



# National Transportation Safety Board Aviation Accident Final Report

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|-------------------------|----------------------|-------------------------|------------|
| <b>Location:</b>        | VALDEZ, AK           | <b>Accident Number:</b> | ANC95FA086 |
| <b>Date &amp; Time:</b> | 06/25/1995, 1557 AKD | <b>Registration:</b>    | N62851     |
| <b>Aircraft:</b>        | PIPER PA-31          | <b>Aircraft Damage:</b> | Destroyed  |
| <b>Defining Event:</b>  |                      | <b>Injuries:</b>        | 4 Fatal    |

**Flight Conducted Under:** Part 91: General Aviation - Personal

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## Analysis

THE PILOT RECEIVED AN INSTRUMENT APPROACH CLEARANCE TO A NONTOWER AIRPORT SURROUNDED BY MOUNTAINOUS TERRAIN. WEATHER CONDITIONS ON THE GROUND WERE VFR, AND THE PILOT DESCENDED THROUGH AN OVERCAST. THE APPROACH ENVIRONMENT WAS NOT SERVICED BY ANY ATC RADAR FACILITY. THE PILOT DECLARED A MISSED APPROACH TO THE APPROPRIATE FAA FLIGHT SERVICE STATION, AND WAS ADVISED TO CONTACT ARTCC. ARTCC NEVER RECEIVED A RADIO TRANSMISSION FROM THE PILOT. THE AIRPLANE WRECKAGE WAS LOCATED APPROXIMATELY 6 MILES BEYOND THE AIRPORT, SLIGHTLY TO THE NORTH OF THE EXTENDED RUNWAY CENTERLINE. MISSED APPROACH PROCEDURES WERE FOR AN IMMEDIATE CLIMB, AND THEN A CLIMBING RIGHT TURN TO REVERSE DIRECTION AWAY FROM THE AIRPORT. THE MISSED APPROACH SEGMENT BEGAN 5.2 DME MILES PRIOR TO THE AIRPORT. MINIMUM DESCENT ALTITUDE (MDA) FOR THE APPROACH WAS 4320' MSL (4200' ABOVE THE RUNWAY ELEVATION); IMPACT WITH MOUNTAINOUS TERRAIN OCCURRED AT ABOUT THE SAME ALTITUDE.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S FAILURE TO FOLLOW THE PUBLISHED IFR (MISSED APPROACH) PROCEDURE AND ASSURE ADEQUATE ALTITUDE/CLEARANCE FROM MOUNTAINOUS TERRAIN.

## Findings

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Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: MISSED APPROACH (IFR)

### Findings

1. WEATHER CONDITION - CLOUDS
2. WEATHER CONDITION - LOW CEILING
3. MISSED APPROACH - INITIATED - PILOT IN COMMAND
4. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
5. TERRAIN CONDITION - MOUNTAINOUS/HILLY
6. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

## Factual Information

### HISTORY OF FLIGHT

On June 25, 1995, about 1557 Alaska daylight time, a Piper PA-31 airplane, N62851, was destroyed when it collided with mountainous terrain approximately 6 miles east of the Valdez Airport, Valdez, Alaska. The private pilot/airplane owner and the three passengers aboard were fatally injured. The personal flight departed Homer, Alaska, about 1445, and a VFR flight plan was filed. The pilot later received an instrument approach clearance for the Localizer Directional Aid/Distance Measuring Equipment-C (LDA-DME C) approach to the Valdez Airport.

The pilot of the accident airplane declared a missed approach to the FAA Juneau Flight Service Station (FSS) at 1555, and was instructed by a Juneau FSS specialist to contact Anchorage Air Route Traffic Control Center (ARTCC). Anchorage ARTCC did not receive a radio transmission from the accident airplane.

The initial portion of the published procedure for the missed approach at Valdez calls for an immediate climb, then a right climbing turn to 7,000 feet msl, on the 227 degree bearing of the Mineral Creek non directional beacon. The instrument approach environment is in a mountainous area which is not serviced by any air traffic control facility radar.

