

**ATTACHMENT D**  
**Submitted Statements**  
**(8 pages)**

NWA First Officer Michael P. Kraft, Employee # 246533, working on Flight 1887, November 12, 2001.

We were taxiing out towards way 31L at JFK airport, time approximately 9:00 a.m. local. We were sequenced to follow behind two American Airlines flights. An Airbus A-300 and A Boeing 767. This was our sequence at the runway. The Airbus was cleared for take-off and the Boeing was given position and hold 31L. The Boeing 767 was cleared for take-off and shortly thereafter we were given position and hold 31L. It was during this time that I noticed an aircraft beginning a rapid nose-over from a normal flight path. I noticed about a mile behind the aircraft some small amount of debris floating toward the ground. I looked for signs of an explosion or smoke coming from the aircraft, but did not see any significant amount of smoke. I did not see any trail of smoke coming from ground (missile). I never saw any sign of explosion on or around the aircraft. My attention went back to the aircraft. By now it was pretty much in a vertical dive. The "top" of the aircraft was now facing east toward the sun. As it dove vertically, the aircraft rolled to the left which allowed me to view the "top" profile of aircraft. I am 99% sure that both main wings were intact. The aircraft appeared to be mostly structurally sound. I observed something not correct on the empenage. There seemed to be something missing or not right. That is really all I can say about the tail of the aircraft. The aircraft impacted the ground vertically. I did not notice any debris falling with aircraft.

I forgot to mention when I saw the top profile of the aircraft as it was rolling, I saw the reflection of the sunlight on the top wing surface. This is why I am so certain of having intact wings on the aircraft.

I have made statements to:  
"Russ" from AA SOC  
JFK Port Authority detective  
Ed Davidson-Conference call

This is from Don Schrader, Captain Flight #1887 Northwest Airlines scheduled flight from JFT to DTW, employee #111910.

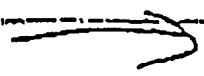
We were number two for departure behind an American Airlines A300 and B767 off runway 31L JFK. As we were taxiing into position for departure, something caught my attention in the sky. At first glance noticed the aircraft had pieces falling from it. Saw a little smoke initially. No flash or flames from aircraft. No trailing smoke. Aircraft appeared to roll and nose over. It impacted the ground nose down. My impression was that at least on wing and the fuselage was intact. One wing may have been missing. Aircraft appeared uncontrollable.

~~CONF~~

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NWA, First Officer Michael P. Kraft, Exp # 219533,  
working on flight # 1867, Nov 12, 2001.

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: Ed Davidson - conference call

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NWA FLIGHT OPS

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11-12-01

This is from Don SCHROEDER - CAPTAIN. FLIGHT # 1867  
Northwest Airlines scheduled flight from JFK to DTW.  
EMPLOYEE # 111910

We were number two for departure behind  
an American Airlines A300 and B767 off runway  
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*Don Schroeder*

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*Change to...*

Person Interviewed: John Francis LaVelle *Lavelle Cir. Lower Case v) JZ*  
Position: Captain, B-737, American Airlines  
Represented By: Mr. Ray Duke, Attorney Allied Pilots Association  
Location: Telephone Interview  
Date and Time: July 15, 2002, 0915 EDT  
Present: Operations Group members David Ivey, Bart Elias, James Goachee, Delvin Young, John Lauer

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Captain LaVelle stated that his date of birth was May 21, 1960 and that American Airlines hired him on October 28, 1986. He estimated his total flying time to be about 14,000 hours and currently was a captain on the B-737. Positions he had held since being hired by American included flight engineer B-727, first officer MD-80, first officer B-757/767, first officer MD-11, captain B-727 and current was a captain and check airman on the B-737. Captain LaVelle estimated his flying times to be about 1,700 hours on the B-727 while flying as captain, and about 1,200 hours as captain on the B-737.

He stated he had met Ed States, the captain, and stated that they had met in operations a few times. He only had casual conversations with him.

