

## **Attachment # 5B**

**Field Notes MEM August, 1997**

**Operations Group  
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0930 EDT August 19, 1997 ,FedEx Conference Room.

**Don Brewer, Aviation Safety Inspector – Operations.  
Former MD-11 APM, FedEx.**

About FedEx years experience with FAA. Flew previously for Braniff – FO 727 and Capt./FO on 737. Flew L-19's and the caribou in Army, and was an instructor. At Braniff was check engineer and designee on B-727. At FAA he has been assistant POI for FedEx for a year and 4 months. January 1992 he was assigned to be the APM on the B-727. In addition to those duties in June 1992, he was asked to be APM on A300-600. He shared the B-727 with another inspector (he had –200's). Held both positions until June 1996 and then carried only the A300 APM position. About that time, he was asked to become APM on MD-11 and got his type rating in September, 1996. On July 1, 1997 he became the APM on the A300 only. The APM position is a GS13 for MD-11 and a GS14 for the A-300, there are not enough [MD-11] airplanes for GS14. He said he dropped the MD-11 for financial concerns. He said he is also more familiar with the A300. He said they have 22 MD-11's. He said it takes 30 airplanes to have the GS-14 paygrade.

He would contact Ryan Swah if there were manual changes he wanted. He [Ryan Swah] was the tech manager on the MD-11. On the airplane he would contact Jim Ward who was the standards manager for the MD-11. He said that as an APM for all airplanes he has been on he has had good working relationships with FedEx management.

He said his biggest concern when he was going through training was the CMI – computer managed instruction. He said on August 11, 1996 he sent a letter, to FedEx, saying they [the FAA] would shut CMI down. The POI granted extension. On September 16<sup>th</sup>, all usage of CMI, for the MD-11, would be shut down. He said the CMI system presents information to the student and then at the end of the section will present a test. He said his major concern was the errors in the material and the quality of the presentation. He identified more

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than 20 errors in the hydraulic system alone and 16 in the electrical system. He said that now, as of 11 days ago, the CMI was turned back on and the program is the same but the content has been improved. He said it was off line for about 10 months. He said the people in the training building who were responsible for the CMI program were not happy with his criticism but he persevered and got it fixed. He said to this day pilots express gratitude to him for getting the CMI content fixed.

He said he did get some VFR training in simulator. He has no problems with the pitch-up tendencies on the MD-11 – adding that he has had one landing in the airplane.

He said the standardization was excellent. He said they have a overall –strong standards department at FedEx. He said he saw nothing in enroutes that would cause him go to the standards manager .

He said crews that he has observed are standard in the way they use the FMS. He has been to EWR on an MD-11.

He said he would be on the system about 2-4 times during a month on average. He said he had about 7 APDs. He has observed each one conduct an oral and a type rating. He said they have to watch them once a year and he watched all of them. He said the company had trouble coming up with 4 events for training purposes – they could find 2. He has trained them in FAA stuff.

EBC – event based currency – he gets in the simulator 2 times per quarter. Both of his airplanes PC were due in September. He did all of his MD-11 training in March.

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1010 EDT August 19, 1997, FedEx Conference Room

**Jim Searcy, ASI – Operations, Current APM for MD-11 for FedEx.**

He has been with the FAA for 11 years this September. He came to FedEx in May 1996 from the Miami FSDO. He has USAF background – forward air controller, KC-135. Then got out of the USAF and joined Airlift International, Aero Air, etc. to gain B-707 and DC-8 experience. In USAF reserve he flew helicopters and C-130's in the Air Sea Rescue Squadron. In the Miami FSDO he was acting POI and assistant POI for several airlines. In his final years there was geographical surveillance and did rating rides. He got out of MD-11 school June 4, 1997. He then observed for his IOE, during the rest of June. He will take the FedEx check airmen training soon. He said the work training program is a fiscal year calendar of work items for surveillance's – the R's and P's. On the APM program it consists mostly of observing the checkairmen and the designees. He will learn to operate the simulator control panel during his checkairman training. He will have 13 APD's working for him on the MD-11. He said they have been doing a lot of transition training; and they plan on converting the DC-10 to the MD-10. He said the APD's are supposed to do 8 type rides a year or the FAA needs to decide whether they want them as a designee or a check airmen.