The airplane's wreckage was discovered on June 27 by a Valdez based helicopter operator who was actively looking for the crash site. Earlier search efforts were hampered by reduced visibility and low clouds. The wreckage was located about the 4,300' level of a mountainside adjacent to East Peak. East Peak lies approximately 10 degrees north of the extended centerline of the departure end of runway 06 at Valdez Airport, or approximately 050 degrees magnetic from the airport. The geographic coordinates of the accident site are: 61.09.104 North, 146.06.264 West.

### PERSONNEL INFORMATION

The pilot-in-command of the airplane was Marvin J. Thiel. Mr. Thiel's pilot log book(s) were not located at the accident scene, nor were family members able to locate them. Mr. Thiel's total flight experience is estimated to be approximately 4,800 hours. This figure was obtained by reviewing FAA Medical records and the NTSB's Investigator-in-Charge's estimate of flight time accrued since Mr. Thiel's last FAA flight physical on September 16, 1994.

### AIRCRAFT INFORMATION

N62851 was a Piper PA-31 twin engine airplane which had been modified by Colemill Industries to accept larger than original factory standard engines, and "Q-Tip" propellers (Supplemental Type Certificate SA97050). The airplane had also been modified with vortex generators mounted on the wings and empennage, via Supplemental Type Certificate SA00037SE, issued to Boundary Layer Research.

### METEOROLOGICAL INFORMATION

Visual meteorological conditions prevailed at Valdez Airport, which is 120 feet msl. At 1545 local time, the cloud conditions were 2,500 scattered, with an estimated overcast ceiling at 5,000 feet. Visibility was 10 miles in light rain. Wind velocity and direction were 11 knots at 240 degrees.

Just prior to beginning the LDA-DME C approach, the pilot reported he was on top of the clouds at 9,500 feet msl, "...but the tops are only five, six hundred feet below us."

#### AIDS TO NAVIGATION

The Valdez Airport is a nontower field serviced by a single published instrument approach, the LDA DME-C. The LDA course line is offset five degrees south of the runway centerline of 054 degrees to provide obstruction clearance from steeply rising terrain. The minimum descent altitude for the LDA DME-C approach is 4,320 feet msl. Visibility minima is 5 statute miles. The missed approach point is 5.2 DME miles on the Valdez LDA. Missed approach procedures are (modified for readability): Climb via the Valdez LDA to 3.7 DME miles, then make a climbing right turn to 7,000 feet msl via the 227 degree bearing from the Mineral Creek non directional beacon to 11 DME on the Valdez LDA, and then via Valdez LDA southwest course to Johnstone Point VOR Radial 319, then inbound via Johnstone VOR Radial 319 to MENTHE Fix at 20 DME, and hold.

#### COMMUNICATIONS

According to the FAA, the pilot initially communicated with the FAA Anchorage ARTCC at 1534 and requested an IFR clearance to descend to Valdez due to overcast sky conditions. The pilot gave his position as sixty miles northwest of Valdez, and commented: "...ah we thought the weather was supposed to be broken here at Valdez, but its's overcast. Can you get us the Valdez weather, looks like we will need an IFR to descend."

Anchorage ARTCC issued the current Valdez weather and further communication with the pilot disclosed that the airplane's position was actually southwest of Valdez. At 1539:52, the FAA controller discussed giving radar vectors to the "ILS" (instrument landing system; Valdez does not have an ILS approach available). Additional communications from the FAA controller refer to vectors to the localizer, and then, at 1545:10, the FAA controller radios: "Navajo six two eight five one, show you intercepting the localizer now." The pilot acknowledges the transmission, and at 1545:16, the FAA controller clears the pilot for the Valdez approach: "Navajo eight five one maintain at or above niner thousand five hundred until established on a published portion of the approach, cleared for the LDA DME approach to Valdez. Valdez altimeter last reported, three zero three three. Radar service terminated, contact radio for advisories." The pilot responded: "ah, that's affirmative, eight five one."

The next recorded communication from the pilot is at 1555:31, when he calls Juneau Radio (Juneau Flight Service Station), and declares a missed approach. The pilot is instructed to contact Anchorage ARTCC on frequency 119.3. The pilot acknowledged this transmission. This was the last reported contact with any FAA facility.

At 1545, Juneau FSS passed the missed approach information for N62851 to Anchorage ARTCC. According to an FAA Anchorage Region Air Traffic Control Evaluation Specialist, Anchorage ARTCC misconstrued the missed approach information to mean that N62851 had arrived at Valdez. Subsequently, an IFR clearance was issued to another airplane, ERA flight number 8507. Anchorage ARTCC's initial contact with the ERA flight was at 1507:49, as the flight was climbing through 3,300' msl for 14,000' msl.

