memorandum for Record

NAME: Rosemary Terenzio (Witness) DATE: December 17, 2000 TIME: 1600 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

The witness was employed as the pilot's assistant, and managed his daily calendar. She was contacted in July by a Safety Board Investigator for the purpose of obtaining the pilot's schedule for the day of the accident. No information was provided to the Investigator until this telephone interview was conducted.

The witness stated that on the day of the accident she does not recall the pilot delaying his planned departure time because of either his wife or his sister-in-law. She also does not remember the pilot expressing any concerns about conducting the flight.

DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

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Writer's Direct Dial No.
[redacted]

August 23, 1999

Mr. David S. Muzio
National Transportation Safety Board
Northeast Regional Office
2001 Route 46, Suite 504
Parsippany, New Jersey 07054

Re: **NTSB v. General Aviation Aircraft Service**

Dear Mr. Muzio:

I am enclosing herewith pursuant to your request, the log book entries for the JFK aircraft when flown by Mr. Merena either with or without Mr. Kennedy. The following is a brief summary of the aforesaid flights:

10/15/98	Flt. with JFK Jr. from Caldwell to Marthas Vineyard. Bob returned by himself to Caldwell.
11/6/98	Flt. with JFK Jr. from Caldwell to Marthas Vineyard. Bob returned by himself to Caldwell.
11/8/98	Flt. from Caldwell to Marthas Vineyard by himself to pick up JFK Jr. Returned with JFK Jr. to Caldwell.
11/9/98	Flt. from Caldwell to Allegeny Co. with JFK JR. and returned with JFK Jr. to Caldwell.
7/1/99	Flt. with JFK JR. from Caldwell to Marthas Vineyard. Bob returned by himself to Caldwell.

If you have any questions, please do not hesitate to give me a call at your convenience.

Very truly yours,

[redacted]

Peter B. Van Deventer, Jr.

PBV/dmm

National Transportation Safety Board

Memorandum for Record

NAME: Jay Biederrman (CFI) DATE: July 27,1999 TIME: 1230 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

According to the instructor, he started flying with the pilot during the month of May in 1998, and had given the pilot a complex airplane signoff in the pilot's Saratoga II. In addition, the instructor had accumulated approximately 25 hours of flight time with the pilot in the accident airplane.

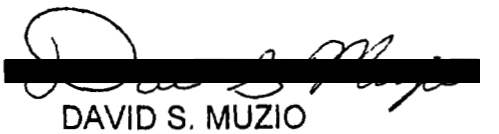
The instructor made 6 or 7 flights with the pilot in the accident airplane to Martha's Vineyard. The majority of flights were conducted at night, and during the flights, the pilot had no trouble flying the airplane.

During the month of May, 1999, the instructor flew with the pilot on a cross country flight. The flight was conducted primarily in IMC, and the autopilot may have been used, but the pilot did most of the flying, and the instructor felt the flight went well. The instructor continued by saying that the pilot had the capability to conduct a night flight to Martha's Vineyard as long as he had a visible horizon.

The instructor added that the pilot always wanted to learn more about aviation, and was committed to improving as a pilot. A couple of weeks before the accident, the instructor flew with the pilot to Toronto, Canada. During the flight, the instructor witnessed the pilot studying the manual for the airplane's GPS. In addition, the instructor had worked with the pilot on the use of the airplane's autopilot, and felt he was competent.

According to the instructor, on one or two occasions the airplane's autopilot turned to a heading other than what was selected. Requiring the autopilot to be disengaged and then re-engaged. He described the event as if the autopilot had independently changed from one navigation mode to another, and did not feel the event was significant because it only happened once or twice.

The instructor concluded by saying that the pilot was methodical about his flight planning, and would compute a weight and balance when ever needed. He also considered the pilot to be very cautious regarding his aviation decision making.



DAVID S. MUZIO

CONTACT INFORMATION:

National Transportation Safety Board

Memorandum for Record

NAME: Robert Merena (CFI) DATE: July 21, 1999 TIME: 1300 EDT

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

The instructor stated that the accident pilot was not ready for an instrument evaluation as of July 1, 1999. According to him, the pilot would need additional training, and instruction before passing the evaluation.

The instructor has no knowledge of the pilot ever suffering from a visual, or vestibular illusion, nor had he seen the pilot inadvertently place the airplane into any unusual attitudes. He continued by saying the pilot had the ability to fly the airplane without a visible horizon, but may have difficulty performing additional tasks.

The instructor flew with the pilot to Martha's Vineyard on July, 1, 1999. The flight took place at night, and IMC prevailed at the destination. The pilot executed a straight-in approach via radar vectors to runway 24. During the flight, the pilot used, and seemed "competent" with the autopilot. The instructor added that during the flight, the pilot was wearing a non-plaster cast on his leg which required the instructor to taxi the airplane, and assist with the landing.

The pilot used instructors on cross country flights for instruction, and as a safety pilots. The only exception was on IMC flights. Then, the instructor was used primarily for instruction.

The instructor was not aware of the pilot conducting any flights in the accident airplane without an instructor onboard. In addition, the instructor stated he would not feel comfortable with the accident pilot conducting night VFR on a similar route, and in similar weather conditions as during the accident. Regarding the pilot's aviation decision-making, the instructor categorized him as "non aggressive."

According to the instructor, the pilot chose Florida for his flight training, to avoid the distractions of work and personal matters in the local area.

[redacted]

DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

Interview:	Jacqueline Gauger-Carlon, Marketing Manager, FSI
Represented by:	Declined
Present:	P. D. Weston, NTSB
Time:	July 23, 1999 13:00
Location:	Flight Safety International, in Vero Beach, Florida

During the interview Ms. Gauger-Carlon provided the following information:

Ms. Gauger-Carlon said that Mr. Kennedy did not take his instrument written examination at FSI. She thought he might have gone to American Flyers in Islip, Long Island, New York, for the ground school and the written.

Her association with Mr. Kennedy consisted of handling all the administrative details of his training and assisting in protecting his privacy while at FSI. They decided to arrange a code name for Mr. Kennedy, it was John F. Kane. This name would appear in all the publicly posted flight schedules and was an attempt to facilitate of Mr. Kennedy's privacy when at FSI.

She said Mr. Kennedy arrived on December 27th and needed a flight physical. He attempted to get a first class medical certificate but because of his age he would require an EKG. As a result he got a second class physical instead. He started his private pilot training and flew for three days but discontinued training because of a death in the family.

He returned in March of 1998 and stayed until he completed the private pilot training and the check ride. Mr. Kennedy found a Cessna 182 for sale in Stewart, Florida, and Chris Benway arranged the purchase. FSI did a inspection on the airplane for Mr. Kennedy prior to the purchase.

He next returned to FSI in April of 1999, when he started his instrument training. During his instrument training FSI decided to dedicate one airplane to Mr. Kennedy, N92429, in an attempt to guard his privacy. The airplane would not have appeared on any flight schedule as being assigned to Mr. Kennedy or to Mr. John F. Kane.
□ Unless otherwise noted all times are expressed in terms of the 24 hour clock, Eastern Daylight Time.
See interview with Jacqueline Gauger-Carlon for explanation.

National Transportation Safety Board

Memorandum for Record

NAME: Eric Liliebladh (Witness) DATE: July 21, 1999 TIME: 1240 EDT

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

According to the witness, he was only aware of two occasions were the accident pilot used his personal Cessna 182 for instruction at their Teterboro based facility. In addition, the pilot passed his written instrument examine, which was administered by the witness.

The witness stated that the accident pilot responded yes, when asked if he had acquired an instrument rating while attending a 14 CFR Part 141 course in Florida.

[redacted]
DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

National Transportation Safety Board

Memorandum for Record

NAME: Peter Van Deventei (Attorney) DATE: July 23, 1999
TIME: 1300 EDT

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

He reviewed the memorandums for both Eric Liliebladh and Robert Merena, and concurred that the statements matched what was said during the interviews.

[redacted]
DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

RECORD OF TELEPHONE CONVERSATION

Name of Person Contacted: Jack Prior

Date: July 20, 1999

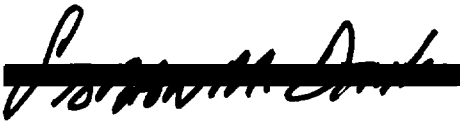
Time: 1450

Place: Buffalo, New York

Mr. Prior identified himself as a Fixed Base Operator (FBO), located at the Buffalo International Airport, Buffalo, New York.

Mr. Prior stated that Mr. Kennedy had landed at the Buffalo International Airport on July 12, 1999, at approximately 1940, after a trip to Buttonville Airport, located near Toronto, Canada. The airplane was taxied to the U.S. Customs office, and parked to clear customs. Mr. Prior watched two people emerge from the airplane and enter the customs office. There seemed to be some trouble at the office, as if there was problem with paperwork. Once everything was resolved, Mr. Kennedy and his passenger entered Mr. Priors FBO, and ordered fuel. Mr. Kennedy then borrowed the FBO courtesy car, and headed into town. When Mr. Kennedy returned to the FBO, he paid for 14 gallons of 100 low lead aviation gas, and a carbon monoxide detector. The two pilots entered the airplane and departed. Mr. Prior additionally stated that Mr. Kennedy was on crutches while he maneuvered around the ramp and facility.

This record was record of conversation was conducted and prepared by,



Stephen M. Demko
ASI

RECORD OF TELEPHONE CONVERSATION

Name of Person Contacted: Ted Stanley

Date: July 19, 1999

Time: 1200

Place: Martha's Vineyard, Massachusetts

Mr. Stanley identified himself as a charter pilot and fixed base operator, located at the Vineyard Haven Airport, Martha's Vineyard, Massachusetts.

Mr. Stanley stated that he had flown Mr. Kennedy and other Kennedy family members numerous times as passengers, but never administered any dual flight instruction to Mr. Kennedy. Mr. Stanley additionally stated he had been approached by the previous owner of the accident airplane to have him look at a potentially bad magneto, but did not take any further action.

Mr. Stanley did fly in the area of the accident, and commented that the conditions were hazy up to approximately 5,000 feet above the ground.

This record was record of conversation was conducted and prepared by,

Stephen M. Demko
ASI

[redacted]

Sent: Tuesday, July 27, 1999 11:07 AM

[redacted]

Subject: Report

David.

Hi, Sorry its taken me so long to send this report out to you. I had some computer problems.

On Friday, July 9, my student and I were practicing landings at Caldwell airport. We landed around 7:10pm and taxied to the parking spot, which is at the south end of the field near Air Bound Aviation. We locked up and tied the airplane down and walked towards the gate. At this point I saw John Kennedy's red Saratoga parked in front of Airbound Aviation, and Lauren Bassette was near the plane. She was carrying a black bag. We walked by her towards the gate and saw John Kennedy at the gate on crutches talking on the phone. As we got closer he hung up the phone and started to walk away from the gate towards the airplane. As he walked by us I said "Hi" he replied back. I said goodbye to my student and got in my car. I saw Lauren Bassette walk out to the parking lot and walked up to a white convertable, which was parked next to me on the right. She picked up a walking cane and walked back to the airplane. I backed up and drove away.

Hope this information helps you out. I f you have any questions I will be more than happy to answer them.

