National Transportation Safety Board
Aviation Accident Final Report

Location:	SANTA ANA, CA	**Accident Number:**	LAX94FA073
Date & Time:	12/15/1993, 1733 PST	**Registration:**	N309CK
Aircraft:	Israel Aircraft Industries 1124A	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	5 Fatal
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

A BEECH LINER, BOEING 757 & ISRAEL WESTWIND (WW) WERE VECTORED FOR LANDINGS ON RWY 19R. THE 757 & WW WERE SEQUENCED FOR VISUAL APCHS BEHIND THE BEECH. BEFORE BEING CLEARED FOR VISUAL APCH, THE WW WAS CLOSING 3.5 MI FROM THE 757 ON A CONVERGING COURSE. THE 757 & WW CREWS WERE TOLD TO SLOW TO 150 KTS. THE 757 SLOWED BELOW 150 KTS & WAS HIGH ON FINAL APPROACH WITH A 5.6 DEG DESCENT. THE WW CONTINUED TO CONVERGE TO ABOUT 2.1 MI BEHIND THE 757 ON A 3 DEG APCH. ATC DID NOT SPECIFICALLY ADVISE, AND WAS NOT REQUIRED BY ATC HANDBOOK TO ADVISE, THE WW PILOTS THAT THEY WERE BEHIND A BOEING 757. CAPT DISCUSSED POSSIBLE WAKE TURBULENCE, FLEW ILS 1 DOT HIGH, NOTED CLOSENESS TO THE 757 & INDICATED THERE SHOULD BE NO PROBLEM. WHILE DESCENDING THRU APRX 1100 FT MSL, THE WW ENCOUNTERED WAKE TURBULENCE FROM THE 757, ROLLED INTO A STEEP DESCENT & CRASHED. THE CREW LACKED SPECIFIC WAKE TURBULENCE TRAINING. CHLORPHENIRAMINE (COMMON OVER-THE-COUNTER ANTI-HISTAMINE; NOT APPROVED FOR FLYING) DETECTED IN PILOT'S LUNG TISSUE (0.094 UG/ML). (SEE SPCL STUDY NTSB/SIR-94/01)

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT-IN-COMMAND'S FAILURE TO MAINTAIN ADEQUATE SEPARATION BEHIND THE BOEING 757 AND/OR REMAIN ABOVE ITS FLIGHT PATH DURING THE APPROACH, WHICH RESULTED IN AN ENCOUNTER WITH WAKE VORTICES FROM THE 757. FACTORS RELATED TO THE ACCIDENT WERE: AN INADEQUACY IN THE ATC PROCEDURE RELATED TO VISUAL APPROACHES AND VFR OPERATIONS BEHIND HEAVIER AIRPLANES, AND THE RESULTANT LACK OF INFORMATION TO THE WESTWIND PILOTS FOR THEM TO DETERMINE THE RELATIVE FLIGHT PATH OF THEIR AIRPLANE WITH RESPECT TO THE BOEING 757'S FLIGHT PATH.

Findings

Occurrence #1: VORTEX TURBULENCE ENCOUNTERED
Phase of Operation: APPROACH

Findings
1. TRAFFIC ADVISORY - PERFORMED - ATC PERSONNEL(DEP/APCH)
2. (F) PROCEDURE INADEQUATE - FAA(OTHER/ORGANIZATION)
3. (C) VISUAL SEPARATION - INADEQUATE - PILOT IN COMMAND
4. (C) WAKE TURBULENCE - ENCOUNTERED - PILOT IN COMMAND
5. INADEQUATE TRAINING
6. (F) INFORMATION INSUFFICIENT
7. USE OF INAPPROPRIATE MEDICATION/DRUG - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
8. TERRAIN CONDITION - OPEN FIELD

Factual Information

History of the Flight

On December 15, 1993, at 1733 hours Pacific standard time, an Israel Aircraft Industries 1124A, N309CK, experienced an in-flight loss of control and crashed about 3.5 nautical miles north of John Wayne Airport (SNA), Santa Ana, California. The airplane was on the final approach course for runway 19R. The pilot initially obtained an instrument flight rules (IFR) clearance, but was executing a visual approach at the time of the accident. The flight was an on-demand air taxi passenger operation under the provisions of Title 14 CFR Part 135 and was completing the final leg of a multileg passenger revenue operation.