About 1630, Anchorage ARTCC was advised by Juneau FSS that there has been no further contact with N62851. Anchorage ARTCC attempts to contact N62851 at 1631 without success.

#### WRECKAGE AND IMPACT INFORMATION

An on-site investigation was conducted by the NTSB on June 27, 1995. The wreckage was strewn down a steeply pitched mountain side near East Peak. The first observed impact point was approximately 4,300' msl, on a near vertical portion of the mountain. The majority of the upper two-thirds of the mountain was snow covered.

The airframe was severely fragmented. The majority of the wreckage, inclusive of portions of the fuselage, wings, empennage and engines, were located about the 4,100' msl. All major components of the airplane were located in the debris path on the slope. The engines were separated from the airframe and partially fragmented. Propellers from both engines had separated and were severely twisted, with extensive gouges and abrasions visible on the leading edges and chord-wise span of the propeller faces. Both propeller mounting flanges, attached to their respective engines crankshaft ends, were distorted and smeared. The propeller's mounting bolts were all elongated and sheared. A control continuity check of the flight controls could not be performed due to the instability and fragmentation of the wreckage. The upper most portions of the wreckage could not be reached by the NTSB investigator due to the steep slope and hazardous snow conditions. The highest wreckage segments were reached by a mountaineering team, and were reconnoitered by the NTSB investigator in an Alaska State Trooper helicopter.

#### MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination was conducted on June 29 by the State of Alaska's Deputy Chief Medical Examiner, Norman H. Thompson, 5500 East Tudor Road, Anchorage, Alaska.

The toxicological examination disclosed a blood alcohol content of 82 mg/dl. The pathologists commented in his report: "Toxicology reveals the presence of a small amount of ethanol...This ethanol level is consistent with either postmortem production of ethanol by microscopic organisms or premortem consumption of alcohol." A telephone discussion on January 4, 1996, with the pathologist who examined the pilot, disclosed that he feels the ethanol production was "most likely" attributable to postmortem production.

The toxicological findings are an integral portion of the pathologist's report, and therefore have not been appended to this report.

#### TESTS AND RESEARCH

A Trimble Global Positioning Receiver (GPS), a King KX-155 navigation/communication radio, a King KNS-80 Navigation System, and a King KMA-24 Marker Beacon Receiver, were removed from the wreckage and shipped to their respective manufacturer's to await inspection under the oversight of FAA electronics inspectors. All of the radios exhibited extensive external damage. No other radios were recovered from the crash site, although airplane records indicate there was an additional navigation/communication radio.

The Trimble GPS was too badly damaged to yield any navigation information.

The King KX-155 radio was too badly damaged to accept power. The unit's erasable programmable read only memory (EPROM), was desoldered from the unit and powered up. It displayed the following:

Active Communication Frequency: 122.20 Standby Communication Frequency: 118.80 Active Navigation Frequency: 109.30 Standby Navigation Frequency: 111.30

The King KNS-80 was too badly damaged for testing.

Additional information regarding the testing of the King Marker Beacon receiver and the preceding King radio components is contained in the attached Bendix/King report.

The navigational aids supporting the LDA-DME-C instrument approach at Valdez were ground and air checked on June 26 and June 27 by FAA maintenance personnel, and found to be within required operational parameters.

#### ADDITIONAL INFORMATION

The wreckage was removed from the accident site and temporarily stored at the Valdez Airport. The wreckage was reexamined on July 11 by NTSB investigator Jeffrey Guzzetti, of the Seattle NTSB. A copy of his examination notes are appended.

The wreckage was released to Mr. Ed Stewart, Claims Manager for USAIG insurance, Seattle, Washington.

