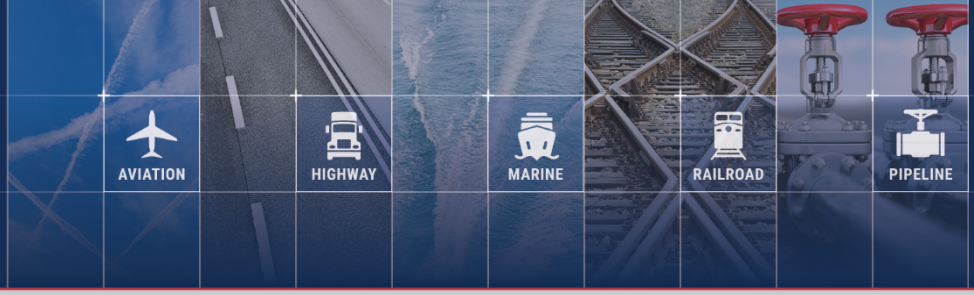

Aviation Investigation Final Report

Location:	BAY MINETTE, Alabama	**Accident Number:**	ATL96FA021
Date & Time:	December 13, 1995, 19:15 Local	**Registration:**	N3874H
Aircraft:	Mooney M20J	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation		

Analysis

About 23 miles from the destination airport, the pilot reported to approach control that the engine had lost power. He declared an emergency, and the controller issued radar vectors toward the Bay Minette Municipal Airport. However, the pilot was forced to make an off-airport landing at night. During the landing, the airplane collided with a grove of trees about 1.75 from the airport. Wreckage examination revealed that the alternate air door was out of its normally installed position, and had blocked airflow to the engine induction ram air inlet. On 5/10/92, the manufacturer had issued a service bulletin (SB), SB-M20-253, which provided for repair of the alternate air door. Recent maintenance had been performed on the induction air box assembly, but there was no record of SB compliance. After the accident, on 12/22/95, the FAA issued a priority airworthiness directive (AD), which addressed this problem.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: failure of the alternate air door, which resulted in blockage of air through the induction system. A factor relating to the accident was: failure to comply with Safety Bulletin SB-M20-253.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: CRUISE

Findings

1. (F) MAINTENANCE,SERVICE BULLETIN/LETTER - NOT COMPLIED WITH
2. (C) INDUCTION AIR CONTROL,ALTERNATE AIR/DOOR - FAILURE
3. (C) RAM/INDUCTION AIR - FLOW RESTRICTED

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING

Findings
4. (F) LIGHT CONDITION - DARK NIGHT
5. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On December 13, 1995, at 1915 central standard time, a Mooney M20J, N3874H, collided with trees while attempting an emergency landing to the Bay Minette Municipal Airport in Bay Minette, Alabama. The business flight operated under the provisions of Title 14 CFR Part 91 with a flight plan filed. Visual weather conditions prevailed at the time of the accident. The airplane received substantial damage; the pilot and passenger were fatally injured. The flight departed Sparta, Tennessee, at 1620 hours.

At 1610, the pilot of N3874H telephoned Nashville Automated Flight Service Station and requested a preflight briefing from Sparta, Tennessee to Fairhope, Alabama. After the preflight briefing, the pilot filed an instrument flight plan to Fairhope. At 1622, the pilot reported off of Sparta, and established radio contact with Memphis Center.

A review of air traffic data disclosed that the flight had received routine handling until the flight was about 23 miles northeast of Fairhope, at 6000 feet. At 1914, the pilot reported to Mobile Approach Control that he had an engine problem, and declared an emergency. After the pilot declared an emergency, the approach controller instructed the pilot to turn right to a 265 degree magnetic heading for vectors to Bay Minette Municipal Airport. While maneuvering for the emergency landing, the airplane collided with a stand of trees approximately 1.75 miles east of the airport.

PERSONNEL INFORMATION

Information on the pilot is included in this report on page 3 of the factual report under the data field labeled "First Pilot Information".

AIRCRAFT INFORMATION

Information on the aircraft is contained in this report on page 2 of the factual report under the data field labeled "Aircraft Information".