Shoeb Panjwani

Muzio David
From: [redacted]
Sent: Monday, October 04, 1999 6:09 PM
To: [redacted]
Subject: report

Hi David,
Yes it was july 16..I got a little confused with the dates.
Shoeb Panjwani

=====

Complaint Form
FD-71 (Rev. 4-13-92)

NOTE: Hand print names legibly; handwriting satisfactory for remainder.
Indices: ☐ Negative ☐ See below

Subject's name and aliases: Missing JFK Jr. Flight	Character of case: 1
	Complainant ☐ Protect Source: Robert Thornton
	Complaint received: ☐ Personal ☒ Telephonic Date 7/17/99 Time 11:30 P
Address of Subject	Complainant's address and telephone number: [redacted]
	Complainant's DOB / SSAN / Race / Sex: M

Subject's Description

Race	Sex ☒ Male ☐ Female	Height	Hair	Build	Birth Date and Birthplace
Age		Weight	Eyes	Complexion	Social Security Number
Scars, marks and other data					

Facts of complaint

On 7/17/99, Robert Thornton (RT), [redacted] called and stated the following:

RT stated that he thought he might have some information regarding the John F. Kennedy Jr. airplane crash.

RT said that he and his family were at the Fairfield Airport, off rte. 46, last evening (7/16). RT said that he and his wife observed a red and white airplane at the airport. RT said that the airplane was revving it's engine. RT said that a white car was sitting beside the airplane (on the right side of the airplane) and it's car alarm was set off by the revving of the engine. RT stated that a blond woman exited the airplane and came over to the car and appeared to reset the alarm. The blond woman then proceeded to go around to the left side of the aircraft and get in behind the pilot. RT stated that the plane then proceeded to depart, apparently for takeoff. RT stated that he and his wife noticed that the right side door of the airplane was not completely shut. RT described it as being ajar.

RT stated, when asked, that the blond haired woman was wearing black "peddle pusher" pants (RT asked his wife, Karen, in the background for clarification on the type of pants). RT could not recall any other

Do not write in this space.

SA Damon A. Villella
(Complaint received by)

BLOCK STAMP

descriptive details of the woman. RT stated, when asked, that he and his wife recalled that the plane was white and red and that it seemed to be about half and half with each color. RT stated, when asked, that the plane was a single engine plane. RT stated that the plane had only one engine on the nose of the plane. RT also recalled, when asked, that the white car was a convertible. RT stated that neither he nor his wife could recall any numbers off of either the car or the plane. RT also stated, when asked, that he and his wife recalled that they observed this occur around 8:45 PM EDT.

Duty Agent informed the complainant that he would write up his phone call/information and have it evaluated in relation to the search and rescue missiom that was underway.

The Duty Agent called RT back and verified the telephone number.

National Transportation Safety Board

Memorandum for Record

NAME: Pat Cutler (Witness) DATE: July 26, 1999 TIME: 1310 EDT

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

The witness, located approximately 9 miles to the northeast of the accident site, reported hearing a loud noise between 2145 and 2155. The sound was similar to a thud. She added that prior to hearing the noise, her environment was quit. The noise was loud enough that she went outside attempting to determine its source.

[redacted]
DAVID S. MUZIO

Muzio David

From: [redacted]
Sent: Monday, January 24, 2000 3:16 AM
To: [redacted]
Subject: John York Narrative

Importance: High

Dave,

Here is the information you requested, sorry about the delay.

Name: John Patrick York

Experience:	F-15 Demo Pilot/Instructor Pilot	1200 Hours
	T-38 Instructor Pilot	1100 Hours
	Combat Hours	Over 100 Hours
	Glider CFI, Single Engine and Multi CFI	
	ATP/FE	
	First Class Medical	
	Currently Major Carrier Airline Pilot	
	USAF Safety Officer 58th Fighter Squadron	
Total Time:	Approx 3200 Hours	

This is the narrative that you (The NTSB) requested I write about my flying experience with John Kennedy and my exposure to him and his flying:

I flew with John Kennedy in Jan 1999 from Ketchum Idaho to Los Angeles in his C-182. He did an excellent job in all phases of the cross country flight. John was, from my observations, very well trained, he possessed good checklist discipline and had excellent situational awareness. I had many in depth discussions with him on flying and his flight training. He had excellent general knowledge of aviation and flying.

John was a very motivated, hard working professional student pilot and private pilot. I spent time with John on multiple visits with him while he was in training at Flight Safety in Vero Beach. I also flew with him while he was at Vero in a flight safety aircraft.

End of statement-

[redacted]

MILLION AIR®

FLIGHT TRAINING CENTER

July 21, 1999

Mr. David S. Muzio
National Transportation Safety Board
Northeast Regional Office
2001 Route 46, Suite 504
Parsippany, NJ 07054

Mr. Muzio,

I, Eric Liliebladh, presently work for General Aviation Aircraft Service, d/b/a Million Air, as the flight training manager. I have been employed by this company since February 14, 1994 and have worked for the flight school specifically, since May 1997. My responsibilities at the flight school are to oversee the daily operations of the business.

I have met Mr. John Kennedy, Jr. on approximately six occasions at the flight school. I have also spoken to him and/or his representatives at Random Ventures several times on the phone regarding his scheduling of flight training. The only other time I had personal contact with Mr. Kennedy is when I proctored his instrument rating written exam at the flight school on March 12, 1999.

Mr. Kennedy did not "check out" to rent aircraft from us on his own and therefore we do not know his total flight time or his abilities as a pilot. Based on our records, there are 87 dual hours billed to Mr. Kennedy that we can account for and are outlined as follows:

44.7 flown with Bob Merena
36.4 flown with Jay Biederman
5.9 flown with Josh Kallenberg

The school has no records of flight destinations for Mr. Kennedy, although we know he frequented Cape Cod and Martha's Vineyard with the above flight instructors.

Pursuant to your final questions, we have no record of Mr. Kennedy's hours in a Saratoga, any unsafe or unlawful incidents in which he was involved, or if anyone else has accumulated hours in Mr. Kennedy's aircraft.

Sincerely,

Eric Liliebladh
[redacted]

FORM APPROVED—OMB No. 004-R-5713

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

STATEMENT OF WITNESS

The purpose of this statement is intended solely for use in determining the facts, conditions and circumstances, and the probable cause of the subject accident.

Date July 19th, 1999

1. Place of accident _____ Date _____ Hour _____
2. Type of vehicle _____
3. Identification of vehicle _____
4. What is your name Kyle L. Bailey Age 25
5. Address [redacted]
6. Occupation Analyst By whom employed The Great Atlantic & Pacific Tea Co, Inc
7. Where were you at the time of the accident COW Airport
8. Tell in your own words what you saw or heard before and at the time the accident occurred.

I arrived at airport at approximately 7:45 PM on Friday Night

8:00 PM Mr. Kennedy arrived in a white/grey convertible that he drove at the airport.

8:15 PM Tall Thin Blond with long hair arrives at airport

8:15 - 8:25 Mr. Kennedy & Tall Thin Blond with long hair are conversing with each other in a casual manner.

8:30 Engine "Run Up Check" was performed in Mr. Kennedys Saratoga at his parking location.

8:40 Mr. Kennedy's Saratoga Departs Runway 22 at COW. Airplane makes a right downwind departure towards a northeast heading. Take off and right downwind departure seem normal.

From my own judgement visibility appeared to be approximately 4 Miles - Extremely hazy. Winds were fairly light.

Based only on the current weather conditions at COW, the fact that I could not get my friends to come with me, and the fact that I would not have to spend money on a hotel room in Martha's Vineyard. I made the decison to fly my airplane to Marthas Vineyard on Saturdy. I cancelled my trip on Saturday based upon all the media activity at both airports on Saturday

[redacted] (Signature)

NTSB FORM 6120.11 (Rev. 10/77) (Use reverse side of sheet for diagram and additional statement)

Note: Based on current visibility, [redacted] fading daylight, haze and humidity at COW, I would feel the VFR operations would be unsafe strictly based on COW weather conditions.

Flywright Aviation
Martha's Vineyard Airport
P.O. Box 2 Vineyard Haven, MA 02568

Witness interview with Arthur Marx

On Monday July 19, 1999 I spoke with Mr. Arthur Marx, the Owner/ Operator of Flywright Aviation. Mr. Marx is a certificated flight instructor and had given Mr. John F. Kennedy Jr. flight instruction.

Mr. Marx states: I gave Mr. Kennedy flight instruction over a period of almost ten years. He (Kennedy) would come into my office when he was on the Vineyard and take dual instruction for an hour or two and then he would get busy again and I would not see him again for several months then he would stop in again and take more dual from me. The records that I have now are in my personal logbook (copies attached). When he arrived here on May 23, 1998 he requested I give him dual instruction and a check out in a PA28-161 for possible rental purposes in the future. I flew with him in N2149F, my warrior. I flew with him for a total of 2.6 hours starting on May 23, 1998 and ending on May 30, 1998.

He was a very good pilot as I recall and already had a Private Pilot Certificate that he had obtained in Florida.

No further records are available and no further information is available at this time

Interview concluded on July 19, 1999 at 5:10 p.m..

[redacted]
William M. Stevens
ASI/OPS
NE-FSDO-01

Muzio David
From: [redacted]
Sent: Thursday, August 05, 1999 9:47 AM
To: [redacted]
Subject: Kennedy accident

NTSB
THE NATIONAL TRANSPORTATION SAFETY BOARD
STATEMENT
RE: JFK JR

Dear David,

Thanks for you call. As per your request, here's a rough draft on flight conditions for the Route from Teterboro (TEB) to Nantucket (ACK) on the evening of Friday July 16, 1999. I wanted to get this to you quickly should it be helpful now. All times and positions are approximate. If you need greater precision or greater detail please E mail or call. I'd be glad to help in any way I can. This is a candid account that has not been reviewed by a lawyer.

To summarize briefly: FSS briefed good visibility and "no adverse conditions" for the route. Once night fell, the actual flight conditions were poor over water with no visible horizon and no visible light of any kind on the approach out to Martha's Vineyard and past its southern coastline. FSS weather briefing specialists blame less than optimal automated measurement of haze. The weather that night obstructed a pilots ability to fly the plane without reference to instruments or an autopilot.

Pre flight: On the afternoon of July 16, I was "crashing" a piece for Dateline NBC on a doctor who was treating herself for breast cancer in Antarctica. "Crashing" is a broadcast term for a news piece that is shot and edited at the last minute based on a breaking news story. I normally try to leave earlier on Friday's to avoid delays at Teterboro and the chance of fog on ACK. The piece was approved by senior producers and I was "released" between 6:15 and 6:30 PM. A car service took myself and two passengers to Teterboro (TEB)airport from 30 Rockefeller Center, the NBC Studios. I had called the FBO at TEB and gave them an ETA of 6:50 PM. Traffic however, was the second heaviest I had seen in over fifteen years of driving to Teterboro. After crossing over the George Washington Bridge, I arrived at Teterboro after 7:30 and as late as 8:00 PM.(approx) Lincoln tunnel traffic was just as heavy according to 1010 WINS radio and the driver. This delay changed what would have been a flight conducted entirely during the day to one conducted partially at night. JFK Jr had called my brother in law earlier in the day to say that he could not make dinner on Nantucket with him because he had to wait to pick up his sister in law who had to work late. Our car took route 80 to Teterboro airport. Caldwell airport, where JFK Jr flew from is another 14 minute drive West on route 80 past TEB. His passengers may have encountered similar lengthy delays on their trip from Manhattan and also found themselves facing an unplanned night flight. With better traffic, I could have departed TEB at least an hour earlier. The same may have been true for JFK Jr.

