


|   |  |                                  |                                  |                                      |                  |
|---|--|----------------------------------|----------------------------------|--------------------------------------|------------------|
|    |  | NTSB ID: FTW96FA028              |                                  | Aircraft Registration Number: N105AG |                  |
|   |  | Occurrence Date: 10/26/1995      |                                  | Most Critical Injury: Fatal          |                  |
|   |  | Occurrence Type: Accident        |                                  | Investigated By: NTSB                |                  |
| Location/Time   |  |                                  |                                  |                                      |                  |
| Nearest City/Place<br>LEAGUE CITY   |  | State<br>TX                      | Zip Code<br>77573                | Local Time<br>0140                   | Time Zone<br>CDT |
| Airport Proximity: Off Airport/Airstrip   |  | Distance From Landing Facility:  |                                  |                                      |                  |
| Aircraft Information Summary  |  |                                  |                                  |                                      |                  |
| Aircraft Manufacturer<br>Mbb  |  | Model/Series<br>BO-105S /BO-105S |                                  | Type of Aircraft<br>Helicopter       |                  |
| Revenue Sightseeing Flight: No  |  |                                  | Air Medical Transport Flight: No |                                      |                  |
| Narrative   |  |                                  |                                  |                                      |                  |
| <p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>HISTORY OF FLIGHT</p> <p>On October 26, 1995, approximately 0140 central daylight time, a MBB BO-105S, N105AG, registered to, and operated by Associated Aircraft Group Inc.(AAG), as a Title 14 CFR Part 91 early morning positioning flight, crashed following a loss of control while maneuvering near League City, Texas. Instrument meteorological conditions prevailed, and a flight plan was not filed. The helicopter was destroyed by the impact with the terrain and a post crash fire. The commercial pilot and passenger were fatally injured. The flight originated from Galveston, Texas, about 15 minutes before the accident.</p> <p>During a telephone interview a passenger who had flown to Galveston, Texas, from offshore in the accident aircraft reported that, while approximately 2-3 miles offshore low clouds were encountered. The aircraft flew on top of the clouds until near Galveston Airport. During the descent to Galveston Airport, all of the windows "fogged over and they could not see out very well." The passenger stated that the pilot landed the aircraft 100-200 yards short of the drop off point, at approximately 0110-0115. The passenger further reported the aircraft continued to run for 10-15 minutes after he had disembarked the aircraft at approximately 0110. He also reported he had been sitting in the left rear seat.</p> <p>There were no reported eyewitnesses to the accident. The helicopter was reported missing when it failed to arrive at Hobby Airport. The helicopter was located on October 26, 1995, approximately 1330 by a company search aircraft.</p> <p>PERSONNEL INFORMATION</p> <p>The commercial rated pilot prior to being employed by Associated Aircraft Group, Inc.(AAG) in March of 1995, had been on active duty with the U.S. Army. While in the service, he served as a flight instructor and an instrument flight examiner, and had accumulated 4,340 flight hours of which 2,167 hours were logged as a flight instructor in helicopters.</p> <p>On October 5, 1995, the pilot satisfactory completed the MBB BO-105 transition course at American Eurocopter. During this course the pilot received 3 hours of flight instruction. On October 17, 1995, he satisfactory completed training and a FAR 135.293 flight check by the operator's check pilot. The pilot received one hour of flight time during this training and check flight.</p> <p>The pilot flew the accident aircraft on October 19, 1995, and logged 2.1 hours. On October 25, 1995, the pilot had accumulated approximately 5 hours prior to the early morning accident flight.</p> <p>AIRCRAFT INFORMATION</p> |  |                                  |                                  |                                      |                  |
| FACTUAL REPORT - AVIATION   |  |                                  |                                  |                                      |                  |

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**Narrative** (Continued)

AAG purchased the helicopter from American Eurocopter on October 13, 1995, with a total aircraft time of 10,850.9 hours. The aircraft was equipped with an environmental control unit system, which provides a means of maintaining the cabin temperature under varied weather conditions. The aircraft was not equipped for IMC flight. On October 25, 1995, approximately 2320, the helicopter was fueled with 85 gallons of Jet A fuel by Talon Air Services. See enclosed fueling records. A review of the airframe and engine records by a FAA inspector did not reveal any anomalies or uncorrected maintenance defects.