When he arrived the previous APM had approved all but 3 sections on the revised CMI training program. He said they have now been approved. He said that he has not written a letter himself approving the three remaining sections but the previous APM has signed a letter to that effect. He believes he signed a form saying he has observed them and they were OK.

He would normally go to the POI if he had a problem with FedEx. He would go to POI first because he is the responsible individual and he needs to keep him in the loop. He said he would go to standards section if there was something about procedures that he observed on the line that caused him concern.

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He said that there are no special emphasis areas in the MD-11 program at this time. He said he has heard the simulator in Helsinki flies more like the airplane than the others that are in use by FedEx.

The previous APM gave him outbriefing when he arrived. One of the areas Don mentioned was the lack of a FMS trainer... only MCDU and TV screen. Computer based FMS trainer. He said it is a tool that can be used but it has not been approved or incorporated into the training program.

He thought FedEx training was good when he went through it – instructors, materials, etc. His only difficulty was FMS – he felt if he have been able to worked on a good FMS trainer, until he got comfortable with it , he could have absorbed more of what his instructors were saying in the simulator.

He had flown a B-737-400 at flight safety in SEA – the FMS was not as sophisticated.

During his simulator training he said there were a sufficient number of visual approaches and landings – most of them associated with crosswinds. He said the only problem in simulator is the inability to look out side window – but on final or dogleg to final he had no problems with visual approaches.

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1210 CDT August 19, 1997 , FedEx Conference Room

**Robert Cowell. POI , FedEx.**

He has been with FAA since October 1987. The entire time period he has been associated with FedEx. After high school went to junior college and got commercial license. Logged about 300 hrs. of small airplane time. ROTC at U of Iowa. Then USAF training flew C-130's. Then went into reserve. Worked for Air Florida – January 80 until May 84. Still fly's C-130's in reserve. He came in as an ASI. Bob Harrison was POI and he was his helper. He and Harrison worked together for 2 years. He got to be POI through merger of FedEx and Tigers. He has been POI since 1989.

APM for B-727 and 2 assistants. DC-10 APM will be getting assistant. MD-11 APM. He said Brewer completed both A300 and MD-11 work programs when he was APM for both. He said some guys have trouble just completing one. A300 APM and he will have an assistant. Total he has about 7 guys who work with him on the FedEx certificate.

He would like to add one to the MD-11 and one to the A300. He said he would like to have an assistant POI.

He said anything that is airplane specific he leaves to his APM's. RVSM or other across fleet issues he will handle.

He said he goes to Scott ??? as a managing director. Previously he would go to the managing director of flight operations. He said he would encourage his APM's to go directly to Scott.

He said that he had canceled the Deicing program until they fixed it and also the CMI on the MD-11. FedEx did not act and the program needed to be improved to better organize it and improve safety. He had requested that a time-based checklist for procedures be

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developed outlining equipment people and procedures. CMI is now approved – he gave approval letter around July of this year.

He said the training program meets FAA standards. He will not be happy with training program until it meets 100 percent safe operation. He said tail strike awareness training program has been going on for about 1 year.

He said he is happy with standardization department at FedEx. He said he has seen no problems in enroutes. He said he has talked to them about landing long. HE said CRM is good. He said checklists they found someone who had been doing it by memory but it was corrected right away.

Stabilized approaches in night and wx by 1000 feet, day VFR 500 feet.

He said most of the time that the company has a standards meeting the APM is there.

FedEx has submitted a program to him about ASAP some time ago. What they submitted is different from AC – for example 48 hours to respond vs. 24 hours. HE said for the record the FAA and FedEx have had a very open relationship. His people have attended a mediated debrief.

He said the company has made some changes several months ago that have improved the relationship between FedEx and FAA. There was a structural change in the training building. Previous you had training, flight standards and technical support. It was tension between the two areas – now they have put one person in charge of both to improve communication and conflict resolution between these units.