At Teterboro, engine start delays can range up to an hour during the afternoon and sometime into the evening. Delays were less than that on July 16, but I don't recall how long the delay may have been. I'd approximate departing between 7:45 and 8:30 PM. I try to depart VFR to avoid substantial

IFR delays out of TEB. If the weather is IFR at Nantucket (ACK) or forecasted to be, I'll have an IFR flight plan on file at Block Island or East Hamptom to be picked up in the air with center. Since IFR delays into Nantucket are substantial, and the chance of an airfile with center is slim, I always file an IFR plan if there is even the slightest chance the at ACK weather could go IFR. Here's why. Over the years I've found that if ACK is IFR, Cape Approach may otherwise direct you to land at another airport such as New Bedford to file a flight plan on the ground and then await clearance for departure. Since this can take hours, and the weather may go below IFR minimums during the wait, most experienced pilots flying into ACK will have an IFR flight plan on file if there is any risk of IFR weather. After substantial reassurance from FSS, I did not file an IFR flight plan. Like many pilots, I don't pick up flight following out of the New York TCA because, during peak hours, the hand off is rarely accepted.

Flight conditions: I departed from TEB in daylight with good flight conditions and reasonable visibility. The horizon was not obscured by haze. I could easily pick out land marks at least five away including the GW bridge from TEB and maneuver without reference to flight instruments. The flight was conducted with my nephew who wants to be an F-16 fighter pilot when he grows up in the right co pilot' seat, so I specifically pointed out landmarks along the way, that I otherwise might have ignored or failed to recall. I ascended after clearing the eastern limit of the LGA Class Bravo 20 miles from the LGA VOR. I remarked to my nephew, who was in the right co pilots seat, that the top of the haze layer was 14000 feet. Visibility above 14000 feet was unrestricted. There were no clouds and no cumulonimbus that I recall. I observed the sun set to the horizon which was sharp and well defined. It appeared to be as close as a perfect evening to fly as I'd seen in months. I flew at 17500 for the enroute portion of the flight. Traffic arriving into JFK, observed visually and on Ryan TCAD, pushed my route further north than expected, closer to the Connecticut shoreline than usual and so closer to Martha's Vineyard. On the descent into Nantucket, I pointed out the window to the left and said, "there's Martha's Vineyard," based on my moving map display, GPS reading from MVY and position on a chart. However when my nephew and I looked, there was nothing to be seen. There was no horizon and no light. The night could best be described as inky black. My position was between 2.7 and 5.0 miles south of the Martha's Vineyard Island coastline. As a rule, I try to get a look at the Vineyard during descent to see if there is a fog bank or any indication of reduced visibility. I turned left toward the Martha's Vineyard to see if it was visible but could see no lights of any kind nor any evidence of the Island. There was also none of the characteristic halo effect around towns engulfed by fog. I thought the island might suffered a power failure. My strobes had been on for the duration of the flight and my wing lights (forward pointing lights similar to landing lights) had been on for the entire descent. At no time did they illuminate cloud or fog. In fact, it appeared as if they were not on at all because of the way the light was being absorbed by the air around me. At the time I was perplexed. I had no visual reference of any kind yet was free of any clouds or fog. At the time, I simply could not explain why the visibility appeared so poor in what were supposed to be good VFR conditions. To be sure I wasn't going to encounter IFR conditions, I listened again to the ACK ATIS. Visibility was well above VFR minimums. ACK is nearly always worse than MVY and was forecasted to have less visibility that evening than MVY I listened intently to the ACK Tower frequency. I could still hear multiple inbound aircraft making VFR approaches. I called the tower approximately 20 miles out from the field for a VFR approach and was granted one. I remained puzzled at

how ACK could be VFR when visibility over the water appeared to be so poor.

I had been turning left toward the northern coast of ACK called Coatue for a right downwind for 24. Due to heavy traffic, the ACK tower instructed me to fly south of Nantucket to join the left downwind for 24, so I changed course and flew the length of the island from Madaket to Sconset at a distance 3-4 miles off shore. Tower had requested five miles, but I couldn't see the island at that distance. I could see pinpoints of light but I could not distinguish runway lights when flying past the field at a distance of four miles. I flew east to Sconset where I was asked to turn north and follow another aircraft west to the runway. On identifying that aircraft visually, I informed the controller that it was too slow for me to follow. Either the controller or I suggested a turn for spacing. Since I had already headed toward the airport, I need to make a 310 degree right hand turn. I found that I could not hold altitude by outside reference and had to use by VSI and HSI to hold altitude and properly coordinate the turn. To be specific, my VSI was plus and minus 500 feet when flying the plane by outside reference alone. As I rejoined the approach, the plane in front of me was visible as was the runway from a distance of 4 miles. The most peculiar part of the approach, however, was that the lights on the ground provided no illumination. It looked as if there had been an electrical power failure and candles were burning in place of streetlights. It was best described as what flying over ACK during the gaslight era might have been with just tiny pinpoints of light. The haze appeared to suck any illumination away from around light sources except the pinpoint from the light itself. I can't recall a haze as strange as this in all the years I've flow into Nantucket. With dense fog, at least there is some illumination of the fog around the aircraft. On final approach, in fog, the approach lights too illuminate the fog. I remarked to myself that a VFR pilot would be having a hard time during an approach at the time of the approach on the 16th. However there were no complaints on the frequency from as many as a ten other planes, all of which appeared to be approaching the field from the North or Northwest rather than the South. I was frankly surprised that no pilots were complaining about flight visibility. Once I arrived at our rented home on the South shore of the island, where there is no obstructing light, I looked out to the horizon. There was none. I could see stars but only by looking up at least 45 degrees from the horizon.

Weather Briefings: In the late afternoon of July 16, I logged onto WWW.Weathertap.com and looked at the present and forecasted weather for Nantucket and other reporting points in Massacusetts, Connecticut, NY and NJ. Visibility was well above VFR minimums. I also looked at live satelite and radar pictures. I called flight service from work in NYC. I also placed a final pre flight call to flight service during the ride to TEB on a cell phone, while on Route 80 local. I asked if there were any adverse conditions for the route TEB to ACK. I was told emphatically: "No adverse conditions. Have a great weekend." I queried the briefer about any expected fog and was told none was expected and that conditions would remain VFR with good visibility. Again, I was reassured that tonight was not a problem. Briefers are usually quite cautious and I was surprised, given the heat and humidity and strong Southwest flow, that fog or substantially reduced visibilities were not expected.

After landing and over the next 19 hours I made several calls to FSS and spoke with briefers who worked the evening of the 16th.
-One briefer told me that after 9 PM Friday evening, he had "warned" VFR

pilots flying into the cape and islands in general and Martha's Vineyard in particular, that although visibility was being reported as great as 8-10, the true visibility was closer to 3-4. I asked why. He said that current automated measurements for flight visibility were particularly poor for haze, often grossly underestimating how much haze restricted visibility. He said that manual observations were more accurate. He also noted that the temperature dew point spread was one.
-Another briefer told me that more seasoned briefers looked at manual reports versus instrumented measurements and made a judgement call, telling pilots that they would likely encounter visibility less than expected. He faulted the transmissometers used to measure visiblity saying that they "cut through" haze without adequately reflecting true visibilities a pilot might encounter.
-A third briefer told me that after this "high profile case" haze would have to be addressed much more seriously within the FAA and that there would be the equivalent of a real shakeup. He said it was widely known by experienced briefers that reported and forecasted visibility in haze were often far greater than the actual conditions reported.
-A fourth briefer said that only Groton, Quanset and New Haven have manual readings for visibility and haze and that all others in Southern New England were automated. I ask her about the measurement of haze and she said, "it has its limitations, but declined to go into specifics, saying "I have my opinion." Another briefer said that even those these were automated, towers would sometimes supplement these with manual readings. He said when they did, the readings could differ by miles.
These briefers declined to identify themselves when asked.

Route experience: I've flown to Nantucket every summer since 1978, making on average ten round trips per summer, usually from mid June to mid August. Since 1982, the point of origin was either LGA or TEB airports. I've flown well over 50 ILS and a half dozen backcourse approaches into ACK and several ILS into MVY. Most of these are down to the 200 foot minimum ceiling. The route I fly VFR is Northeast out of Teterboro at 1000 feet to the north of LGA, clear of Class Bravo as observed on a Moving map display and VOR (113.0). After clearing the last ring of class Bravo at 20 miles from LGA, I climb GPS direct over Long Island Sound, past Martha's Vineyard to Nantucket either overflying the restricted area or skirting to the north of it.

Aircraft flown on July 16, 1999: Twin engine turboprop, PAY2/G (Cheyenne II) Equipped with GPS, Argus moving map, storm scope, color radar, Ryan TCAD.

Pilot experience:
Beech Bonanaza: 2400 hours
Beech Baron 58 TC: 1300 hours
Cheyenne II: 400 hours
Assorted aircraft as PIC, copilot or training: 500-1000 hours:
Pitts, Bellanca, Rockewell Commander 112A, Commander 690, Piper Arrow, Cessna Caravan, Conquest I and II, Cessna 150, Cessna 172, Cessna 182, King Air 200, Citation ISP, Boeing 707, C-130, F-16.

Pilot Ratings: Private pilot, multi engine, instrument.
Recurrent Training: Flight Safety, Lakeland Florida. Annual recurrent in Cheyenne II. Instrument rating since 1978.
Fly 200 hours per year.

[redacted]

National Transportation Safety Board

Memorandum for Record

NAME: Robert Merena (CFI) DATE: July 23, 1999 TIME: 1520 EDT

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

According to the instructor, he did not give the pilot a complex aircraft signoff, and he is not aware of anyone else giving him one.

[redacted]
DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

National Transportation Safety Board

Memorandum for Record

NAME: Jay Biederrman (CFI) DATE: February 3, 2000 TIME: 1830 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

The Instructor stated that he flew the pilot and the accident airplane back from Martha's Vineyard on June 1, 1999, after the pilot broke his ankle. He does not know how the airplane got to Martha's Vineyard, but does not think the pilot flew it out solo. In addition, he is not aware of the pilot ever operating the accident airplane without an instructor on board. Also, the instructor gave the pilot a complex airplane sign off, but does not remember the exact date. He does remember that it was before the pilot injured himself.

[redacted]
DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

National Transportation Safety Board

Memorandum for Record

NAME: Brian Calcagne (Witness) DATE: November 24, 1999 TIME: 1140 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

According to the witness, the pilot's Cessna 182 had 128.0 hours of total airframe time on October 20, 1998, when it was weighed and a weight and balance was recalculated. In addition, the witness stated that the airplane had approximately 220.0 hour of total airframe time when he bought it form the pilot in June of 1999.

The witness who also hangared the accident airplane for the pilot stated that the pilot requested to have it moved out of the hangar about 5 to 10 times. In addition, the witness stated that the pilot was not authorized to move the airplane out of the hangar himself. He was required to let hangar personnel perform the task for him. Also, the witness is not aware of the pilot conducting any flights without a flight instructor onboard the accident airplane.

[redacted]

DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

From

1 561 5693287

Faxed OK
7-22-99
11:44 AM
KB

Chris Benway

F A X

To: Peter E. H. Banfield
Company:
Fax number: [redacted]
Business phone:

From: [redacted]
Fax number: [redacted]
Business phone:
Home phone:

Date & Time: 7/22/99 10:00:38 AM
Pages: 1
Re: Ungraded Lesson

The ungraded lesson in the Instrument Training Course to the best of my recolection was due to the fact that Mr. Kennedy left quickley to go to New York and left with it unsigned. It was to be completed when he returned. At the request of Flight Safety on July 20th I graded and signed a faxed copy of the Lesson.