**METEOROLOGICAL INFORMATION**

Weather observations at 0132 for William P. Hobby (HOU), located approximately 14 nautical miles northwest from the accident location was a measured ceiling 700 feet broken, 1,700 feet overcast; visibility 6 miles; weather fog; wind from 120 degrees at 5 knots; altimeter setting 29.98 inches. The temperature was 71 degrees Fahrenheit with a dew point of 70 degrees Fahrenheit. The moon illumination for the accident area at 0120 was six percent. See enclosed weather report.

During a telephone interview with the investigator-in-charge, a Herman Hospital Life Flight pilot reported they ceased flight operations in the Houston area due to an estimated ceiling of 400 feet broken and 3 miles visibility, the approximate time was 2400-0020. The Life Flight Pilot reported that the ceiling subsequently dropped to an estimated 300 feet sometime between 2400-0130.

A person working in a Stop and Go Store at the Main Street exit of I-45, La Marque, Texas, reported to a FAA inspector that about 0100 she heard a helicopter fly over the store. "The helicopter appeared to be traveling in a northwesterly direction when it passed over the store, then it turned and paralleled the Interstate Highway." She further reported that, "the helicopter sounded like it was very low." The helicopter also "appeared to be making a sputtering noise like a car makes when it stalls out from no getting enough gas." She also reported that, "the weather at the time was sort of misty."

A resident of the area who resides approximately 5 miles south southeast of the accident site reported to a representative of the operator that she was on her back porch facing to the south. She reported that, at 0115 she observed the top of a tower located 2.5 miles west of her home. The tower according to the Houston VFR Terminal Area Chart is 519 feet tall. She also reported that, "there was no fog, but was beginning to get hazy." At approximately 0130 she "heard a helicopter passing to the northeast of her home. She could not see the helicopter because the view was blocked by her house. See the resident's enclosed statement. Attempts to verify the information with the witness were unsuccessful.

Two area residents were approximately 8 miles northwest of the accident site at the intersection of FM518 and FM528 at approximately 0130. They reported to a representative of the operator that the weather was overcast, however it was not foggy or raining. One of the residents estimates "the ceiling was at least 300 feet." See the residents' enclosed statement. Attempts to verify the information with the witness were unsuccessful.

According to FAR 91.155, a helicopter may operate in Class G airspace below 1,200 feet MSL clear of clouds if operated at a speed that allows the pilot adequate opportunity to see any air traffic or obstruction in time to avoid a collision. However, according to AAG's Operations Manual, during nighttime hours the company VFR minimum ceiling is 800 feet above the surface and a visibility of two statute miles for helicopters. Helicopters will not carry passengers under Visual Flight Rules with weather minimums less than those stated. See enclosed excerpt of Operations Manual.

Their operation manual further states that "the flight crew will obtain a weather briefing prior to all flight operations. Weather updates will be obtained during the entire flight to ascertain any changes in weather that could affect the outcome of a flight." There were no records found on any weather update by the pilot. See enclosed excerpt of Operations Manual.

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## Narrative (Continued)

## COMMUNICATIONS

The operator reported to the investigator-in-charge that, the pilot last communicated with them via a cellular phone when he was at Galveston for fuel, approximately 2300-2315. The pilot did not report any maintenance or operational anomalies during that conversation. According to their operations manual positive flight following will be provided by AAG/Seachem personnel through the use of Motorola 900 series radios. The pilot will contact the flight followers to report "operations normal" every fifteen minutes and announce arrival at destination. Flight following personnel will record departure point, time, time of each en route check-in, and arrival point and time for each leg on the flight sheet. See enclosed flight sheet.

If position/arrival report is not received as scheduled, the flight follower will proceed as per Operations Manual. The pilot's wife contacted the company operations about 0400-0415 to report that her husband had not returned home. See enclosed excerpt of Operations Manual.