He does not know specifically what emphasis there is about VFR approaches during MD-11 training he said his APM would. He said his APM told him that were improvements that can be made to simulators to make it more realistic landing.

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He sees monthly failure rates.. it is lower than what the regulation would require change for. In the last month there were a number of failures for PC's for the first officers. He said it does not necessarily mean it is things are getting bad but perhaps they are getting tougher with standards.



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1300 CDT 19 August 1997, FedEx Conference Room

**Donald R. Leitch, MD-11, Flight standards specialist, APD**

█/43. DOH 4/15/74. C-130's in USAF. Flew general aviation in the year before being hired for FedEx. First position at FedEx was FO on DA-20. He then went to FE on B-727 and now as an instructor on that. Then upgraded to captain on B-727. Transitioned to DC-10 as FO, then upgraded to captain on the DC-10. And transition to MD-11. Estimated total time as about 12,000 hours. About 2,500 of that was USAF. He has been on MD-11 for about 6.5 years – in a management role. He was MD-11 chief pilot when they first got the MD-11's.

He received simulator training, IOE, and FAA check of the designated examiner part when becoming flight standards specialist. He said he does primarily simulator checks and line checks and IOE. He spends IOE time in right or left seat depending on who is getting training. He said very few times has he taken a student all the way through IOE. Assignment is spread over several instructors typically. He said a training book is kept about each student and that follows each students. He does not know what happens to this book after IOE is completed.

He said he can see no pattern in who may or may not have difficulty progressing during the training sequence.

He said he has not had pitch up's all that much. He remembered when he first got in the airplane it happening a couple times. He said that other airplanes he's kept the nose up in the air and that can't be done with this airplane. He said you do not want to hold it off.

He cannot remember specifics of the [accident] captain's IOE. He remembers the trips in general and said there were no problems he was aware of. IOE during the month of December – Frankfurt, Dover, JFK ride. He also supported a San Jose to MEM ride but

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cannot remember doing that. He cannot remember any specifics of these rides and said nothing stood out. He said that is typically good because it means the ride was not unusual. He remembered that the captain did a very good job on the ride.

He has not seen any major problems about standardization that required him to bring it to his supervisors attention. He said they have 1 main standardization meeting each year – 2 days of it are all check airmen and 1 day is flight standards. Basically 1, 3-day meeting each year. He said they are always talking together though.

He said the former APD (DON) observed him do a type check and oral. From time to time he'd come into the simulator to observe training.

He was asked about the CMI – he said he wanted to make sure that it is correct and doing good and if it needed to be corrected that it was corrected. He is not sure how bad it was or how good it was.

He has given out pink slips. He has been generally pleased with the quality of the people.

He said the captain on his standards ride had a "very nice ride" – was standard in his approaches, landing, and CRM skills. He said nothing stood out.

He said as a type rating ride the applicant must do 3 landings as a minimum. 5 landings minimum as a standards ride.

He has never had to take control of the airplane during any of the IOE's he has given.

He said the airplane handles great. He likes it better than any airplane he has flown. He said the epoch problem is there but it is not serious if you learn how to keep it from happening – get nose down. He has not seen a lot of poor or bad landings, but has seen some and he said the majority of landings he's seen he has been pleased with. He said if you are going to see a problem it is often during line checks.

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He said use power and not pitch to save landing. He said it is difficult because it is not instinct – you traditionally save with pitch. Need to save with power and hold pitch constant.

He said what experience the pilot has previously is important to know for training to understand what control tendencies he may have and problems they may face. He tries to brief them on what to expect.

He said in a time like that (salvage landing) you may go on instincts and that may not be appropriate at all times. He thinks that pilots need to respect the potential for tail strikes, know how to handle it, but do not be afraid of the airplane.

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1400 CDT

**Mr. Jay Barnwall, Flex instructor with Federal Express, FedEx Conference Room**

Flex instructor – he is responsible for training, etc. but his expertise stops at the door. Students will go to line check airmen. He is a check airman in the school house.

DOB [REDACTED] 48. DOH 8/71 hired at Flying Tigers.