He knew Sten Molin, the first officer. They had flown together on a number of occasions on the B-727. When they first met, Captain LaVelle was a junior captain and Sten Molin was a junior first officer. Both were on reserve in the New York base.

He described Mr. Molin's personality as that of a perfectionist who worked hard and did everything by the book. He was a real gentleman as well. He said the first met in May 1997, and the last time he saw Sten Molin was sometime in the summer of 2001 in operations. He was just as he always was; a nice person and Captain LaVelle enjoyed his company.

Captain LaVelle said he flew two or three trips with Mr. Molin over a 12 month period. He stated that Mr. Molin's flying skills were excellent. He had excellent flying ability, however, he had one strange tendency: to be very aggressive on the rudder pedals. Captain LaVelle stated that during a climb out in a B-727, while the airplane was "dirty of with flaps 5 degrees", Mr. Molin stroked the rudder pedals "1-2-3, about that fast." Captain LaVelle thought they had lost an engine. Captain LaVelle asked him what he was doing, and Mr. Molin said he was leveling wings due to wake turbulence. Captain LaVelle stated that Mr. Molin never leveled the wings, and his actions just created yawing moments on the airplane. After they cleaned up the airplane they discussed it further. Mr. Molin told him he was leveling the wings as per the AAMP. Captain LaVelle told him it was quite aggressive, and that it didn't really level the wings. They talked about the AAMP, Mr. Molin insisted that AAMP (Advanced Aircraft Maneuvering Program) gave him directions to use rudder pedals in that fashion. Captain LaVelle disagreed, and said he thought the use of rudder was, according to AAMP, for

use at lower airspeeds. He disputed Mr. Molin and told him to be less aggressive and more coordinated using rudder.

Captain LaVelle said that on two subsequent occasions Mr. Molin modified his wake turbulence maneuver to comply with his wishes. Mr. Molin used rudder during these encounters but did not go to the full stop. He was still very quick.

During this first wake turbulence encounter, Captain LaVelle stated that it did not require any more than aileron to level the wings. Occasion (wake encounter) was nothing more than needing a little aileron to level the wings. Captain LaVelle thought that Mr. Molin was more aggressive than he needed to be. He said the B-727 was very a very stable airplane. He did not have to be that aggressive.

He recalled the first encounter to be during the "clean up" [after departure] on the B-727. The altitude was between 1,000 and 1,500 feet. It was somewhere around this altitude range that the event occurred. He believed Mr. Molin that the rudder was pushed to full stops. He said the effect on B-727 was that it created an uncomfortable yaw to the "left-right-left". There were heavy side-loads. He said he thought they went to left first, but was not sure. Mr. Molin stopped using the rudder on his own. Captain LaVelle thought they had an engine problem so his attention was drawn to the engine instruments. When asked, he said he did not think Mr. Molin made any aileron inputs during the encounter. The rudder never leveled the wings. He did not recall the wings moving, but experienced, "sideload, sideoad, sideoad".

His experience has been that you have to hold rudder in to get wing leveling from rudder. The AAMP program was brought up by Mr. Molin in their conversation after the event. He was adamant that he was complying with AAMP. Captain LaVelle requested that Mr. Molin review the AAMP program when he got home, and to be less aggressive when he flew with him. It never came up in conversation again. This was first time he flew with him. Months later, when they flew together, they encountered wake turbulence on two separate occasions with him again. During the subsequent times they flew together, the subject did not come up again in conversation if Mr. Molin had reviewed the AAMP.

Captain LaVelle knew Mr. Molin had a civilian background and had been a commuter pilot. He was proud that his dad had been an Eastern Airlines pilot. He told Captain LaVelle that his father had taught him to fly when he was very young.

Regarding the AAMP program, Captain LaVelle thought he went through it once in 1995 or 1996. He said he was a first officer on the B-767 at the time. He stated there was AAMP training in the simulator. Once every checkride there is some kind of airplane upset training received in the simulator.