#### Pilot Information

|                                  |  |  |            |
|----------------------------------|--|--|------------|
| <b>Certificate:</b>              | Private                                | <b>Age:</b>                              | 57, Male   |
| <b>Airplane Rating(s):</b>       | Multi-engine Land; Single-engine Land  | <b>Seat Occupied:</b>                    | Left       |
| <b>Other Aircraft Rating(s):</b> | None                                   | <b>Restraint Used:</b>                   |            |
| <b>Instrument Rating(s):</b>     | Airplane                               | <b>Second Pilot Present:</b>             | No         |
| <b>Instructor Rating(s):</b>     | None                                   | <b>Toxicology Performed:</b>             | Yes        |
| <b>Medical Certification:</b>    | Class 3 Valid Medical--w/ waivers/lim. | <b>Last FAA Medical Exam:</b>            | 09/16/1994 |
| <b>Occupational Pilot:</b>       |  | <b>Last Flight Review or Equivalent:</b> |            |
| <b>Flight Time:</b>              | 4800 hours (Total, all aircraft)       |  |            |

## Aircraft and Owner/Operator Information

|                               |  |                                |                 |
|-------------------------------|--|--------------------------------|-----------------|
| Aircraft Make:                | PIPER  | Registration:                  | N62851          |
| Model/Series:                 | PA-31 PA-31                                      | Aircraft Category:             | Airplane        |
| Year of Manufacture:          |  | Amateur Built:                 | No              |
| Airworthiness Certificate:    | Normal   | Serial Number:                 | 31-7612085      |
| Landing Gear Type:            | Retractable - Tricycle                           | Seats:                         | 9               |
| Date/Type of Last Inspection: | 06/12/1995, Annual                               | Certified Max Gross Wt.:       | 6500 lbs        |
| Time Since Last Inspection:   |  | Engines:                       | 2 Reciprocating |
| Airframe Total Time:          |  | Engine Manufacturer:           | LYCOMING        |
| ELT:                          | Installed, activated, aided in locating accident | Engine Model/Series:           | TIO-540-J2BD    |
| Registered Owner:             | MARVIN J. THIEL                                  | Rated Power:                   | 350 hp          |
| Operator:                     | MARVIN J. THIEL                                  | Operating Certificate(s) Held: | None            |

## Meteorological Information and Flight Plan

|                                  |                       |                                      |                  |
|----------------------------------|-----------------------|--------------------------------------|------------------|
| Conditions at Accident Site:     | Instrument Conditions | Condition of Light:                  | Day              |
| Observation Facility, Elevation: | VDZ, 120 ft msl       | Distance from Accident Site:         | 6 Nautical Miles |
| Observation Time:                | 2345 ADT              | Direction from Accident Site:        | 230°             |
| Lowest Cloud Condition:          | Unknown / 0 ft agl    | Visibility                           | 0 Miles          |
| Lowest Ceiling:                  | Obscured / 0 ft agl   | Visibility (RVR):                    | 0 ft             |
| Wind Speed/Gusts:                | 11 knots /            | Turbulence Type Forecast/Actual:     | /                |
| Wind Direction:                  | 240°                  | Turbulence Severity Forecast/Actual: | /                |
| Altimeter Setting:               | 30 inches Hg          | Temperature/Dew Point:               | 11° C / 7° C     |
| Precipitation and Obscuration:   |                       |                                      |                  |
| Departure Point:                 | HOMER, AK (HOM)       | Type of Flight Plan Filed:           | IFR              |
| Destination:                     | (VDZ)                 | Type of Clearance:                   | IFR              |
| Departure Time:                  | 1445 ADT              | Type of Airspace:                    | Class E          |

## Wreckage and Impact Information

|                     |         |                      |           |
|---------------------|---------|----------------------|-----------|
| Crew Injuries:      | 1 Fatal | Aircraft Damage:     | Destroyed |
| Passenger Injuries: | 3 Fatal | Aircraft Fire:       | None      |
| Ground Injuries:    | N/A     | Aircraft Explosion:  | None      |
| Total Injuries:     | 4 Fatal | Latitude, Longitude: |           |

## Administrative Information

**Investigator In Charge (IIC):** JAMES D LABELLE **Report Date:** 02/08/1996

**Additional Participating Persons:** MARK WILSON; ANCHORAGE, AK  
GERALD R JAMES; DALLAS, TX  
PHIL GOETTEL; OLATHE, KS  
JEFFREY GUZZETTI; SEATTLE, WA

**Publish Date:**

**Investigation Docket:** NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at [pubinq@ntsb.gov](mailto:pubinq@ntsb.gov), or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).