This fax confirmed with CHRIS BENWAY 7/22/99

[redacted]
FLIGHTSAFETY INTL
VRB FL.

3. I thought you might be interested in how much "hood" time John had. This is something that I would not log in my book. John and I did lots of hoodwork on our flights. So, I estimated a certain amount of hood time. This figure, if anything, is an underestimate of how much hood work we did. In addition, John and I did many more approaches than the ones that I had listed.

4. I broke the time into N9253N, N529JK-his 182, N95229-Million Air's 182-S, and N151MA Million Air's 172-R.

Please let me know if I can clear anything up.

Sincerely,

[redacted]

Jay Biederman

Dual N9253N	26.8
Dual N529JK	10.0
Dual N95229	19.0
Dual N151MA	4.0
Total Cross Country Dual	56.9
Total C/C Dual 9253N	26.8
Actual Instrument	8.6
Actual 9253N	5.0
Hood Time(estimate)	15.3
Hood Time 9253N(est.)	5.5
Approaches (logged in actual)	3-LOC, 3-ILS, 1-NDB
Total Night Dual	13.7
Total Night Dual 9253N	5.7

Total Time Dual with John Kennedy 59.8

ABA

Air Bound Aviation, Inc.

Piper

Independently owned authorized sales affiliate of distributor for NY and NJ

July 21, 1999

From: Andrew Ferguson President

To: Daveid S. Muzio- National Transportation Safety Board

A. Pilots/instructors John flow with.

1. Jay Biederman - [redacted]
2. Bob Morena Instructor at Million Air [redacted]
3. Tim O'Neill - [redacted]

B. John Kennedy told me in May that he had 300 hr.

C. John also told me that he had past his written test.

D. John was a client and a close acquaintance. I had flown with him two or the times, the last time was over a year ago. I believe John was a cautious pilot.

Sincerely,

[redacted]

Andrew Ferguson
President

Essex County Airport, 125 Passaic Avenue, Fairfield, NJ 07004
(973) 575-1833 • Fax (973) 575-5994

July 20 1999

Brian Calcagne

Air Bound Aviation
5 Wright Way
Fairifeld N.J. 07004

Recreating the day of Friday July 16 1999 regarding John Kennedy

I had called John approximately 1pm to verify that he was planing to take his aircraft somewhere for the weekend. He said he was. I told him I would have it parked outside the hangar. He thanked me and said he would be out 5:30-6pm.
I left the hangar at 5:30pm on the same day without seeing John or anyone else around. The aircraft was left facing out on the south end of the building.

I knew John Kennedy on a client relationship only and was not a personal friend. I knew nothing of his flight abilities nor did I ever fly with him. I knew his flight instructor Mr. Biederman on a casual basis, just from seeing him with John. I had seen Mr. Biederman with John quite a few times. The specific dates I couldn't list. Mr. Tim O'Neill had flown with John two or three times, the exact dates I don't remember. Mr. Robert Morena also had flown with John, quite a few times, but again those dates I can't confirm.

The above statement is what I can recall about the day of John's departure on July 16 1999.

Brian Calcagne

[redacted]

National Transportation Safety Board

Memorandum for Record

NAME: Jay Biederrman (CFI) DATE: February 8, 2000 TIME: 1815 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

According to the instructor he saw the pilot at East Hampton, New York on May 22, 1999. He talked with the pilot, and the pilot stated he had flown solo from Caldwell, New Jersey. The pilot then flew solo to Teterboro, New Jersey. The flight was conducted at night, and the instructor followed him in another airplane. The instructor estimates the flight took 0.8 hours.

In addition, the instructor stated that he placed a signature in the pilot's logbook, giving him a complex airplane endorsement. He added that the pilot's sister would have more information regarding the pilot and solo flights.

He cannot remember if the pilot flew back with him in the accident airplane on June 1, 1999. He thinks he did, and that he rode in the back

[redacted]
DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

National Transportation Safety Board

Memorandum for Record

NAME: Tim O'Neill (CFI) DATE: February 10, 2000 TIME: 0930 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

The instructor had approximately 12,000 hours of total flight experience, and 4,500 hours as an instructor. He was rated as a certified flight instructor, certified flight instructor - instrument, multi engine instructor, and airline transport pilot. While working for a local flight school, the instructor met the pilot for the first time 11 years before the accident. The encounter was for a day and the instructor helped the pilot prepare for a private pilot oral examination. The second time was in April 1999. The instructor made three flights with the pilot over a 2-month period, totaling about 3 hours and 45 minutes. The last flight was on June 25, 1999. The instructor added that he did not log his personal flight so he had no way of knowing exactly how much flight time he flew with the pilot.

The first flight together was after the pilot purchased the airplane. The flight was a combination of instruction and an evaluation of the airplane. The flight lasted for approximately 45 minutes. The pilot did most of the flying. In addition, they tested the autopilot, global positioning system, radios, and general flight characteristics of the airplane. No deficiencies or anomalies were identified. The instructor added that it was the nicest saratoga he had ever seen.

Their second flight together was day VFR from Caldwell, New Jersey, to Washington, District of Columbia. The pilot flew the majority of the flight, and a standard traffic pattern to a full stop landing was executed. The instructor estimated that the flight was about 1.5 hours in duration. The pilot remained in Washington, and the instructor along with a Mr. Jay Biederman, another flight instructor, flew the airplane back to Caldwell.

Because Mr. Biederman would also be providing the pilot flight instruction, the return flight was used to familiarize him with the airplane. The two instructors did some steep turns, along with some stalls before performing two turns in closed traffic.

Their third flight was on June 25, 1999, from Caldwell to Martha's Vineyard, Massachusetts. The departure, en route, and descent portions of the flight were executed in VMC, but an approach was required into Martha's Vineyard because of a 300 foot ceiling. The instructor requested an IFR clearance, and was cleared for the

ILS 24 approach. The instructor used the opportunity to demonstrate a coupled approach, and the pilot performed the landing. During the landing, the instructor assisted with the rudders, because of the pilot's broken ankle. The instructor estimated the flight lasted approximately 1.5 hours. After dropping off the pilot, the instructor returned the airplane to Caldwell.

When asked to rate the pilot's aeronautical abilities, the instructor replied he was average for his level of experience. He also classified the pilot's ability to handle multiple tasks as average.

DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

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Writer's Direct Dial No. [redacted]

February 25, 2000

Mr. David S. Muzio
National Transportation Safety Board
Northeast Regional Office
2001 Route 46, Suite 504
Parsippany, New Jersey 07054

Re: **NTSB v. General Aviation Aircraft Service**

Dear Mr. Muzio:

At your request, I have spoken with Mr. Merena who has responded to your questions with the following answers.

1. Mr. Merena last spoke with John F. Kennedy, Jr. at between 10:00 A.M. and 11:00 A.M. on the day in question.

2. John F. Kennedy, Jr. never indicated that time that he intended to depart on the day or evening in question.

3. John F. Kennedy, Jr. never expressed to Mr. Merena anything concerning a change in his plans.

I will assume that unless receive further word from you that the aforesaid responses satisfy your most recent inquiry, but please do not hesitate to give me a call if you have any further need for information.

Very truly yours,

[redacted]

Peter B. Van Deventer, Jr.

PBV/dmm

National Transportation Safety Board

Memorandum for Record

NAME: Nicole Seligman (Attorney) DATE: December 17, 2000 TIME: 1600 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

Ms. Nicole Seligman is an attorney for "William & Connolly" located at 725 Twelfth Street, North West, Washington, District of Columbia 20005

I requested contact information for Mr. Richard Blow from Ms. Seligman. She replied that Mr. Blow no longer worked for George Magazine and she would not know how to locate him, but would try.

[redacted]

DAVID S. MUZIO

CONTACT INFORMATION:

[redacted]

National Transportation Safety Board

Memorandum for Record

NAME: Richard Blow (Witness) DATE: March 3, 2000 TIME: 0940 EST

SUBJECT: NYC-99-MA-178
Vineyard Haven, Massachusetts

The witness began his employment at George Magazine in April or May of 1995, as senior editor. It was during this period that he first met the pilot. Then in January 1999, the witness was promoted to executive editor. In both cases, he worked directly for the pilot, but closer after being promoted. The witness left the magazine on good terms on January 3, 2000, to pursue other opportunities. He continues to live in Manhattan at his residence of 5 years.

The witness was aware of only one solo flight conducted by the pilot from November 1998, until the date of the accident. The flight took place in the pilot's Cessna 182 during April 1999, when the pilot accompanied by his wife flew to Washington, DC, to attend a White House Correspondents Dinner. The witness added that the flight to Washington was conducted in late afternoon, and that the pilot encountered reduced visibility en route due to smoke.

When asked if the pilot was under any stress at work, the witness responded that George Magazine's contract with its publisher was schedule to expire the end of 1999, and that renegotiations were in progress. In addition, a new CEO had been appointed over the publishing company the first part of June 1999, and rumors suggested the contract would not be renewed. If the contract was not renewed, the pilot would have to find another source for funding the magazine.

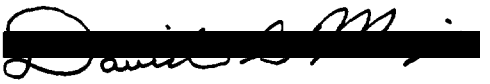
When asked about possible stress in the pilot's personal life, the witness stated that the pilot's cousin was terminally ill with cancer. He added that they were "very close," and that the cousin past away about a month after the accident. He was not aware of any other stress producing influences in the pilot's life.

When asked about the pilot's schedule on the day of the accident, the witness replied that the pilot usually left work between 3:00 PM and 4:00 PM on Fridays during the summer. He continued by saying that the pilot would have never planned to leave the office between 6:00 PM and 7:00 PM. "He was the boss, and liked to get out of the office on Fridays." The witness had lunch with the pilot the day of the accident, and he stated the pilot was in good sprits. During the lunch, the witness expressed concern to the pilot about his injury and flying. The pilot responded he was looking forward to the

flight. The witness felt the pilot was frustrated about injuring his ankle and not being able to fly.

When asked for names of flight instructors the pilot may have flown with in his Saratoga, the witness responded Jay Biederman, and possibly John York.

In closing, the witness said the pilot was a seriously devoted student of flying, and worked hard at developing his flying skills.