## WRECKAGE AND IMPACT INFORMATION

The aircraft wreckage was located approximately 3 nautical miles southwest of League City, Texas, at latitude 29 degrees 27.26 minutes north and longitude 95 degrees 08.42 minutes west. The main ground scar was 66 inches by 76 inches and 36 inches deep. A small tree on the right side of the partially buried right skid, had some broken limbs approximately 8-10 feet off the ground. The aircraft angle of impact was measured as 40 degree down, 74 degree right bank on a magnetic heading of 226 degrees. Wreckage distribution from the main wreckage extended outwards 248 feet; one emergency float bottle was located at 448 feet. See enclosed wreckage diagram for wreckage distribution details.

A ground scar 184.5 inches long, 30 inches wide, and 24 inches deep, aft of the main impact crater contained the blue main rotor blade with the green blade next to it. The red main rotor blade was still connected to the main rotor head, but was partially separated. The yellow main rotor blade was shattered, but was co-located with the other blades. A piece of main rotor blade spar was found 30 feet from the wreckage within the wreckage distribution area. Numerous small pieces of main rotor blade was also found 50 feet from the main wreckage.

The main rotor transmission was located imbedded into the ground near the top of the impact crater. The main rotor was still attached to the mast, which was still attached to the transmission. All four main rotor pitch links were attached. The yellow main rotor pitch change horn attaching bolts were sheared off. The lower portion of the main transmission sustained extensive thermal damage.

The tailboom was separated from the fuselage. The top left portion of the tailboom, forward of the horizontal stabilizer, exhibited a longitudinal tear, and there was also a longitudinal tear on the bottom of the tailboom which correlates with the top tear. The vertical stabilizer, with the tail rotor attached to it's mount, was separated from the tailboom and located near the tailboom. There is up bending on the top portion of the vertical stabilizer which attaches to the tailboom. One tail rotor blade had leading edge damage eight inches inboard from the end and it was bent outward.

The other tail rotor blade had minor leading edge damage. Both tail rotor blade trailing edges had separation. The tail rotor gearbox rotated freely in both direction. The long tail rotor drive shaft was bent, and the flex couplings were distorted and separated.

The Tandem Hydraulic Unit was located within the main wreckage, and it exhibited thermal and impact damage. An examination of the unit revealed the number one system was selected, and the number one hydraulic filter bypass button was extended.

Flight control continuity could not be established due to impact and thermal damage. The wreckage was inventoried and all major components were located within 50 feet of the main wreckage.

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**Narrative** (Continued)

Both engines were found next to the initial impact crater and exhibited extensive impact and thermal damage. The accessory gearboxes and fuel system components from both engines were completely consumed by fire. The engines were shipped to the engine manufacturer's facility in Indianapolis, Indiana, for further examination.

**MEDICAL AND PATHOLOGICAL INFORMATION**

An autopsy was performed by Korndorffer, W.E., M.D., of the Medical Examiner's Office for the County of Galveston, Texas. Toxicological findings were negative.

**FIRE**


A post impact fire destroyed the helicopter. No evidence of pre-impact fire was found during the investigation.


**TEST AND RESEARCH**


Both engines were examined by the NTSB at the manufacturer's facility on December 6-7, 1995. According to the Allison Engine representative, no pre-mishap discrepancies were observed. See enclosed report for examination details.

**ADDITIONAL DATA**

The helicopter wreckage was release to the owner's representative.