The airplane, registered to Management Activities, Inc., Long Beach, California, and operated by Martin Aviation, Santa Ana, California, was destroyed by impact and the resulting postimpact fire. Both flight crewmembers and three passengers sustained fatal injuries; there were no ground injuries. Visual meteorological conditions prevailed. The Federal Aviation Administration's (FAA) various air traffic control tower records disclosed the airplane departed Long Beach Airport, Long Beach, California, on December 15, 1993, at 0700 hours to begin the multileg operation. The last flight leg departed Brackett Airport, La Verne, California, at 1713 hours.

National Transportation Safety Board investigators reviewed the recorded radio communications between N309CK, Coast terminal radar approach control (TRACON), and the John Wayne Airport air traffic control tower (ATCT). The review revealed that before departing Brackett Airport the flightcrew requested and received a local tower en route IFR clearance to John Wayne Airport.

After departing Brackett Airport, the flight contacted the FAA, Ontario [California] TRACON and received radar vectors toward John Wayne Airport. At 1728 hours, the Ontario TRACON sector controller instructed the flight to contact Coast TRACON.

According to the cockpit voice recorder (CVR), at 1727:41 hours, the first officer received the automated terminal information service (ATIS) "zulu." [The times noted for the CVR information differ from the FAA ATC communications transcripts; the CVR information was adjusted in this report to match the ATC transcripts.] At 1728:34 hours, the flight contacted the Coast TRACON Tustin Radar sector controller and reported "...climbing to four thousand..." [feet - all altitudes in this report are mean sea level altitudes]. The sector controller instructed the flight to reduce its speed to 170 knots; the flight's first officer acknowledged the clearance. The cockpit voice recorder established that the first officer made all the transmissions to the sector controller.

The sector controller had previously instructed a preceding airplane, also landing at John Wayne Airport, to reduce its speed to 170 knots. This aircraft was United Airlines flight 103 (UAL 103), a Boeing 757-200. The Tustin Radar computer data readout (CDR) showed that N309CK was at 3,700 feet.

At 1729:09 hours, the first officer contacted Martin Aviation and informed the dispatcher that the flight would be landing within ten minutes and would need fuel. At 1730:05 hours, the sector controller instructed the flight to turn to a 100-degree heading (all headings/bearings in this report are oriented toward magnetic north). He then stated, "westwind nine charlie kilo [is] following a united boeing jet on base [leg at] two o'clock four miles southeast bound [at]

four thousand [feet] descending." The first officer responded, "in sight charlie kilo."

At 1730:12 hours, the sector controller instructed N309CK to "...follow that traffic cleared visual approach runway one niner right reduce speed to follow he's [UAL 103] slowing through a hundred and seventy [knots]." The first officer acknowledged the clearance and the traffic [UAL 103]. The sector controller then instructed UAL 103, "...cleared visual approach runway one niner right reduce speed to one five zero and contact the tower...." UAL 103 responded that the flight was below 150 knots. The CDR showed that N309CK was at 3,900 feet, and about 3.8 nautical miles to the left (north) of UAL 103 which was at 3,800 feet.

At 1730:26 hours, the first officer then told the captain "...eh he's pretty close...." The captain responded, "...okay I'm ah lets go flaps twelve." The CDR showed that at this time N309CK was at 3,900 feet and about 3.3 nautical miles to the left (north) of UAL 103 which was now about 3,700 feet.