Civilian pilot before Tigers. Learned to fly at 15, PPL 16, CPL 18, designated examiner at 21. Had 2,800 hours of flying and joined Tigers. Started as SO on DC-8. Then check SO. Then in 73 was a check SO on B-747. He was FO on the DC-8 about 1972. His primary duty though was check SO on DC-8. Went to line in 1975 as FO on DC-8, about a year later FO on B-747, then held bid on line as DC-8 captain. About 84 he started B-727 program, then got back in to DC-8. By started he means part of the acceptance, flight check test group. In 1990 B-747 chief pilot for FedEx and about a year later he was system chief pilot from 1991 to 1993.

He was asked to detail training landings. He said it is fairly normal airplane for stabilized approach down to about 20 feet. At 20 feet airplane is flared from 1.5 to 2 degrees depending on flap setting. At 10 feet just prior to touch down we are showing the student that proper technique is to release back pressure, and nose is allowed to come down on the ground. He said the tolerance for error is not as great as in other airplanes during landing. He said most common characteristic seen on line is that airplane has a tendency for severe pitchup on touchdown. He said contributing to this is the pilot is still flaring airplane on touchdown. He said he has yet to see simulator with this tendency replicated. He said they then teach students on what to look for, what to do and how to do it, and after they get out to the line they learn how to do it.

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He said that he thinks the landing scenario is one that if the pilot is not there 100 percent at the time it can get him in trouble.

He said if a MD-11 lands and the sink is not correct the normal tendency is to bring nose up and fly airplane in ground effect but on the MD-11 it just brings airplane's nose up – you need to use power to reduce sink rate. He said the last time this occurred to him on the airline the pilot flying was bringing the yoke back gradually to make a smooth landing.

He was asked to describe progression in training. He said you get a variety of individuals coming through the program. He said the simulator instructors do the bulk of the training on the airplane, FTD program and CMI program. He said in initial training, 2- 4 hour sessions are spent going over the automation levels, from full autoflight to hand flying. 10 additional sessions. Ride 10 in the AST program is a check ride. He said the flying takes place on day 1 – abnormal on day 3 (first of the 10 AST periods). AST 1-9 is where they start introducing airwork, approaches, systems, etc. Part of that training includes tail strike awareness training – at the end of the LOFT scenario. His average landing count 4.

With regard to the pitch up tendencies of the MD-11 he said "Is it dangerous, no. can we train for it, yes."

He said he has had nothing but "yearlings" in the past year. He cannot teach experience. He can get rid of the baggage through repetition, good aids, training etc.

He said they have opportunities to do VFR pattern work. He said our simulators are not only technically accurate and "the simulator acts in all respects as the airplane does – except for the landing characteristics we have discussed here."

He said that he thinks the pilot having backpressure on the yoke at touchdown is what induces the pitchup – elevator up exacerbates the problem.

SOP is to relax back pressure to hold constant pitch at 10 feet or less.

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1505 CDT 19 August 1997

**Jerry Wolfe, flex flight standards check airman FedEx.**

He does 6 months on the line and 6 months flexed into flight standards. He is also an APD. DOB [REDACTED]/46. DOH 9/8/75. USAF C-141 C-130. 2.5 years later came to FedEx after flying for 135 operator and reserves flying C-130's. FO DA-20.

727 Captain; DC-10 CA Captain. MD-11 Captain. MD-11 in June 1991. About 10,000-11,000. Including about 2,500 in USAF and about 1,000 hours in MD-11 flying. Check airman position since they got the airplane. Does not remember captain or FO. Has given a little over 200 type ratings and orals in the airplane.

He likes to have pilot autoland and watch it in the airplane first if at all possible. He tries to start out with flaps 35 normally not as much pitch up as with 50. Forward CG, more pitchup with aft. Talk about stabilized approach from OM inbound. Always want them to be stabilized at 1,000 feet. Disconnect autopilot at OM. Min autobrakes. Will be using autothrottles. Maintain centerline. Touchdown point is aim for 1,000 foot markers and touchdown between 1500-2000 feet. 200 feet high over approach lights and 75 over threshold, X-wind correction 200 feet to 100 feet. Do not stop flying. 10 feet to touchdown freeze pitch or relax backpressure do not put in any more backpressure. Listen to the cadence[of the CAAWS].