DAVID S. MUZIO

	Date	Aircraft Type	Registration	Instructor	From	VIA	To	Day	Night	Actual	Hood	Appch	Sim	Dual	PIC	Total
	10/04/1982	C-152	49479	Ryan	PVD		LCL	1.2						1.2		1.2
	10/13/1982	C-172	737SR	Ryan	PVD		LCL	1.1			0.2			1.1		1.1
	10/15/1982	C-172	4739D	Ryan	PVD		LCL	1.2			0.2			1.2		1.2
	11/12/1982	C-172	737SR	Ryan	PVD		LCL	0.6						0.6		0.6
	11/17/1982	C-172	737SR	Ryan	PVD		LCL	1.1						1.1		1.1
	11/19/1982	C-172	4739D	Ryan	PVD		LCL	1.1						1.1		1.1
	12/10/1982	C-172	4739D	Ryan	PVD		LCL	1.3						1.3		1.3
	12/13/1982	C-172	4739D	Ryan	PVD		LCL	1.4			0.3			1.4		1.4
	02/26/1983	C-172	4739D	Ryan	PVD		LCL	1			0.2			1		1
	03/01/1983	C-172	737SR	Ryan	PVD		LCL	1.1						1.1		1.1
	03/05/1983	C-172	737SR	Ryan	PVD		LCL	1.2						1.2		1.2
	02/19/1988	PA-28-161	8351W	Wilgen	TEB		LCL	1						1		1
	02/21/1988	PA-28-161	81833	Marx	MVY		LCL	1.1			0.1			1.1		1.1
	02/25/1988	PA-28-161	8252Z	Wilgen	TEB		LCL	1.8						1.8		1.8
	03/03/1988	PA-28-161	8252Z	Wilgen	TEB		LCL	1.8			0.3			1.8		1.8
	03/17/1988	PA-28-161	8252Z	Wilgen	TEB		LCL	1.4						1.4		1.4
	03/24/1988	PA-28-161	8252Z	Wilgen	TEB		LCL	1.9						1.9		1.9
	03/31/1988	PA-28-161	8252Z	Wilgen	TEB		LCL	1.7						1.7		1.7
	04/01/1988	PA-28-161	8252Z	Wilgen	TEB		LCL	1.2						1.2		1.2
	04/15/1988	PA-28-161	8351W	Wilgen	TEB		LCL	1.7						1.7		1.7
	04/22/1988	PA-28-161	83918	Wilgen	TEB		LCL	1						1		1
	06/26/1988	PA-28-161	4390D		SMO		LCL	1						1		1
	07/03/1988	PA-28-181	40069	Marx	MVY		LCL	1.2						1.2		1.2
	07/04/1988	PA-28-181	40069	Marx	MVY	EWB	MVY	1.9						1.9		1.9
	07/14/1988	PA-28-161	4390D		SMO		LCL	0.8	0.2					1		1
	07/31/1988	PA-28-181	141AV		SMO		LCL	1.7						1.7		1.7
	08/04/1988	PA-28-161	2601X		SMO		VNY	1.7						1.7		1.7
	08/11/1988	PA-28-161	43248		SMO		LGB		1.2					1.2		1.2
	08/14/1988	PA-28-181	2326V		SMO		CMA	2.5						2	0.5	2.5
	08/15/1988	C-172	53432		GTF		LCL	0.8						0.8		0.8
	08/22/1988	C-172	53432		GTF		LCL	2.2						2.2		2.2
	09/11/1988	PA-28-181	40069	Marx	MVY		LCL	1.1			0.7			1.1		1.1
	09/15/1988	PA-28-161	8351W	Wilgen	TEB		LCL	1.5						1.5		1.5
	09/22/1988	PA-28-161	8252Z	Wilgen	TEB		LCL	1.1						1.1		1.1
	09/29/1988	PA-28-161	8252Z	Wilgen	TEB		LCL	1.6			0.3			1.6		1.6
	12/18/1997	PA-28-161	92429	Sieler	VRB		LCL	3.3						3.3		3.3
	12/29/1997	PA-28-161	92429	Sieler	VRB		LCL	1.6						1.6		1.6
	12/30/1997	PA-28-161	92429	Sieler	VRB		LCL	2.3						2.3		2.3
	03/17/1998	PA-28-161	92429	Benway	VRB	OPF	VRB	3						3		3
	03/18/1998	PA-28-161	92429	Benway	VRB		LCL	1.4						1.4		1.4
	03/19/1998	PA-28-161	92429	Benway	VRB		LCL	0.8						0.8		0.8
	03/20/1998	PA-28-161	92429	Benway	VRB	FPR	VRB	2.9						2.9		2.9
	03/21/1998	PA-28-161	92429	Benway	VRB		OPF	1.4						1.4		1.4

	03/22/1998	PA-28-161	92429	Benway	OPF		VRB	1.5						1.5		1.5
	03/23/1998	PA-28-161	92429	Benway	VRB	OBE	VRB	2.3						1.7	0.6	2.3
	03/24/1998	PA-28-161	92429	Benway	VRB	FPR	VRB	2.3						1.3	1	2.3
	03/25/1998	PA-28-161	92429	Benway	VRB	TIX	VRB	1	1.2					2.2		2.2
	03/27/1998	PA-28-161	92429		VRB		LCL	1.8							1.8	1.8
	03/28/1998	PA-28-161	92429	Benway	VRB		LCL	0.9						0.9		0.9
	03/28/1998	PA-28-161	92429		VRB		LCL	1.2							1.2	1.2
	04/03/1998	PA-28-161	92429	Benway	MCO		VRB	1.3						1.3		1.3
	04/04/1998	PA-28-161	92429	Benway	VRB	PHK	VRB	2.3						2.3		2.3
	04/05/1998	PA-28-161	92429		VRB	PHK	VRB	1.7							1.7	1.7
	04/06/1998	PA-28-161	92429	Benway	VRB		MCO	1.1						1.1		1.1
	04/10/1998	PA-28-161	92429	Benway	VRB		VRB	1.2						1.2		1.2
	04/11/1998	PA-28-161	92429		VRB	PHK-CCO-OBE	VRB	3.3							3.3	3.3
	04/12/1998	PA-28-161	92429	Benway	VRB	FPR	VRB	1.8			0.2			1.8		1.8
	04/13/1998	PA-28-161	92429	Benway	VRB		MCO	1			0.2			1		1
	04/18/1998	PA-28-161	92429	Benway	MCO	OBE	VRB		2.4		0.4			2.4		2.4
	04/18/1998	PA-28-161	92429	Benway	VRB	FPR	VRB	1.6						1.6		1.6
	04/18/1998	PA-28-161	92429	Benway	VRB		VRB	1.9			0.4			1.9		1.9
	04/19/1998	PA-28-161	92429	Benway	VRB		VRB	1.5						1.5		1.5
	04/19/1998	PA-28-161	92429	Benway	VRB		VRB	0.9						0.9		0.9
	04/20/1998	PA-28-161	92429	Benway	VRB	X59	VRB	2			0.3			2		2
	04/22/1998	PA-28-161	92429	Benway	VRB		MCO	1						1	1	1
	04/22/1998	PA-28-161	92429	FAA	VRB	SUA-FPR	VRB	1.9			0.4			1.9	1.9	1.9
	04/24/1998	C-172	4813D		MDW		CGK	1.8						1.8	1.8	1.8
	04/29/1998	C-172R	151MA	Kallenburg	TEB	SWF	TEB	1.6						1.6	1.6	1.6
	05/03/1998	PA-28-181	146AV	Merena	TEB	MMU-CDW	TEB	1	0.4					1.4	1.4	1.4
	05/14/1998	G-AAIC	9805A		SMO	CMA	SMO	1.3						1.3		1.3
	05/15/1998	C-172	72AF		SMO	LGB	SMO	1						1	1	1
	05/16/1998	C-172RG	9451D		SMO	AVY	SMO	1.8						1.8		1.8
	05/20/1998	C-182S	95229	Biederman	TEB	BDR-HVN	TEB	1.7						1.7		1.7
	05/22/1998	C-182S	95229	Biederman	TEB		MVY	1.8						1.8	1.8	1.8
	05/23/1998	PA-128	2149F	Marx	MVY	PVD-MVY	PVD	2.8						2.8	2.8	2.8
	05/25/1998	C-182S	95229	Biederman	MVY		TEB	1.7			0.9			1.7	1.7	1.7
	05/28/1998	C-182S	95229	Biederman	MVY		OWD	1.8						1.8	1.8	1.8
	05/29/1998	PA-128	2149F		MVY	HYA	MVY	1.3							1.3	1.3
	05/30/1998	PA-28-161	2149F	Marx	MVY	HYA	MVY	1.2						1.2	1.2	1.2
	05/31/1998	C-172R	151MA	Biederman	MVY		TEB	2		0.8	0.5			1.3	2	2
	06/03/1998	C-182S	95229	Biederman	TEB	FRG	TEB		1.5					1.5	1.5	1.5
	06/05/1998	C-172	151MA	Biederman	TEB		MVY	1	1					2	2	2
	06/08/1998	C-172R	151MA		TEB		MVY	1.9							1.9	1.9
	06/08/1998	C-182S	95229	Biederman	MVY		TEB	1.8		0.5	0.4			0.9	1.8	1.8
	06/09/1998	C-182S	95229	Biederman	TEB		DCA	2.4		0.4	0.8			1.2	2.4	2.4
	06/21/1998	C-182S	95229		DCA		TEB	2.6			0.5			2.6	2.6	2.6
	06/25/1998	C-182	735ME		VRB		LCL	0.4							0.4	0.4
	06/25/1998	PA-129	92429		MCO		VRB	1						1	1	1

	06/26/1998	C-182	735ME	Benway	VRB	SAV	ILM	4		0.3				4	4	4
	06/27/1998	C-182	735ME	Benway	ILM	RIC	DCA	2.6						2.6	2.6	2.6
	06/28/1998	C-182	735ME	Benway	DCA	CDW-TAN	MVY	3.8						3.8	3.8	3.8
	07/02/1998	PA-128	23389		TEB		HYA	1.9							1.9	1.9
	07/02/1998	PA-28R-201	31869	Merena	TEB		TEB	3.7						3.7	3.7	3.7
	07/03/1998	C-182	735ME		HYA	MVY	HYA	1.2							1.2	1.2
	07/05/1998	C-182	735ME		HYA		CDW	1.6							1.6	1.6
	07/09/1998	C-182	735ME		CDW		MVY		1.7						1.7	1.7
	07/10/1998	C-182	735ME		MVY		OWD	1.8							1.8	1.8
	07/11/1998	C-182	735ME	Benway	MVY	HYA-2B1	HYA	1.5						1.5	1.5	1.5
	07/12/1998	C-182	735ME		HYA		MVY	0.5							0.5	0.5
	07/13/1998	C-182	735ME		MVY		CDW	1.7							1.7	1.7
	07/24/1998	C-182	735ME		CDW		MVY	1.5							1.5	1.5
	07/25/1998	C-182	735ME		MVY	PVC-CQX	MVY	1.6							1.6	1.6
	07/27/1998	C-182	735ME		MVY		CDW	1.7							1.7	1.7
	07/31/1998	C-182	735ME		CDW		HYA	1	0.7						1.7	1.7
	08/01/1998	C-182	735ME		HYA	PVC	HYA	1.3							1.3	1.3
	08/02/1998	C-182	735ME		HYA	MVY	CDW	1	1						2	2
	09/03/1998	C-182	529JK		CDW		HYA		1.5						1.5	1.5
	09/05/1998	C-182	529JK		HYA	OWD-PVC	HYA	2							2	2
	09/07/1998	C-182	529JK		HYA	OWD	HYA	1.5							1.5	1.5
	09/08/1998	C-182	529JK		HYA		CDW	1.8							1.8	1.8
	09/10/1998	A-39						0.6						0.6		0.6
	09/11/1998	C-182	529JK		MVY		CDW	1.5							1.5	1.5
	09/11/1998	C-182	529JK		CDW		SYR	1.8							1.8	1.8
	09/11/1998	C-182	529JK		SYR	BGM	MVY	2							2	2
	09/15/1998	A-39						0.5						0.5		0.5
	09/27/1998	C-182	529JK		CDW	MVY	CDW	3.5							3.5	3.5
	09/29/1998	C-182	529JK		CDW	HTO	CDW		3						3	3
	10/02/1998	C-182	529JK		CDW		MLT	2	1						3	3
	10/03/1998	C-182	529JK		MLT		BHB	0.8							0.8	0.8
	10/04/1998	C-182	529JK		BHB		CDW	2.7							2.7	2.7
	10/07/1998	C-182	95229	Merena	TEB		LCL		1.1			1		1.1	1.1	1.1
	10/12/1998	C-182	95229	Merena	TEB	ABE	TEB		2.4	0.7	1.3	3		2.4	2.4	2.4
	10/15/1998	C-182	529JK	Merena	TEB	BED	TEB	1.2	1.6	0.1		1		2.8	2.8	2.8
	10/23/1998	C-182	65776	Merena	TEB	12N	TEB	2				3		2	2	2
	10/25/1998	C-182	529JK		CDW	HYA	CDW	1.7	1.9						3.6	3.6
	10/29/1998	C-172R	151MA	Merena	TEB	SAX	TEB		1.6					1.6	1.6	1.6
	11/06/1998	C-182	529JK	Merena	CDW		MVY		1.5	0.1	0.6			1.5	1.5	1.5
	11/06/1998	C-182	529JK	Merena	CDW	DCA	CDW	3	0.2		0.6			3.2	3.2	3.2
	11/08/1998	C-182	529JK	Merena	MVY		CDW	1.5			0.7			1.5	1.5	1.5
	11/09/1998	C-182	529JK	Merena	CDW	AGC	CDW	2.6	1.3					3.9	3.9	3.9
	12/06/1998	C-172R	151MA	Merena	TEB	FWN	TEB		2.3			2		2.3	2.3	2.3
	12/09/1998	C-172	65776	Merena	TEB	MGJ	TEB		1.8			3		1.8	1.8	1.8
	12/14/1998	C-172R	151MA	Merena	TEB	MGJ	TEB		2.1			2		2.1	2.1	2.1