The first officer then pointed out UAL 103 to the captain. The captain responded, "...I got him - okay we can do it...no problem." At 1730:42 hours, the sector controller advised N309CK that "...traffic you're following is at a hundred and fifty knots you can s-turn as necessary to follow that traffic contact john wayne tower...." At 1730:49 hours, the first officer responded, "ok we'll slow it up and do what we have to...."

Meanwhile, at 1730:47 hours, UAL 103 contacted the John Wayne ATCT local controller and reported "...turning final abeam lemon." At 1731:01 hours, N309CK contacted the local controller and reported, "...on a visual behind the ah i believe it's united ...." The CVR indicated a sound similar to the landing gear being lowered. The local controller responded, "westwind three zero nine charlie kilo john wayne tower number three behind the united he's indicating thirty knots slower." The first officer responded, "ok we're slowing ah three zero nine charlie kilo." The CDR now indicated that N309CK was at 3,700 feet and about 2.2 miles behind or north of UAL 103 which was about 3,100 feet.

There were no further communications between N309CK and the FAA air traffic control facility. The CVR showed that the flightcrew proceeded to complete the prelanding checklist and that the landing gear was fully extended. At 1731:43 hours, the captain told the first officer that he was going to slow the airplane to Vref (123 knots) and that he was going to descend the airplane at that speed.

The first officer then told the captain that UAL 103 was "...a little too high on the ah...." The captain responded, "...yeah we'll just sit here and slow down...." He also said, "...I'll slightly "s" [turn] back and forth...", and later said, "...we'll run this a dot high [fly the glide slope one dot above the three degree glide slope]...." The first officer responded, "...yeah we might still get a little wake turbulence there...." At 1732:31 hours, the first officer remarked, "I don't know looks kinda close." The captain responded, "yeah it's close but I think we'll be okay."

At this time, the CVR indicated that both pilots saw UAL 103, and the captain asked the first officer, "what are the surface winds." The first officer responded, "two hundred degrees at ah six knots."

At 1733:02 hours, the captain queried the first officer, "...and we got gear and full flaps...." The first officer responded, "yup yaw damper will complete it...."

At 1733:10 hours, the CVR indicated that the captain took a deep breath, which was followed by the first officer saying, "keep it goin' around keep it goin' around...." The CVR recording ended

at 1733:15 hours.

The last CDR radar target on N309CK was at 1733:07 hours. At this time, N309CK was at 1,100 feet, 2.1 nautical miles behind UAL 103.

Safety Board investigators interviewed several ground witnesses. The consensus of the witnesses was that while on final approach the airplane suddenly pitched downward, rolled 360 degrees about its longitudinal axis, and crashed. Two witnesses, both commercial pilots, reported seeing sparks/flames emanating from the airplane during the accident sequence. Other witnesses reported a strange whining sound emanating from the airplane.

Crew Information

Captain:

The captain was an employee of Management Activities, Inc., and was trained under the provisions of the operator's Title 14 Part 135 Air Taxi Certificate. According to the operator, the pilot always flew the airplane as the captain when the accident airplane was used in connection with the operator's air taxi operations. The operator would provide the second-in-command (SIC) during these operations.

The captain held an airline transport pilot certificate with airplane multiengine land, CE-500, HS-125, CL-600, and IA-Jet type ratings. The certificate was endorsed for commercial privileges with an airplane, single-engine land rating. He also held a first-class medical certificate dated December 3, 1993; the certificate contained a "must have corrective lenses" limitation endorsement.

Safety Board investigators did not obtain the captain's personal flight hours logbook. The flight hours reflected in this report were provided by the operator. According to the operator, the pilot accrued 8,227.5 total flight hours. The captain accrued 756 hours in the accident airplane make and model of which 700 hours were logged as pilot-in-command.

According to the captain's training records provided by the operator, the pilot satisfactorily completed a 6-month recurrent training flight on July 8, 1993, conducted by SimuFlite, Dallas-Fort Worth Airport, Texas, in a Westwind II simulator. On August 27, 1993, the pilot satisfactorily completed an annual recurrent training flight conducted by the operator in a Beech F-90, a turbopropeller driven airplane.