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|   |                                    | Occurrence Date: 10/26/1995            |                                      |                                    |              |
|   |                                    | Occurrence Type: Accident              |                                      |                                    |              |
| <b>Landing Facility/Approach Information</b>  |                                    |  |                                      |                                    |              |
| Airport Name  | Airport ID:                        | Airport Elevation<br>Ft. MSL           | Runway Used<br>0                     | Runway Length                      | Runway Width |
| Runway Surface Type:  |                                    |  |                                      |                                    |              |
| Runway Surface Condition:   |                                    |  |                                      |                                    |              |
| Approach/Arrival Flown:   |                                    |  |                                      |                                    |              |
| VFR Approach/Landing:   |                                    |  |                                      |                                    |              |
| <b>Aircraft Information</b>   |                                    |  |                                      |                                    |              |
| Aircraft Manufacturer<br>Mbb  |                                    | Model/Series<br>BO-105S /BO-105S       |                                      | Serial Number<br>597               |              |
| Airworthiness Certificate(s): Normal  |                                    |  |                                      |                                    |              |
| Landing Gear Type: Skid   |                                    |  |                                      |                                    |              |
| Amateur Built Acft? No  | Number of Seats: 6                 | Certified Max Gross Wt. 5291 LBS       |                                      | Number of Engines: 2               |              |
| Engine Type:<br>Turbo Shaft   | Engine Manufacturer:<br>Allison    | Model/Series:<br>250-C20B              |                                      | Rated Power:<br>420 HP             |              |
| - Aircraft Inspection Information   |                                    |  |                                      |                                    |              |
| Type of Last Inspection<br>Annual   | Date of Last Inspection<br>10/1995 | Time Since Last Inspection<br>26 Hours |                                      | Airframe Total Time<br>10848 Hours |              |
| - Emergency Locator Transmitter (ELT) Information   |                                    |  |                                      |                                    |              |
| ELT Installed?/Type Yes /   |                                    | ELT Operated? No                       | ELT Aided in Locating Accident Site? |                                    |              |
| <b>Owner/Operator Information</b>   |                                    |  |                                      |                                    |              |
| Registered Aircraft Owner<br><br>ASSOCIATED AIRCRAFT GROUP, INC   |                                    | Street Address<br>49 MIRY BROOK ROAD   |                                      |                                    |              |
|   |                                    | City<br>DANBURY                        | State<br>CT                          | Zip Code<br>06810                  |              |
| Operator of Aircraft<br><br>ASSOCIATED AIRCRAFT GROUP, INC  |                                    | Street Address<br>49 MIRY BROOK ROAD   |                                      |                                    |              |
|   |                                    | City<br>DANBURY                        | State<br>CT                          | Zip Code<br>06810                  |              |
| Operator Does Business As:  |                                    |  | Operator Designator Code: AYP A      |                                    |              |
| - Type of U.S. Certificate(s) Held:   |                                    |  |                                      |                                    |              |
| Air Carrier Operating Certificate(s): On-demand Air Taxi  |                                    |  |                                      |                                    |              |
| Operating Certificate:  |                                    |  | Operator Certificate:                |                                    |              |
| Regulation Flight Conducted Under: Part 91: General Aviation  |                                    |  |                                      |                                    |              |
| Type of Flight Operation Conducted: Positioning   |                                    |  |                                      |                                    |              |
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|   |                      | Occurrence Date: 10/26/1995                          |                        |                                    |                          |
|   |                      | Occurrence Type: Accident                            |                        |                                    |                          |
| <b>First Pilot Information</b>  |                      |  |                        |                                    |                          |
| Name<br>On File   |                      | City<br>On File                                      |                        | State<br>On File                   | Date of Birth<br>On File |
|   |                      |  |                        |                                    | Age<br>42                |
| Sex: M  | Seat Occupied: Right | Occupational Pilot? Civilian Pilot                   |                        | Certificate Number: On File        |                          |
| Certificate(s): Commercial  |                      |  |                        |                                    |                          |
| Airplane Rating(s): None  |                      |  |                        |                                    |                          |
| Rotorcraft/Glider/LTA: Helicopter   |                      |  |                        |                                    |                          |
| Instrument Rating(s): Helicopter  |                      |  |                        |                                    |                          |
| Instructor Rating(s): None  |                      |  |                        |                                    |                          |
| Current Biennial Flight Review?   |                      |  |                        |                                    |                          |
| Medical Cert.: Class 2  |                      | Medical Cert. Status: Valid Medical--w/ waivers/lim. |                        | Date of Last Medical Exam: 03/1995 |                          |
|   |                      |  |                        |                                    |                          |
| - Flight Time Matrix  | All A/C              | This Make and Model                                  | Airplane Single Engine | Airplane Multi-Engine              | Night                    |
|   |                      |  |                        |                                    |                          |
| Total Time  | 4378                 | 11   |                        |                                    | 350                      |
| Pilot In Command(PIC)   | 4378                 | 11   |                        |                                    | 350                      |
| Instructor  | 2167                 |  |                        |                                    |                          |
| Instruction Received  |                      |  |                        |                                    |                          |
| Last 90 Days  | 97                   | 11   |                        |                                    | 11                       |
| Last 30 Days  | 33                   | 11   |                        |                                    | 7                        |
| Last 24 Hours   | 5                    | 5  |                        |                                    | 5                        |
| Seatbelt Used? Yes  |                      | Shoulder Harness Used? Yes                           |                        | Toxicology Performed? Yes          |                          |
|   |                      |  |                        | Second Pilot? No                   |                          |
| <b>Flight Plan/Itinerary</b>  |                      |  |                        |                                    |                          |
| Type of Flight Plan Filed: None   |                      |  |                        |                                    |                          |
| Departure Point   |                      | State  | Airport Identifier     | Departure Time                     | Time Zone                |
| GALVESTON   |                      | TX   | GLS                    | 0130                               | CDT                      |
| Destination   |                      | State  | Airport Identifier     |                                    |                          |
| HOUSTN  |                      | TX   | HOU                    |                                    |                          |
| Type of Clearance: None   |                      |  |                        |                                    |                          |
| Type of Airspace: Class G   |                      |  |                        |                                    |                          |
| <b>Weather Information</b>  |                      |  |                        |                                    |                          |
| Source of Wx Information:   |                      |  |                        |                                    |                          |
| No record of briefing   |                      |  |                        |                                    |                          |
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|  |  | Occurrence Type: Accident   |  |