	12/31/1998	C-182	529JK	York	U61		LCL	1.5						1.5	1.5	1.5
	01/04/1999	C-182	529JK	York	U61		SNA	4.5						4.5	4.5	4.5
	01/05/1999	C-182	529JK	Biederman	SMQ		TUL	7	3					10	10	10
	01/15/1999	C-182	95229	Merena	TEB		MVY		1.6					1.6	1.6	1.6
	01/18/1999	C-182	529JK	Biederman	MVY		TEB	1.1	0.7					1.8	1.8	1.8
	01/22/1999	C-182	529JK	Biederman	TEB	CDW	TEB	1		1		2		1	1	1
	03/06/1999	C-182	95229	Merena	TEB		HYA	1.6						1.6	1.6	1.6
	03/08/1999	C-182	95229	Merena	HYA		TEB	1.3						1.3	1.3	1.3
	03/11/1999	C-182	529JK	Biederman	GAI		TEB		1.8					1.8	1.8	1.8
	04/00/1999	C-182	529JK		TEB		DCA	1.5							1.5	1.5
	04/00/1999	C-182	529JK		DCA		TEB	1.5							1.5	1.5
	04/05/1999	F142		Benway									1.5	1.5		1.5
	04/06/1999	PA-28-161	92429	Benway	VRB		VRB	1.6						1.6	1.6	1.6
	04/06/1999	PA-28-161	92429	Benway	VRB		VRB	1.8						1.8	1.8	1.8
	04/07/1999	PA-28-161	92429	Benway	VRB		VRB	1.4						1.4	1.4	1.4
	04/08/1999	F142		Benway									1.9	1.9		1.9
	04/09/1999	F142		Benway									1.7	1.7		1.7
	04/10/1999	F142		Benway									1.8	1.8		1.8
	04/10/1999	F142		Benway									2	2		2
	04/17/1999	F142		Benway									1.5	1.5		1.5
	04/17/1999	F142		Glenna									2.5	2.5		2.5
	04/18/1999	F142		Benway									1.8	1.8		1.8
	04/18/1999	F142		Benway									0.9	0.9		0.9
	04/18/1999	PA-28-161	9243L	Glenna	VRB		LCL	1.7			1.3			1.7	1.7	1.7
	04/18/1999	PA-44	66AL	Benway	VRB		MCO	1.9						1.9		1.9
	04/19/1999	C-182	529JK	Biederman	OWD		TEB		1.9					1.9	1.9	1.9
*	04/22/1999	PA-32R-301	9253N	O'Neill	CDW		CDW	0.7						0.7	0.7	0.7
	04/23/1999	PA-28R-201	31567	Glenna	VRB		VRB	2.3						2.3	2.3	2.3
	04/24/1999	F142		Benway									1.3	1.3		1.3
	05/01/1999	PA-32R-301	9253N	O'Neill	CDW		DCA	1.5						1.5	1.5	1.5
	05/02/1999	PA-32R-301	9253N	Biederman	DCA	CDW	BOS	2	2.2					4.2	4.2	4.2
	05/16/1999	PA-32R-301	9253N	Biederman	TEB	1N7	TEB	1.8						1.8	1.8	1.8
	05/22/1999	PA-32R-301	9253N	Biederman	TEB		ILG		1.3	0.4				1.3	1.3	1.3
	05/22/1999	PA-32R-301	9253N	Biederman	ILG		OWD	2.3		2		1		2.3	2.3	2.3
	05/22/1999	PA-32R-301	9253N		OWD	HTO	TEB	0.8	0.8						1.6	1.6
*	05/28/1999	PA-32R-301	9253N		CDW		MVY	1.5							1.5	1.5
	06/11/1999	PA-32R-301	9253N	Biederman	CDW		MVY	1.3	0.5					1.8	1.8	1.8
	06/14/1999	PA-32R-301	9253N	Biederman	MVY		CDW	2		0.8		1		2	2	2
	06/18/1999	PA-28-181	146AV	Merena	TEB		MVY		1.5					1.5	1.5	1.5
	06/21/1999	PA-32R-301	9253N	Biederman	MVY	HYA	CDW	1.8		0.8				1.8	1.8	1.8
	06/25/1999	PA-32R-301	9253N	O'Neill	CDW		MVY	1.5		0.1		1		1.5	1.5	1.5
	06/28/1999	PA-32R-301	9253N	Biederman	MVY	BOS	CDW	2.2		1		2		2.2	2.2	2.2
	07/01/1999	PA-32R-301	9253N	Merena	CDW		MVY	0.4	1.6					2	2	2
	07/05/1999	PA-32R-301	9253N	Biederman	MVY		CDW	1.6						1.6	1.6	1.6
	07/09/1999	PA-32R-301	9253N	Biederman	CDW		MVY	0.6	1.2					1.8	1.8	1.8

	07/12/1999	PA-32R-301	9253N	Biederman	MVY	ITH-YYZ-BUF	CDW	4.2	1.8					6	6	6
		Totals						255.1	54.5	9	11.8	22	16.9	255	211.6	326.5

August 10, 1999

Dennis L. Jones
[redacted]
Silver Spring, MD 20910

Mr. Robert Pearce
National Transportation Safety Board
2001 Route 46
Parsippany, New Jersey 07054

Subject: Aircraft accident near Martha's Vineyard, MA on 7/15/99.

Dear Mr. Pearce

On July 15, 1999 I was the pilot of a PA-32-300, N6821J, that departed Bar Harbor, Maine at 1730 destined for Farmingdale, NY. The flight was approximately 2 hours duration. My preflight weather briefing from Flight Service Station indicated visual meteorological conditions en route; however, because of my familiarity with the summer haze in the area, I elected to file an IFR flight plan. During the flight I was routed through Cape Cod area direct to Farmingdale. The flight was conducted at 6,000 feet mean sea level and I encountered visibilities of 2 to 3 miles throughout the flight due to haze. Most of the flight was in instrument meteorological conditions and the lowest visibility was overwater between Cape Cod and eastern Long Island. I did not encounter any clouds below 6000 feet.

Sincerely,

Dennis L. Jones

TELEPHONE MEMORANDUM FOR RECORD

DATE: January 14, 2000 About: 1520

NAME OF PERSON CONTACTED: Thomas Anzalone

SUBJECT: NYC99MA178, JFK Jr., July 16, 1999

Mr. Anzalone was the pilot of a PA-23-250 that landed at Martha's Vineyard Airport(MVY), Martha's Vineyard, Massachusetts, about 2145, on July 16, 1999. During the interview Mr. Anzalone stated the following:

Mr. Anzalone departed the Teterboro Airport, Teterboro, New Jersey, the evening of July 16, 1999, about 2030, destined for MVY. After departure, he flew north of the Alpine Towers and south of Westchester County Airport. Remaining clear of the Class B airspace, he climbed to 7,500 feet and monitored several ATC frequencies, but did not transmit on any of them until his arrival at MVY. His route of flight took him over the north shore of Long Island and to Montauk, New York. He then cross over Block Island, Rhode Island, and proceeded direct to MVY.

He stated that the entire flight was under visual flight rules, with a visibility of 3 to 5 miles in haze. Over land he could see lights on the ground when he looked directly down or slightly forward. Over water there was no visibility to reference. He was not sure if he was on top of the haze layer at 7,500 feet. During the flight to MVY, he did not encounter any cloud layers or ground fog during his climb or descent.

Between Block Island and MVY there was no visual horizon to reference. He recalled that he began to observe lights on Martha's Vineyard when he was in the vicinity of Gay Head, Martha's Vineyard. He said that before reaching MVY he would have began his descent from 7,500 feet and would have been between 3,000 and 5,000 feet over Gay Head. He does not recall seeing the Gay Head marine lighthouse. He was about 4 miles from MVY when he first observed the rotating beacon on the airport.

He departed MVY just as the controller announced that the tower was closing, about 2200. After takeoff, he proceeded on a heading of 290 degrees, climbed to 6,500 feet, and proceeded direct to Groton, Connecticut. During the return flight to land, the visibility remained the same as the flight to MVY, about 3 to 5 miles in haze.

[redacted]
Robert L. Pearce
Regional Director

FORM APPROVED
OMB NO. 2120-0042

UNITED STATES OF AMERICA
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

AIRCRAFT BILL OF SALE

FOR AND IN CONSIDERATION OF $ THE UNDERSIGNED OWNER(S) OF THE FULL LEGAL AND BENEFICIAL TITLE OF THE AIRCRAFT DESCRIBED AS FOLLOWS:

UNITED STATES REGISTRATION NUMBER: N 9253N

AIRCRAFT MANUFACTURER & MODEL: PIPER PA32R-301

AIRCRAFT SERIAL No.: 3213100

DOES THIS 28TH DAY OF APRIL 1999 HEREBY SELL, GRANT, TRANSFER AND DELIVER ALL RIGHTS, TITLE, AND INTERESTS IN AND TO SUCH AIRCRAFT UNTO:

Do Not Write In This Block
FOR FAA USE ONLY

PURCHASER

NAME AND ADDRESS
(IF INDIVIDUAL(S), GIVE LAST NAME, FIRST NAME, AND MIDDLE INITIAL.)

COLUMBIA AIRCRAFT SALES, INC.
GROTON: NEW LONDON AIRPORT
GROTON, CT. 06340

DEALER CERTIFICATE NUMBER

AND TO EXECUTORS, ADMINISTRATORS, AND ASSIGNS TO HAVE AND TO HOLD SINGULARLY THE SAID AIRCRAFT FOREVER, AND WARRANTS THE TITLE THEREOF.