First Officer (F/O):

The F/O was an employee of the operator. The operator conducted all of his required training and recurrency flight tests. The training and flight tests were accomplished under the supervision of the FAA, Long Beach Flight Standards District Office.

The F/O held an airline transport pilot certificate with airplane multiengine land, CE-650, LR-Jet, and IA-Jet type ratings. The certificate was endorsed for commercial privileges with an airplane, single-engine land rating. He also held an unrestricted first-class medical certificate which was issued on September 3, 1993.

Safety Board investigators did not obtain the F/O's personal flight hours logbook. The flight hours reflected in this report were provided by the operator. According to the operator, the pilot accrued 5,447 total flight hours. The F/O accrued 136 hours in the accident airplane make and model of which 70 hours were logged as pilot-in-command.

According to the operator, the F/O was qualified as pilot-in-command in a Lear 35, Beech F-90, and the accident airplane make and model. A review of the F/O's flight training records revealed that the F/O received his last flight and ground recurrency training in a Lear 35A on August 15 and August 23, 1993, respectively. The F/O received his last transition/recurrent ground and flight training in the accident airplane on December 22, 1992.

Martin Aviation's Director of Operations told Safety Board investigators that the company's training syllabus does not include wake turbulence avoidance. The training syllabus does address windshear avoidance and other meteorological phenomenon. SimuFlite, Dallas-Fort Worth Airport, Texas, provided the Safety Board with the captain's flight training records. A review of the records revealed the captain's simulator and ground school training complied with the required training syllabus. Wake turbulence avoidance was not included; nor was it required.

Aircraft Information

The registered owner, Management Activities, Inc., maintained the airplane and provided the Safety Board with the airplane's maintenance records. Company maintenance personnel maintained the airplane in accordance with the manufacturer's inspection program as approved by the FAA, Long Beach Flight Standards District Office.

The maintenance personnel performed the last 150-hour inspection on June 10, 1993. At the time of the accident, the airplane accrued 3,027 hours (including the flights made on the day of the accident), which was 95 hours since the last inspection.

Communications

There were no reported communications difficulties between N309CK and any FAA air traffic control facility.

The Safety Board investigators from the Office of Research Engineering found the cockpit voice recorder (CVR) recording medium undamaged. The recording started at 1702:29 hours and continued uninterrupted until 1733:15 hours (as adjusted). A review of the recorded ground operations at Brackett Airport were reviewed and found to be routine and were not transcribed. Safety Board investigators made a transcript of the crew receiving their IFR clearance and their departure from Brackett Airport. The transcript continued from the flight's departure until the crash.

Radar Data

Radar data from various radar facilities were obtained and plotted. The flight profile radar track shows that at a point 7 nautical miles from the airport, N309CK's flight path was consistently below UAL 103. When N309CK was about 3.5 nautical miles from the airport, its flight path was about 400 feet below UAL 103's flight path and was about 2.1 miles in-trail. The glide path for N309CK and UAL 103 was 3 degrees and 5.6 degrees, respectively.

Wreckage and Impact Information

The airplane crashed in a vacant lot next to multiple surrounding buildings and was about 100 feet to the right of the John Wayne Airport runway 19R extended centerline. Ground scars and the wreckage examination showed that the airplane struck the ground in about a 45-degree nose-down, wings level attitude, with the nose of the airplane facing about 165 degrees. The airplane's flight path was about 80 degrees downward. Debris from the airplane's wreckage

was found scattered from the main impact crater outward to about 100 feet in a 30-degree arc tangential to the centerline of the airplane.

All of the airplane's major components and flight control surfaces were found at the main impact area. The cabin area was incinerated by the postimpact fire/explosion. A 6-foot section of the upper cabin area was found about 30 feet south of the main wreckage area.

Both wings separated from their respective wing-to-fuselage attach fittings and remained next to the fuselage.

Continuity of the flight control surfaces could not be determined due to impact and postimpact fire damage. The flight controls, however, remained connected at their respective attach points.