He said most pilots are excited about the airplane, have studied hard, received excellent instruction. He said they are prepared quite well. Captains have their problems taxiing if they have not had widebody experience. Departure no big deal, cruise, no big deal, landings, normally spend 30 min enroute briefing them on landings and stabilized approaches, pitch up on landing, flap setting brief approach and what will be built in FMS. FOs more so than captains.

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If bounce or pitchup, freeze pitch, 7.5 degrees is what you are looking for. It is a dot. If bounce will come up with power. If too much of bounce well go around, maintain 10 degrees of pitch.

He said normally he does not get pitchup. New students he expects it because they will be in flare a little late and may still be in motion below 10 feet. More typically of but primarily lack of widebody experience.

He said from 50 feet on down the simulator does not have the pitchup moment that the airplane has.

Management pilots who do not see simulator min proficiency. He believes they should not fly the airplane if they do not do it regularly. Simulator pilots, depends on previous airplane experience. He always tries to get 2 legs once every two weeks. 4 takeoff and landings a month was his personal tolerance.

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1600 CDT 19 August 1997

**Scott Sanwick, MD Flight Standards/ AOD training,  
FedEx Conference Room**

Maintenance training is under AOD training (air operations division).  
██████/49. DOH 12/86.

B727 SO first assignment. Worked in training as 727 flex instructor. Then 727 right seat, left seat, A300 captain. Has been in current position since 5/15 of this year. Position did not exist as it does now before that. In prior organization, head of flight standards was a seniority holder, head of flight training was not seniority holder and not a pilot. Practically, it did not work. Was Navy. Retired CO of 2 F18 squadrons. Started at COA in 78, Air Florida. He wants to make some changes. Audit the training program. Evaluate the standards office to see what they could have done.

He said A300 AQP is ready to go on to small group trials. MD-11 is about a year behind that. Wants to get standards department to have an earlier buy-in with the training program for course development. DC-10 program is now SVT and going away. 727 program will be around for a while but no AQP.

He was a standards guy and check guy in A300.

He feels line check airmen and simulator people should be same person.

He said MD-11 is software driven airplane and new software loads come faster than what they can update the CMI.



## **Attachment # 5C**

**Field Notes MEM November, 1997**

# Operations Group Field Notes

## MEM

**Don Goodin, First Officer (reinterview)**

Lee Seham from FPA represented.

Started about 0830 CST.

He said it took about 5 and a half to 6 hours to go from ANC to EWR. They talked about their families and the Reno air races. He described the trip as routine. He said they could see the ground fairly well over Canada, which was unusual.

He was retrained recently because the sim instructor did not have a type rating. He did not notice any difference between his initial training on the MD-11 and his retraining. He said AST stands for advanced simulator training. He said there were no special areas of emphasis during his retraining.

He said he was not feeling fatigued during the accident flight and said that fatigue was not an issue.

He said he has flown the MD-11 since the accident flight, about 15 to 20. His first flight was flight 14 from ANC to EWR and the aircraft number was 610 and number one thrust reverser was inop. He landed in EWR on the long runway (4 R). He said that the use of 50 flaps was for shorter runways.

He said he has no reservations speaking up to a captain. He said he tries to state it in a manner that it is a suggestion. He used as an example of this, his suggestion during the accident flight on using Max brakes versus Med brakes.

Left Landing light inoperative. Bob switched it off and on. Turned off the right side to see if it was dark. Then turned the right side on. Left landing light was inop.

Said winds were 250 at 5 knots [on night of accident]. Said he was not aware of any indications of erratic winds at EWR.

He said they were not attempting a go around and he does not remember the FADEC bar being broached.

He said that about 20 feet the sink rate was starting to increase. He said it was not correct to describe the sink rate as high at this point. He did not use the IVSI to determine this, but it was more a seat of the pants feeling.