IN TESTIMONY WHEREOF I HAVE SET MY HAND AND SEAL THIS 28TH DAY OF APR 1999

SELLER

NAME (S) OF SELLER (TYPED OR PRINTED)	SIGNATURE (S) (IN INK) (IF EXECUTED FOR CO-OWNERSHIP, ALL MUST SIGN.)	TITLE (TYPED OR PRINTED)
HUSSAIN MUNIR	[redacted]	OWNER

ACKNOWLEDGMENT (NOT REQUIRED FOR PURPOSES OF FAA RECORDING; HOWEVER, MAY BE REQUIRED BY LOCAL LAW FOR VALIDITY OF THE INSTRUMENT.)

ORIGINAL: TO FAA

AC Form 8050-2 (9/92) (NSN 0052-00-629-0003) Supersedes Previous Edition

FORM APPROVED
OMB NO. 2120-0042

UNITED STATES OF AMERICA
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

AIRCRAFT BILL OF SALE

FOR AND IN CONSIDERATION OF $1/ovc THE UNDERSIGNED OWNER(S) OF THE FULL LEGAL AND BENEFICIAL TITLE OF THE AIRCRAFT DESCRIBED AS FOLLOWS:

UNITED STATES REGISTRATION NUMBER N 9253N

AIRCRAFT MANUFACTURER & MODEL
Piper Saratoga PA32R-301

AIRCRAFT SERIAL No.
3213100

DOES THIS 28th DAY OF April 1999 HEREBY SELL, GRANT, TRANSFER AND DELIVER ALL RIGHTS, TITLE, AND INTERESTS IN AND TO SUCH AIRCRAFT UNTO:

Do Not Write In This Block
FOR FAA USE ONLY

PURCHASER

NAME AND ADDRESS
(IF INDIVIDUAL(S), GIVE LAST NAME, FIRST NAME, AND MIDDLE INITIAL.)

Air Bound Aviation, Inc.
5 Wright Way
Caldwell Essex County Airport
Fairfield, NJ 07004

DEALER CERTIFICATE NUMBER

AND TO its EXECUTORS, ADMINISTRATORS, AND ASSIGNS TO HAVE AND TO HOLD SINGULARLY THE SAID AIRCRAFT FOREVER, AND WARRANTS THE TITLE THEREOF.

IN TESTIMONY WHEREOF I HAVE SET my HAND AND SEAL THIS 28th DAY OF April 1999

SELLER

NAME (S) OF SELLER (TYPED OR PRINTED)	SIGNATURE (S) (IN INK) (IF EXECUTED FOR CO-OWNERSHIP, ALL MUST SIGN.)	TITLE (TYPED OR PRINTED)
Columbia Aircraft Sales, Inc.	[redacted]	Chief Operating Officer

ACKNOWLEDGMENT (NOT REQUIRED FOR PURPOSES OF FAA RECORDING: HOWEVER, MAY BE REQUIRED BY LOCAL LAW FOR VALIDITY OF THE INSTRUMENT.)

ORIGINAL: TO FAA

AC Form 8050-2 (9/92) (NSN 0052-00-629-0003) Supersedes Previous Edition

FORM APPROVED
OMB NO. 2120-0042

UNITED STATES OF AMERICA
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

AIRCRAFT BILL OF SALE

FOR AND IN CONSIDERATION OF $ 1 00 THE UNDERSIGNED OWNER(S) OF THE FULL LEGAL AND BENEFICIAL TITLE OF THE AIRCRAFT DESCRIBED AS FOLLOWS:

UNITED STATES REGISTRATION NUMBER N 9253N

AIRCRAFT MANUFACTURER & MODEL PIPER PA 32R-301

AIRCRAFT SERIAL No. 32-13100

DOES THIS 28 DAY OF April 19 99 HEREBY SELL, GRANT, TRANSFER AND DELIVER ALL RIGHTS, TITLE, AND INTERESTS IN AND TO SUCH AIRCRAFT UNTO:

Do Not Write In This Block
FOR FAA USE ONLY

PURCHASER

NAME AND ADDRESS
(IF INDIVIDUAL(S), GIVE LAST NAME, FIRST NAME, AND MIDDLE INITIAL.)

RANDOM VENTURES, INC./JOHN KENNEDY
1633 BROADWAY, 41ST FLOOR
NEW YORK, NY 10019

DEALER CERTIFICATE NUMBER

AND TO EXECUTORS, ADMINISTRATORS, AND ASSIGNS TO HAVE AND TO HOLD SINGULARLY THE SAID AIRCRAFT FOREVER, AND WARRANTS THE TITLE THEREOF.

IN TESTIMONY WHEREOF I HAVE SET MY HAND AND SEAL THIS 28 DAY OF April 19 99

SELLER

NAME (S) OF SELLER (TYPED OR PRINTED)	SIGNATURE (S) (IN INK) (IF EXECUTED FOR CO-OWNERSHIP, ALL MUST SIGN.)	TITLE (TYPED OR PRINTED)
Air Boss Aviation Inc	[redacted]	President

ACKNOWLEDGMENT (NOT REQUIRED FOR PURPOSES OF FAA RECORDING: HOWEVER, MAY BE REQUIRED BY LOCAL LAW FOR VALIDITY OF THE INSTRUMENT.)

ORIGINAL: TO FAA

AC Form 8050-2 (9/92) (NSN 0052-00-629-0003) Supersedes Previous Edition

№ 76440

AIRCRAFT TYPE: PIPER
N# 9253N

170640
173340

ARRIVAL		DEPARTURE	
DATE:	7-12-99	DATE:	7/12/99
TIME:	1040	TIME:	9:30 PM

OWNER: J. Kennedy

ADDRESS: [redacted] NY / NY STATE

LOCAL CONTACT: | PILOT:

SERVICES REQUIRED				OFFICE RECORD		AMOUNT
CASH	CREDIT CARD	CHARGE	CONTRACT	GALLONS 14	2.09	29.26
FUEL OCTANE 100LL	TANKS			L. ENGINE	R. ENGINE	
OIL GRADE	DET.	NON-DET.	LEVEL	OIL TYPE	QUARTS	
HANGER STORAGE				HANGAR #		
PAS RAMP	TIE DOWN			PAS RAMP #		
NFTA RAMP				BUSINESS PETROLEUM TAX @ .1400		1.96
ADDITIONAL SERVICES						
OXYGEN	ISOPROPL	DEICING		CARBON MONOXIDE		4.95
PRIST ADDITIVE	OTHER			FEDERAL FUEL EXCISE TAX TESTER .194		2.72
WASH	WAX	INTERIOR		LANDING FEE		15.00
COMMISSARY SERVICE:				COMMISSARY SERVICE		
				MAINTENANCE SERVICE		
MAINTENANCE SERVICE				TYPE CREDIT CARD		
				CARD NO.		
				SERVICED BY MW	DATE 7-12	
			PX-IN-OUT	NYS .187		2.62
				TOTAL		
				MISC.		
				NYS .08		.40
				TOTAL		46.91
				DATE BILLED		
				INVOICE NO.		

IN CONSIDERATION OF THE SERVICES PROVIDED BY PRIOR AVIATION SERVICE, I AGREE TO BE RESPONSIBLE FOR, AND TO PAY ANY CHARGES INCURRED FOR SERVICES PROVIDED WITH RESPECT TO THIS AIRCRAFT WHILE LOCATED AT THIS AIRPORT. I FURTHER AGREE THAT PRIOR AVIATION WILL NOT BE HELD RESPONSIBLE FOR AIRCRAFT OR ARTICLES LEFT IN THE AIRCRAFT OR PARTS LEFT WITH PRIOR AVIATION FOR STORAGE OR REPAIR IN CASE OF LOSS OR DAMAGE BY FIRE, THEFT OR LOSS OF ANY KIND BEYOND THE CONTROL OF PRIOR AVIATION. PRIOR AVIATION SHALL HAVE THE RIGHT TO RETAIN POSSESSION OF THE AIRCRAFT OR ITS PARTS AS SECURITY FOR THE PAYMENT OF SERVICES RENDERED.

PILOT SIGNATURE X [redacted]

SERVICE RECORD

PRIOR AVIATION SERVICE, INC.
BUFFALO, N.Y.

Prior Aviation Service
PILOT Registration Card

CMND CENTER - CAPE COD

COUNTER GIRL
MICHELLE VITALE

TELEPHONE MEMORANDUM FOR RECORD

DATE: January 5, 2000 About:1415

NAME OF PERSON CONTACTED: Doctor Robert Poole

SUBJECT: NYC99MA178, John F. Kennedy Jr.

A telephone discussion took place with Dr. Poole and Mr. West of AAI-100. Dr. Poole was employed by the FAA. Questions had been posed to the FAA concerning the ankle injury of Mr. Kennedy, and what action would the FAA have required, or taken, in regards to Mr. Kennedy's flight status. After reviewing the medical information provided to him on the outline produced by the Safety Board Medical Officer, Dr. Mitch Garber, Dr. Poole provided the following:

FAR Part 61.53 was discussed, which generally stated that a pilot would not act as a pilot in command while that person had a medical condition that would make the person unable to meet the requirements of the medical certificate. Although Mr. Kennedy flew his airplane with a cast on one ankle, he had a flight instructor with him, who would be the pilot in command for practical purposes.

Dr. Poole was asked if a pilot with this type of injury would have been expected to report the injury, and would he have been required to seek a medical clearance from a FAA Medical Examiner prior to commencing solo flight. Dr. Poole said that normally in a case like this, a pilot would not be expected to report the injury, or to seek a medical clearance before solo flight.

[redacted]
Robert L. Pearce
Regional Director

Fundamentals of Aerospace Medicine

Second Edition

Roy L. DeHart, M.D., M.P.H.
Professor and Chairman of the Department
of Family and Preventive Medicine
University of Oklahoma
Health Sciences Center
Oklahoma City, Oklahoma

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Accurate indications, adverse reactions and dosage schedules for drugs are provided in this book, but it is possible that they may change. The reader is urged to review the package information data of the manufacturers of the medications mentioned.

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be suicide. Because of such considerations, it is imperative that the physician ascertain both the mental and physical stability of a patient being considered for a return to flying duties. Even passengers should be similarly evaluated because disaster could result if a patient with actual or only suspected extension of a malignancy decided to take drastic action during a flight. (See also the subsequent discussion of AIDS.)

Specific Tumors

Germinal Cell Tumors of the Testes

Germinal cell tumors of the testes are among the more common malignant tumors in older males in the military. Conrad et al. analyzed 552 patients with such tumors and determined the hazard rate for different combinations of type, stage, and treatment (32). For example, the hazard rate for recurrence decreases to < 5% after one year for teratocarcinoma (Dixon-Moore type IV) stage A (tumor confined to testis and adnexa). Depending on the function of the other testis, lifelong testosterone replacement therapy may be necessary. Treatment may include lymphadenectomy, which can produce varying degrees of lymphedema. Should a teratocarcinoma of this type and stage recur, it would not be expected to produce incapacitation. Considering these factors, a recurrence free patient with type IV, stage A tumor seen one year after definitive treatment could be considered for a return to flying duties. For many testicular tumors, advances in radiotherapy and chemotherapy now offer cure rates approaching 100%. Return of patients with a history of treatment of such a tumor would be contingent on the absence of significant lymphedema or any other physical problem, serum hormone studies demonstrating adequate testosterone replacement, and appropriate mental status.