METEOROLOGICAL INFORMATION

Visual weather conditions prevailed at the time of the accident. Weather information is contained in this report on page 3 of the factual report under the data field labeled "Weather Information".

WRECKAGE AND IMPACT INFORMATION

Examination of the accident site disclosed that the tops of several trees were damaged and the aircraft came to rest on the ground in a nose low attitude. Debris from the airplane was scattered over an area 125 feet long and 45 feet wide; the wreckage was oriented on a 320 degree magnetic heading. The accident site examination also disclosed that the outboard wing panels were torn from the airframe, and they were located southeast of the main wreckage. All airframe components were recovered from the accident site, and the examination of these components failed to disclose a mechanical malfunction or failure.

The engine and propeller assemblies remained attached to the airframe. The engine assembly was removed from the airframe and mounted on a test stand. An examination of the engine assembly failed to disclose an obvious mechanical problem. During the final phase of the functional test preparation, it was discovered that the induction air box alternate air door was out of it's normally installed position. The alternate air door was positioned over the ram air induction opening. None of the hardware used to secure the alternate air door to the induction assembly was recovered for examination.

During the initial engine run, the induction air box assembly was left in the post impact position; subsequently, the engine only developed partial power. Once the induction assembly was removed from the engine, the engine developed full power.

MEDICAL AND PATHOLOGICAL INFORMATION

On December 14, 1995, the postmortem examination on the pilot was conducted by Dr. James C.U. Downs at the Alabama Department Of Forensic Science in Mobile, Alabama. During the toxicological examinations 28.200 (ug/ml, ug/g) of acetaminophen (Tylenol) was detected in the urine sample.

ADDITIONAL INFORMATION

A search of service difficulty reports, service warranty, airworthiness directives, and service bulletins on the M20J induction system, revealed several occurrences which attributed the loss of engine power to the failure of the induction air box. The historical search also discovered that Mooney had issued a Service Bulletin (SB) SB-M20-253, dated 5/10/92 which provided a repair for the alternate air door. According to Mooney, the SB was issued after a report of an alternate air door lodged in the induction air duct, and restricted induction airflow to the engine. The SB changed the alternate air door plate and bolt configuration, thus reducing wear caused by engine vibration. A review of the aircraft maintenance log disclosed that recent maintenance had been performed on the induction air box assembly, but there was no record of SB compliance (see attached copy of extract from engine log). Subsequent to the findings developed during this investigation, the Federal Aviation Administration issued Priority Letter Airworthiness Directive, 95-26-16, dated December 22, 1995.

The aircraft wreckage was released to Mark Andrews, President of Sea Air Inc., in Orange

Beach, Alabama.

Pilot Information

Certificate:	Private	**Age:**	39,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	May 23, 1995
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	241 hours (Total, all aircraft), 19 hours (Total, this make and model), 196 hours (Pilot In Command, all aircraft), 28 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	**Registration:**	N3874H
Model/Series:	M20J M20J	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-0969
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	November 28, 1995 100 hour	**Certified Max Gross Wt.:**	2746 lbs
Time Since Last Inspection:	9 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2928 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-360-A3B6D
Registered Owner:	SEA AIR INC.	**Rated Power:**	200 Horsepower
Operator:	JAMES D. BROWER	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	MOB ,218 ft msl	**Distance from Accident Site:**	30 Nautical Miles
Observation Time:	19:21 Local	**Direction from Accident Site:**	220°
Lowest Cloud Condition:	Scattered / 2300 ft AGL	**Visibility**	7 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	130°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	16°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SPARTA , TN (SRB)	**Type of Flight Plan Filed:**	IFR
Destination:	FAIRHOPE , AL (4R4)	**Type of Clearance:**	IFR
Departure Time:	16:20 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	BAY MINETTE 1R8	**Runway Surface Type:**	Asphalt
Airport Elevation:	248 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	26	**IFR Approach:**	None
Runway Length/Width:	4280 ft / 80 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	30.880739,-87.770957(est)

Administrative Information

Investigator In Charge (IIC):	Powell, Phillip
Additional Participating Persons:	GARY SOLDWISCH; BIRMINGHAM , AL
Original Publish Date:	October 4, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=3638