|                                     |                       |  |               |                                 |                              |
|-------------------------------------|-----------------------|--|---------------|---------------------------------|------------------------------|
| <b>Weather Information</b>          |                       |  |               |                                 |                              |
| WOF ID                              | Observation Time      | Time Zone  | WOF Elevation | WOF Distance From Accident Site | Direction From Accident Site |
| EFD                                 | 0155                  | CDT  | 34 Ft. MSL    | 9 NM                            | 350 Deg. Mag.                |
| Sky/Lowest Cloud Condition: Unknown |                       |  | 0 Ft. AGL     | Condition of Light: Night/Dark  |                              |
| Lowest Ceiling: Broken              |                       | 700 Ft. AGL  |               | Visibility: 8 SM                | Altimeter: 29.00 "Hg         |
| Temperature: 22 °C                  | Dew Point: 22 °C      | Weather Conditions at Accident Site: Instrument Conditions |               |                                 |                              |
| Wind Direction: 120                 | Wind Speed: 5         | Wind Gusts:  |               |                                 |                              |
| Visibility (RVR): 0 Ft.             | Visibility (RVV) 0 SM |  |               |                                 |                              |
| Precip and/or Obscuration:          |                       |  |               |                                 |                              |

|                             |  |                       |  |                          |  |
|-----------------------------|--|-----------------------|--|--------------------------|--|
| <b>Accident Information</b> |  |                       |  |                          |  |
| Aircraft Damage: Destroyed  |  | Aircraft Fire: Ground |  | Aircraft Explosion: None |  |

|                         |       |         |       |      |       |
|-------------------------|-------|---------|-------|------|-------|
| - Injury Summary Matrix | Fatal | Serious | Minor | None | TOTAL |
| First Pilot             | 1     |         |       |      | 1     |
| Second Pilot            |       |         |       |      |       |
| Student Pilot           |       |         |       |      |       |
| Flight Instructor       |       |         |       |      |       |
| Check Pilot             |       |         |       |      |       |
| Flight Engineer         |       |         |       |      |       |
| Cabin Attendants        |       |         |       |      |       |
| Other Crew              |       |         |       |      |       |
| Passengers              | 1     |         |       |      | 1     |
| - TOTAL ABOARD -        | 2     |         |       |      | 2     |
| Other Ground            | 0     | 0       | 0     |      | 0     |
| - GRAND TOTAL -         | 2     | 0       | 0     |      | 2     |

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| Administrative Information   |                             |  |
| Investigator-In-Charge (IIC)<br>DOUGLAS D. WIGINGTON   |                             |  |
| Additional Persons Participating in This Accident/Incident Investigation:<br><br>JAMES M HALL<br>HOUSTON, TX<br><br>JEFFREY W EDWARDS<br>INDIANAPOLIS, IN<br><br>DEL E LIVINGSTON<br>GRAND PRAIRIE, TX |                             |  |
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