He stated that Mr. Molin's knowledge of procedures, including approaches, flying the airplane, turns, descents, and power, was good and aggressive. In other aspects he

CHANGE TO... "well coordinated  
AND PRECISE"

STEW WAS ONLY AGGRESSIVE IN HIS APPROACH TO WAKE TURBULENCE AF

had "hands of silk." He could grease the B-727 on landings and had good systems knowledge.

Captain LaVelle when asked, had no recollection of what type of airplane they were following during the first wake turbulence encounter.

Captain LaVelle stated that he was a C-130 pilot in the United States Air Force Reserves. On one occasion, he was the last airplane in a 12-ship formation and experienced wake turbulence. He had some very remarkable full aileron deflection with full-scale rudder deflection, yet still rolled in the opposite direction. It was not until the C-130 got out of the vortex that the airplane began to respond to control inputs. He went to about 60 degrees of bank and was at an altitude of 300 feet during low-level operations when the upset occurred. Once or twice while flying the MD-80 did he encounter wake turbulence and he may have hit a control stop with ailerons. He was behind a B-757 on one occasion. He used aileron only and leveled the wings. It was on an approach to a domestic airport.

Captain LaVelle said the first event involving Mr. Molin happened about May 1997. The subsequent two wake turbulence encounters were separated by a few months; perhaps in September 1997 and December 1997. He said that when he is the non-flying pilot, he follows along on the rudder pedals. He felt Mr. Molin's inputs on the rudder pedals during that first wake turbulence event. He said it is typical for him to fly with his feet on the pedals at critical times when the copilot is flying. He did not know what other captains did with their feet while flying.

When asked why he remembered the event with such clarity five years later, Captain LaVelle stated that it was a very aggressive maneuver and he had never seen any other pilot do this but Mr. Molin. When questioned about the initial direction of the yaw, Captain LaVelle said he thought it was the left rudder input first but it could have been the right. He said the wake vortex encounter with Mr. Molin was not much of anything. Maybe just some choppy air. He thought that Mr. Molin may have been responding to the choppy air. The ailerons were kept level and he used just the rudder pedals.

He stated that he was not a check airman at the time of the encounter. He did not become a check airman until he became a B-737 captain.

He said he did not document or inform anyone at American Airlines, regarding the event.

The two or three events did not seem very significant. Usually he did not encounter wake turbulence very often. Perhaps once every quarter. Captain LaVelle said he flew with Mr. Molin three times. Three separate trips and both of them were on reserve status. He did not recall how many legs they flew together.



During the second and third encounters Mr. Molin applied rudder with coordinated aileron and it was not aggressive.

During the first event, he stated he did not think Mr. Molin applied any aileron. Maybe a little, but it was full or close to full rudder deflection. He did not believe it was the first leg of the first trip together in which the turbulence encounter happened. It was probably the second or third time that Mr. Molin was at the controls. It startled him because Mr. Molin had been so smooth on the controls.

Captain LaVelle stated the wake turbulence encounter could have been due to thermal activities or a preceding airplane. He did not think they were following a heavy airplane. He did not recall aggressive movements or abnormal rudder inputs from Mr. Molin during approaches or during the last two or three times they flew together.

When asked if he had ever made any accidental inputs to the rudder pedals while he feet were on the pedals, Captain LaVelle answered in the negative.

Captain LaVelle's concluding thoughts were that he considered Mr. Molin a friend. He was a great guy. He was a great pilot in all aspects except the one quirk; his use of the rudder pedals. When asked why he had waited until now to disclose this event with the accident first officer, he stated that he believed the NTSB was more interested in interviewing pilots that flew the A300 and had more recent experience flying with the accident crew. He said he had thought about his prior event when he heard that a wake turbulence encounter with the accident airplane might have been a factor in the accident.

John F. Lavelle  
Captain, B737  
July 29, 2002