He was not riding the controls during the approach but had his hands near the yoke. He said he had his eyes out the window on the runway during the flare.

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He said control inputs seemed normal. He did not feel the control yoke hit him in the chest.

He said they are trained so that the pilot flying has one hand on the wheel and one hand on the throttle.

He said tail strike training emphasis is on avoiding a large pitch input – which he said would probably correlate with elevator inputs but he stressed pitch input. He said they are taught not to hit the tail and to keep pitch attitude at 7.5 degrees or less. Where he was sitting he did not get the sense that there was any unusual control inputs. After they touched down and went airborne, Bob's hands were on the throttle and yoke and he was going forward on both. He said they were still in the landing zone and still on the runway. He said the attitude did not look unusual to him.

He said they were not that far in the air. They touched down towards the end of the runway and they were coming back down still within the first 1/3 of the runway. He said they were concerned about the shortness of runway all the way down but they felt they had enough room to stop. He said he did not feel a bank developing between the first and second touchdown. He felt it was wings level during the bounce and at second touchdown. He said that he felt no difference between the first touchdown and the second touchdown.

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**Robert Freeman, Captain (reinterview)**

Lee Seham from FPA represented

Said it was an uneventful trip.

Said he listened to ATIS versus receiving it on ACARS he believes.

He said the first unusual event was the left landing light being burned out. Also, ATIS said left runway was closed; no reason stated.

He said he's used max brakes numerous times on this airplane -- uses it for slushy conditions and so-forth. He said it is not violent but a hard stop.

He does not remember any specific training on short field landing techniques.

He received tail strike awareness training some time during first officer training -- either initial or recurrent. He thinks he also received it during captain upgrade but cannot remember, but knows he has done it several times over the years. He feels the training was beneficial.

He said he remembers a pretty dramatic pitch up right at or shortly after the second touchdown. He does remember the pitch up and getting the nose back down to the ground [after first touchdown].

He said after the accident he completed a 709 ride with the FAA.

He said he's worn no-line bifocals for about 2 years.

He said he was trying to arrest the sink rate with the power. He said his perception of sink rate was from looking out the window not the IVSI.

Landing light out did not have a dramatic impact on his ability to detect sink rate and land the airplane. Right landing light was available. He said the view out the window looked like he thought it should. He cannot remember specifically landing with that light out before but certainly has landed at some time with a light inop.

He said there were no distracting lights that were in his eyes during the landing.

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## MEM

**Tom Nordberg, Flight Standards Check Airman (APD)**

Represented by Mark Hanson, FedEx Legal

DOB [REDACTED]/48 DOH Flying Tigers 4/1/73

Duty assignments S/O DC-8, S/O Check Airman, S/O B-747, S/O Check Airman F/O B-747, Capt. B-727, Check Capt. B-727, Capt. DC-8, Check Capt., Capt. MD-11, Check Capt.

Total flying time: 17,500 hrs. Total time in MD-11: 3000 hrs.

Official title at FedEx Flex Standards Specialist, MD-11 (APD)

He said that he first flew with the Capt. of the accident aircraft when he first check out as a first officer and was typed in the MD-11 on June 11, 1994. He was the check Capt. that was administering the up-grade PC check on October 29, 1996 when he issued an unsatisfactory grade to the Capt. of the accident aircraft. He said the unsatisfactory was given for a failed V<sub>1</sub> engine out procedure and for multiple engine failure procedures. He said that after two additional simulator session he was retested and did ok.

He added that the up-grade course was a short course if the pilot was moving from the right seat to the left seat of the same aircraft. He said that he checked the progress of the accident Capt. during his IOE and the reports were good. The accident Capt. has had two check rides sense his up-grade check.

He said the he (Tom Nordberg) was not qualified to teach Tail Strike Awareness training.

He said that during training it is the rule, not the exception, that pilots have trouble landing the MD-11, the MD-11 has a narrower than usual landing envelope and it must be kept in the envelope to make a successful landing.

He said that he observed no issued during the check that may have lead to the accident. He said that he had not heard any comments from other Check Capt. about the performance of the accident Capt.