The empennage was found about 2 feet forward of the main wreckage. The horizontal/vertical stabilizer connecting rod bolt was missing, but the inner section of the eyebolts displayed gouging signatures. The stabilizer trim actuator was found extended 10.45 inches from the actuator body. According to the manufacturer, this extension corresponds to a minus 4.2-degree horizontal stabilizer trim setting or full nose-up.

Both flaps were damaged, but remained partially connected at their wing flap track assemblies. The flap motor actuators on the left and right wing were found extended 6.875 and 7 inches, respectively. According to the manufacturer, these measurements correspond to a 40-degree flap extension or flaps fully extended.

Both main landing gear actuators were found fully extended which corresponds to a landing gear-down position. The nose landing gear actuator was not found.

Both fuel tanks interconnect valves were found and examined. One valve was open and the other was closed. The closed valve is designed so that it could be manually closed; the other valve is electrically controlled and cannot be manually closed.

Both engines' shutoff valves were found in the open position. The upper fuselage auxiliary tank valve is the same type of valve as the engine fuel shutoff valves and was found in the closed position.

Fire

The Santa Ana Fire Department arrived at the accident site at 1743 hours. The battalion chief reported that fire personnel did not encounter any difficulties in extinguishing the fire. The fire was suppressed at 1758 hours.

Medical and Pathological Information

The Orange County Medical Examiner/Coroner's Office performed postmortem examinations on both pilots. The pathologist reported that neither pilot had any condition or disease which would have affected his capability to perform his duties.

The FAA, Civil Aeromedical Institute (CAMI), Oklahoma City, Oklahoma, conducted toxicological examinations on both pilots. The toxicologist reported that the first officer's examinations were negative for alcohol or drugs.

Toxicological analysis of tissue specimen taken from the pilot-in-command (PIC) showed that lung tissue contained 0.01 percent (11 mg/dl) ethanol and 0.094 ug/g (0.094 mg/kg) of chlorpheniramine. The toxicological report also noted that the specimen was putrefied (see

attachment). Analysis of kidney, gastric content, and body tissue was not carried out. A blood specimen was not available for analysis.

Background medical information on the PIC was not available to determine the reason for or the extent of his use of chlorpheniramine. However, the pilot made application for a First Class Airman Medical Certificate on June 1, 1993. On this application the pilot answered Item 17 {Do you Currently Use Any medication (Prescription or Nonprescription)?} no. In Item 18e under Medical History, he answered yes regarding a history of hay fever or allergy. As a result of the findings of chlorpheniramine, Safety Board investigators interviewed one of the captain's friends. The captain's friend told investigators that the captain was in perfect health, but had an unknown allergy.

The Guide for Aviation Medical Examiners prepared by the Office of Aviation Medicine of the Federal Aviation Administration states that; "Any airman who is undergoing continuous treatment with antihistaminic, antiviral, ataraxic, barbiturate, experimental, hypoglycemic, investigational, mood-ameliorating, motion sickness, narcotic, sedative, tranquilizer, or steroid drugs must be deferred certification unless the treatment has previously been cleared by FAA medical authority." It is not known how long the pilot used the antihistaminic drug, chlorpheniramine, or when he last used the drug. However, according to the above guidance and conversations with staff at Aviation Medicine, the use of this drug while flying is not permitted.

Tests and Research

Engine(s) (S/n P-77449 and P-77550) Disassembly Examination:

Both engines and their accessories were transported to the manufacturer's facility in Phoenix, Arizona, for disassembly and examination. The examination was conducted on March 10, 11, and 14, 1994, under the supervision of Mr. John Eller, Aviation Safety Inspector (Airworthiness), FAA, Scottsdale [Arizona] Flight Standards District Office. According to the engine manufacturer, "No preexisting conditions were found on either engine which would have prevented normal operation."

