

## Pump failure implicated in plane crashes

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Vacuum pumps, which power cockpit instruments on small airplanes, have contributed to at least 82 deaths in 36 crashes since 1980, including a 1998 crash in New Orleans that killed three Denton County residents, safety reports indicate.

The National Transportation Safety Board, which investigates airplane accidents, cites vacuum pump failure as either the probable cause or a contributing factor in each case.

Attorneys representing those involved in the New Orleans crash want a court to unseal design records and internal documents of Cleveland-based Parker Hannifin Corp. The company makes Airborne vacuum pumps, the type that failed during the April 2, 1998, crash in Lake Pontchartrain in New Orleans.

A hearing about whether to unseal the documents is scheduled this morning in Fort Worth.

Repeated telephone calls during the past week to Don Swaim, Parker Hannifin's attorney in Irving, were not returned.

The failure of a vacuum pump, or air pump, can render heading and attitude indicators inoperative. As many as 250,000 general aviation aircraft have no backup power source to restore the instruments if a vacuum pump fails, industry experts say.

By Parker Hannifin's own admission, the life of an air pump cannot be accurately anticipated, and a pump can fail without warning, which "can lead to spatial disorientation of the pilot and subsequent loss of aircraft control."

That message has not been effectively disseminated, said

Carmen Rivera-Worley, who survived the New Orleans crash.

"The public would be better off if that information were out there - so people like me, who aren't pilots, would know about the risks," Rivera-Worley said.

Had she known about the unpredictability of vacuum pumps, she said she would not have allowed herself or her daughter, Sarah Worley, who was killed in the crash, to get on the plane.

Since 1993, the Code of Federal Regulations has required certified planes to have a backup power source for cockpit instruments. But many planes were certified before that, and owners can skirt the issue on that technicality.

The rented 1969 Piper aircraft that crashed in New Orleans had no backup power source. The vacuum pump had been installed on the plane in September 1982 and had been in operation for 1,241.5 hours when it failed, according to the safety board. It is not clear from board records when the Piper was certified.

By opening Parker Hannifin Corp.'s records, attorneys say they hope to compel plane owners to install backup power systems and to encourage the Federal Aviation Administration to close regulatory loopholes on vacuum pumps.

"We filed a motion asking that the court release certain documents we believe bear directly on the public's safety," said Richard Mithoff of Houston, an attorney representing the families in the New Orleans crash.

The documents were generated during a combined wrongful death lawsuit filed in 1999 by the families of the Denton County residents killed in the New Orleans crash. The

documents were sealed by the judge to expedite the mediation that followed. Parker Hannifin settled with the families last summer on the condition that the dollar figures not be disclosed.

Now the families want the documents opened because they believe that they will illuminate a significant safety issue.

Typically, instruments that indicate a plane's relation to the Earth's horizon and its heading are powered by a vacuum pump. When those two directional guides fail to work, particularly at night or in clouds, a pilot can become lost. The comparison some pilots make is to walking a tightrope blindfolded.

Experts disagree about whether the pumps or the pilots are at the root of the safety problem.

The safety board listed the probable cause of the 1998 New Orleans crash as: "The pilot's inability to maintain control of the airplane after experiencing spatial disorientation. Factors were the total failure of the vacuum pump, fog, drizzle, and night conditions."

In fact, all safety board files for the 36 vacuum pump-related crashes cite some sort of pilot error.

Rarely does anyone survive such a crash. Only three of the 36 crashes cited in the wrongful death lawsuit had survivors.

Rivera-Worley, Denton County chief civil attorney, lived through the 1998 plane crash and treaded the murky waters of Lake Pontchartrain for 12 hours before being rescued.

After witnessing the moments leading to the crash, she said the pilot, Bryan Taylor of Lewisville, did everything possible to save the plane and its passengers after his directional instruments failed.

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Taylor, Rivera-Worley's daughter and Denton County Director of Public Facilities John Scott were killed in the crash.

Attorneys for the Worley, Scott and Taylor families plan to argue during the hearing today that Parker Hannifin should open records of its investigation and research and development of the Airborne pump, including design and materials, because the information is a public safety issue.

"We believe public disclosure of the secret Parker Hannifin documents will improve aviation safety and hopefully prevent another vacuum pump crash case by making sure pilots and passengers in airplanes such as the one that crashed into Lake Pontchartrain are fully informed," said Jon Kettles, Rivera-Worley's attorney.

The safety board has been warning

the aviation industry since at least 1982 about the dangers of failing vacuum pumps. At least twice, in 1986 and 2000, Parker Hannifin issued public safety warnings to pilots and plane owners that a backup power source must be installed in all aircraft.

Since 1986, Parker Hannifin officials say, the company has refused to sell vacuum pumps to airplane manufacturers that do not equip a plane with a backup power source. The 1986 warning is included in newly purchased pumps.

Planes with older certifications may be grandfathered under older codes, meaning that they do not have to have a backup power source.

"Because FAA minimum equipment requirements allow airplanes not to have redundant systems, many owners have elected to fly their aircraft without a backup system," a

Parker Hannifin statement reads. "All instrument-rated pilots have been trained how to fly with the remaining instruments when a failure of their pneumatic driven instruments occurs. Parker believes that some pilots are not proficient to accomplish this task."

Although company representatives declined to comment on the record, depositions from top company officials echo that sentiment.

"Air pumps do not cause accidents," Airborne Division General Manager John Hruska said in a deposition. "What causes accidents is the situation of pilots who are not proficient in flying the backup instruments."

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