Melanoma

Melanoma demonstrates the need to evaluate the possibility of abrupt incapacitation. Moseley et al. evaluated 712 patients with this disease (33). Lesions were classified accordi
site and staged to reflect spread from th
site. When possible, microstaging
techniques of Clark and Breslow w
plished. Melanoma is known to me
brain, doing so in approximately
patients. Brain, however, is not alw
site of metastasis in this malignancy
vestigators found that brain was the
recurrence in only 8% of state III (di
melanoma) patients. In addition, the
presented as a catastrophic even
stroke or seizure, in only 1.6% of
tients. The risk of a catastrophic ev
to 0.6% for the entire group of pa
et al. studied 604 patients with m
had recurrent disease (30). Thirty-o
these patients had brain metastasis
nervous system symptoms were
dence of recurrence in 7% of 184
recurrent disease. No catastroph
curred without prior symptoms in th
hazard rate for recurrence varied w
cation and staging. For example, th
decreased to < 5% in three years
neck lesions with negative lymph
not reach this level for five years
the trunk with negative lymph no
ing the results of such studies,
when no other physical or mental
tions exist, to recommend a retur
ties for selected patients with his
noma in spite of the possibility o
brain. Because of such possibili
low-up of these patients is indi
patient has extensive disease, it m
ate to recommend against even p
because of seizure risk.

ORTHOPEDIC DISORDERS

Fractures, Sprains, and Dislo

Although passengers can fly with
cast, crew members must be a
their functions unencumbered.

usually must have normal function of the musculoskeletal system to accomplish the myriad of tasks involved in flight activities. In general, a crew member who has experienced an orthopedic injury should not be qualified for a return to flight duties until the injured part has regained essentially normal motion and muscle strength. In addition, no residual discomfort or pain should be present at rest or during exertion that could restrict required activity. For example, a pilot may have a normal range of motion after an ankle injury but be unable to apply necessary brake pressure due to residual pain. A flight attendant with apparently normal range of arm motion may not be able to operate emergency equipment because of residual muscle weakness or pain restriction. Such examples emphasize the need to ensure that the crew member with a "healed" injury is in fact fully qualified for a return to duty. They also demonstrate the need for the aerospace medicine physician to have detailed knowledge of the crew member's duties in order to make appropriate recommendations.

In still other instances, some obvious residual defect in strength or motion exists in spite of excellent care. Again, the evaluating examiner needs to have sufficient knowledge of the crew member's tasks to determine whether return to flying is appropriate. In evaluating patients with and without residual defects, the physician may find it beneficial to evaluate the patient in the actual workplace. Monitoring a patient through a simulated flight has uncovered previously unsuspected problems that could compromise flying safety or the individual's well-being.

Another consideration in evaluating a postinjury patient is whether any predisposition to further injury exists in the flight environment. For example, a patient seen at the Aeromedical Consultation Center of USAFSAM had experienced a cervical spine fracture during a dive into a pool. He received prompt attention, and the paralysis he initially experienced due to spinal cord compression gradually subsided. He eventually regained essentially normal function and applied for flight training. The healing process, however, had resulted in marked angulation of the cervical spine. If the applicant were to participate in operational flying and had to eject, the possibility existed that the ejection forces could produce a fracture and even transection of the spinal cord. Consequently, even though his musculoskeletal function was acceptable, the individual had to be disqualified for military flight duties.

A similar concern about the possibility of increased risk of reinjury was studied in crew members who had experienced a compression fracture during an ejection and then subsequently had to eject again (34). In open ejection-seat aircraft, the T-10 to L-2 vertebrae are most frequently injured, usually as a compression fracture, during ejection. The compression fractures typically heal without difficulty, and the flyers return to flying duties. The review of crew members with this history who were involved in a subsequent ejection did not reveal any increased risk of additional fractures during later ejection.

Back Pain

One of the more frequent conditions evaluated in family practice is back pain, and this problem is common to flyers, as well. Prolonged sitting, on occasion in seats without properly designed support, may cause initial or recurrent low-back pain in passengers or crew members. The problem may be aggravated further for aircrew who have to wear personal equipment, including parachutes, and remain strapped in place throughout a long flight. These and similar stresses result in frequent patient visits to the flight surgeon for the evaluation and treatment of back pain.

In evaluating a complaint of back pain, the examiner must, of course, rule out such disorders as renal lithiasis or malignant tumors. In some patients, the physician may detect significant disk disease, which can only be corrected by surgery. In most patients, however, the symptoms are due to mechanical derangement of the spine, often caused by faulty sitting or standing

Jay Biederman
[redacted]

Dave Muzio
NTSB
2001 Route 46
Suite 504
Parsippany, NJ 07054

Dear Dave,

Here are the photocopies of my logbook that you requested. Included is a summary sheet of John and my flight time that may be helpful.

I wanted to point out a few things to make them clear.

1. I often flew the plane without John on board. I marked these with "Jay solo".
2. I made several flights where I dropped John of somewhere and then flew back solo. On a few of these flights I accidentally marked the entire flight time in the "as flight instructor" column which would give an overestimate of Johns actual flight time. So, I wrote down the time that I estimated that John was in the plane and circled it in red.

THESE RECORDS MAY BE RELEASABLE UNDER THE FOIA REQUEST 15 DAYS AFTER SIGNATURE DATE UNLESS WE HEAR OTHERWISE FROM FAA NTSB COUNSEL

U.S.Department of Transportation
Federal Aviation Administration

Mike Monroney Aeronautical Center

P.O Box 25082
Oklahoma City, Oklahoma 73125

Friday, August 06, 1999

National Transportation Safety Board
2001 Route 46, Suite 504
Parsippany, NJ 07054

CAMI CASE # 9900170001 NAME KENNEDY, JOHN F. JR. PUTREFACTION: Yes

DATE OF ACCIDENT 7/16/99 DATE RECEIVED 7/23/99

LOCATION OF ACCIDENT VINEYARD HAVEN, MA

SPECIMENS Kidney, Liver, Lung, Muscle, Spleen

FINAL FORENSIC TOXICOLOGY FATAL ACCIDENT REPORT

CARBON MONOXIDE: The carboxyhemoglobin saturation was determined by spectrophotometry with a 10% cut off.

>> NOT PERFORMED.

CYANIDE: The presence of cyanide was screened by Conway Diffusion. Positive cyanides are quantitated using spectrophotometry. The limit of quantitation of cyanide is 0.25 ug/mL. Normal blood cyanide concentrations are less than 0.15 ug/mL, while lethal concentrations are greater than 3ug/mL.

>> NOT PERFORMED.

VOLATILES: The volatile concentrations were determined by headspace gas chromatography at a cut off of 10 mg/dL. All positive ethanols were confirmed by Radiative Energy Attenuation.

>> 36 (mg/dL, mg/hg) ETHANOL detected in Lung
>> 8 (mg/dL, mg/hg) ACETALDEHYDE detected in Lung
>> 55 (mg/dL, mg/hg) ETHANOL detected in Muscle
>> 5 (mg/dL, mg/hg) ACETALDEHYDE detected in Muscle

-Notes:
-The ethanol found in this case may potentially be from postmortem ethanol formation and not from the ingestion of ethanol.

DRUGS: Immunoassay and chromatography are used to screen for legal and illegal drugs which include: amphetamine (0.010), opiates (0.010), marihuana (0.001), cocaine (0.020), phencyclidine (0.002), benzodiazepines (0.030), barbiturates (0.060), antidepressants (0.100), antihistamines (0.020), meprobamate (0.100), methaqualone (0.100), and nicotine (0.050). The values in () are the threshold values in ug/mL used to report positive results. Values below this concentration are normally reported as not detected. GC/Mass Spec, HPLC/Mass Spec, or GC/FTIR, is used to confirm most positive results.

>> NO DRUGS detected in Kidney

[redacted] AUG 6 1999

Dennis V. Canfield, Ph.D.
Manager, Toxicology and Accident
Research Laboratory

NYC99MA178
MEDICAL INFORMATION

The following medical information was extracted by NTSB Medical Officer, Mitchell A. Garber, from the medical records maintained by the pilot's orthopedic surgeon and through interviews with the pilot's orthopedic surgeon and physical therapist:

6/1/99 The pilot fractured his left ankle "hang gliding."

6/2/99 The pilot underwent surgical "open reduction internal fixation of left ankle fracture."

6/10/99 The pilot visited his doctor, who noted: "follow up in two weeks, at which point, we will remove the cast and place him probably into a removable splint or Cam-Walker."

6/23/99 The pilot's leg was "removed from his cast and placed in a Cam-Walker. He will use this Cam-Walker for the next 3-4 weeks."

7/1/99 The pilot began physical therapy, performing directed exercises on his own.

7/15/99 The pilot's Cam-Walker was removed.

7/16/99 The pilot was given "straight cane and instructed in cane usage." He was noted to be "full-weight bearing with mild antalgic gait." The pilot's physical therapist described the pilot's limitations as not having full dorsiflexion (bending upward of the foot), and could not determine whether the pilot's gait was due to this slight limitation of motion or due to mild pain.

The pilot's orthopedic surgeon felt that, at the time of the accident, the pilot would have been able to apply the type of pressure with the left foot that would normally be required by emergency brake application with the right foot in an automobile.

No medications were prescribed for the ankle injury.

TELEPHONE MEMORANDUM FOR RECORD

DATE: July 21, 1999

NAME OF PERSON CONTACTED: Richard Perez

AT (location or number) [redacted]

SUBJECT: NYC99MA178, Piper, PA32R-300, Marthas Vineyard, Massachusetts

Mr. Perez is employed at Republic Airport, Farmingdale, New York. He preferred not to release his employer's name. On the night of the accident, between 2100 and 2230 Eastern Daylight Time, he was monitoring the Unicom frequency, 122.95 Mhz.

During that time, Mr. Perez heard several transmissions from a pilot that used a call sign similar to N9253N. During a period of several minutes, the pilot attempted to contact "Skipple". Mr. Perez believes this may be a fixed based operator at Marthas Vineyard, Massachusetts. The pilot received one response that was unintelligible to Mr. Perez. Then, the pilot responded "I'm not trying to speak with you, I'm trying to contact the facility." One last transmission was heard. The pilot stated "We're not going to make it if we don't get a hold of the facility." Mr. Perez believes that the pilot may have been attempting to arrange ground transportation or fuel services.

Additionally, Mr. Perez stated that his coworker also witnessed the transmissions. At this point, he preferred not to release his coworker's name, but would give him the option of contacting the National Transportation Safety Board.

[redacted]
Robert J. Gretz
Air Safety Investigator

TELEPHONE MEMORANDUM FOR RECORD

DATE: July 21, 1999

NAME OF PERSON CONTACTED: Steven J. Lagudi

AT (location or number): [redacted]

SUBJECT: NYC99MA178, Piper, PA32R-300, Marthas Vineyard, Massachusetts

Mr. Lagudi is employed at Republic Airport, Farmingdale, New York. He preferred not to release his employer's name. On the night of the accident, approximately 2120 Eastern Daylight Time, he was monitoring the Unicom frequency, 122.95 Mhz.

During that time, Mr. Lagudi heard several transmissions from a pilot, but he could not remember the call sign of the airplane. During a period of approximately 10 minutes, the pilot attempted to contact "someone at Marthas Vineyard," and "anyone monitoring at Marthas Vineyard." Mr. Lagudi further stated that the pilot's voice sounded increasingly anxious and frustrated as the transmissions continued. Toward the end of the transmissions, someone responded to the pilot. The pilot stated "Well, if there is nobody on the ground, were not going to make Marthas Vineyard. Mr. Lagudi did not know who responded to the pilot.

[redacted]
Robert J. Gretz
Air Safety Investigator