Aircraft Weight Categorization:

The FAA categorizes the various airplanes by its maximum gross takeoff weight. Airplanes weighing less than 12,500 pounds are categorized as light airplanes. Airplanes weighing between 12,500 pounds and 300,000 pounds are categorized large airplanes. Airplanes weighing greater than 300,000 pounds are categorized as heavy airplanes. The Westwind and Boeing 757 are categorized as large aircraft.

The FAA utilizes the airplane categories as a basis for their IFR separation standards. As of the date of the accident, the FAA separation standard between a large and heavy airplane is 5 nautical miles. The standard between large airplanes is 3 nautical miles.

The FAA Air Traffic Handbook 7110.65H, 7-10(a)(2), Change 1, Visual Separation states in part, "...The tower shall not provide visual separation between aircraft when wake turbulence separation is required or when the lead aircraft is a B-757...." Change 1 was to become effective January 6, 1994.

The National Business Aircraft Association (NBAA) provided the Safety Board with data reflecting fly-by and other engineering tests conducted by the FAA through independent investigators and by the British Civil Aviation Authority (CAA) in 1992. These data, some of

which was generated in 1991, showed several instances in which large turbine jets, i.e., Boeing 737, McDonnell-Douglas DC-8, and other corporate jet aircraft, encountered a loss of control when following Boeing 757 aircraft.

Wreckage Release

The wreckage was released to representatives of the owner on February 4, 1994.

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	**Age:**	46, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	**Last Medical Exam:**	12/03/1993
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	8228 hours (Total, all aircraft), 756 hours (Total, this make and model), 7400 hours (Pilot In Command, all aircraft), 84 hours (Last 90 days, all aircraft), 22 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Israel Aircraft Industries	**Registration:**	N309CK
Model/Series:	1124A 1124A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:		**Serial Number:**	350
Landing Gear Type:	Retractable -	**Seats:**	12
Date/Type of Last Inspection:	06/10/1993, Continuous Airworthiness	**Certified Max Gross Wt.:**	23000 lbs
Time Since Last Inspection:	95 Hours	**Engines:**	2 Turbo Fan
Airframe Total Time:	3027 Hours	**Engine Manufacturer:**	GARRETT
ELT:	Installed, not activated	**Engine Model/Series:**	731-3-1G
Registered Owner:	MANAGEMENT ACTIVITIES, INC.	**Rated Power:**	3500 lbs
Operator:	MARTIN AVIATION	**Air Carrier Operating Certificate:**	
Operator Does Business As:		**Operator Designator Code:**	MLQA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Night/Bright
Observation Facility, Elevation:	SNA, 54 ft msl	**Observation Time:**	1646 PST
Distance from Accident Site:	4 Nautical Miles	**Direction from Accident Site:**	190°
Lowest Cloud Condition:	Clear / 0 ft agl	**Temperature/Dew Point:**	14°C / 5°C
Lowest Ceiling:	None / 0 ft agl	**Visibility**	15 Miles
Wind Speed/Gusts, Direction:	4 knots, 200°	**Visibility (RVR):**	0 ft
Altimeter Setting:	29 inches Hg	**Visibility (RVV):**	0 Miles
Precipitation and Obscuration:			
Departure Point:	LA VERNE, CA (POC)	**Type of Flight Plan Filed:**	IFR
Destination:	(SNA)	**Type of Clearance:**	
Departure Time:	1725 PST	**Type of Airspace:**	

Airport Information

Airport:	JOHN WAYNE (SNA)	**Runway Surface Type:**	
Airport Elevation:	54 ft	**Runway Surface Condition:**	
Runway Used:	19R	**IFR Approach:**	
Runway Length/Width:	5700 ft / 150 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	3 Fatal	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-Ground
Total Injuries:	5 Fatal	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	A. D LLORENTE,	**Adopted Date:**	10/06/1994
Additional Participating Persons:	DALE SCOTT; LONG BEACH, CA MARTIN SPEISER; WASHINGTON, DC PAUL H SMITH; WASHINGTON, DC		
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, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		

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