



**NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Aviation Safety  
Washington, D.C. 20594

May 29, 2014

**Attachment 1 – Interview Summaries**

**OPERATIONAL FACTORS**

**DCA14FA058**

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## A. INTERVIEW SUMMARIES

### 1.0 Interview: Elyse Swedberg , Trans States Airlines EMB-145 First Officer

Date: March 5, 2014

Location: via telephone

Time: 1000 CDT

Present were: Albert Nixon, David Tew - National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Stuart Scott – Trans States Airlines; Mike Woodbury – Airline Pilots Association (ALPA); Daniel Marimoto, Dan Ramirez–Embraer; Cliff Simmons – Representative.

During the interview, First Officer Elyse Swedberg stated the following:

Her name was Elyse Swedberg, and she was 29 years old. She held an ATP license with an E145 type rating. Her total time was 2,100 hours, and she had 930 hours on the E145 with no hours of PIC time on that airplane, and her total PIC time was 1,080 hours.

She was a flight instructor in California for a couple of years and instructed at several other flight schools. She was hired by Trans States Airlines on September 10, 2012, and this was her first airline position.

She had a first class medical with no limitations.

She was based in St Louis. She had never been a check airman or instructor at an airline. This was the first pairing she had flown with the Captain (CA). It was the second flight with him that day. The first leg the CA flew and was from Chicago to St Louis. She then picked him up again at Houston, to fly to Memphis. She flew the leg to Memphis. Described the CA as enjoyable to fly with and had no issues with him. She said she was comfortable speaking up in the cockpit and CRM was good.

She had flown in to Memphis numerous times, about 100 times.

She was drug and alcohol tested following the accident. She stated that she had no illnesses and was not taking any medications.

She said she had never failed any flying checks. She has no history of previous incidents/accidents or violations. Additionally, she has had no flight training problems or disciplinary action from the company.

On February 4, she awoke about 0900 and had breakfast. She slept well and was on a 26 hour overnight layover. She had lunch in her room went to the gym and departed the hotel to the airport about 1500 or 1600 in the afternoon.

On February 3, she had an early morning flight and awoke about 0530. She was not on reserves. She slept well and her show time was 0630 or 0700. She flew the leg from Memphis to Chicago then Chicago to Moline, and Moline to Chicago. She had a 27 hour layover and went to bed at 2200.

On February 2, she awoke at 0400 and slept good. Her show time was 0515. She commuted in the night before. She flew St Louis to Houston; Houston to Memphis. Her duty day ended at 1100. Took a nap and then watched television. She was in bed that night by 2000 and had two beers that afternoon.

On the day of the accident, they picked up airplane at 2230 in Houston. This was the first time she flew that airplane that day and does not recall if there were any MELs. She has flown the same airplane previously but could not recall how recent. She was the flying pilot from Houston to Memphis. They checked in and started engines with no issues. Weather in Houston was marginal, 1,500- 2,000 feet overcast. She does not recall the temperature in Houston. Preflight, taxi, takeoff, were normal from Houston and all checklist accomplished and airplane appeared normal. It was VFR en-route, and everything was normal.

As they descended to Memphis for an ILS approach to runway 36L, they hit a cloud layer at 3500 feet. She does not recall the temperature in Memphis. No icing was noticed during the descent or the first approach. She did not notice any icing except for moisture on the windshield wipers on the second approach but they did not see the ice light come on. She mentioned they were in the soup pretty bad and it was really dark. Coming up on the FAF they did not see anything considerable to make them worry about and could not see if there was any ice buildup. Normally you could see the wing, but she could not see the wing that night because of the weather. She has never seen icing on the wing from her experience but her training says you should be able to. Looking at the unheated part of the windshield she saw a moisture build up. She said you can look for icing at the windshield wiper if the lighting conditions are right or use the light on the wings to look for ice.

When asked if she ever had any problems with the anti-ice system before, she had several bleed load path, bleed temperatures low or inoperative; something like that. She said the anti-ice system is fully automatic. She said you can turn it on manually when the system does not work

and you can see the icing. She stated that the CA and her both looked to see if the ice light came on but they had no indication of ice. The anti-ice switches were in automatic. The anti-ice system was not tested on their flight since the system is only to be tested on the first flight of the day checks.

She stated that the in-range and before landing checklists were accomplished. She did not remember if the approach briefing was accomplished. The First Officer would normally brief to approach to 36L since she was flying. The type of approach was ILS using the autopilot. Normally she keep the autopilot engaged to about 200 feet above the ground level and on this missed approach disengaged it. She did not recall if they experienced any moisture on the first approach.

She encountered a problem with a bad signal on the LOC during the approach (both sides). The LOC would never capture and then go completely left or right. The LOC was intermittent; it never captured at all where we could trust it and never came in for more than a couple of seconds. She was not aware of anyone else experiencing the same LOC problem and does not recall if they advised ATC of the LOC problem. Not sure what the problem was and had no issues before this approach. They went around before it was intermittent, at the FAF. It was a mutual decision to execute the missed approach because of the intermittent LOC signal and she called going around.

Memphis weather was winds 270-280 at 9 knots, and overcast at 400 feet. She does not recall any precipitation on the approach. Additionally, she did not recall the temperature or their approach speeds.

Memphis was busy and she mentioned that was it was first time she had seen it that busy. On the second approach there was a heavy aircraft in front of them but she does not recall the distance it was in front of them. Also, there were aircraft simultaneous flying approaches to the left of them. Aircraft were landing on runway 36C but not taking off.

They received vectors to the ILS on 36L again initially but they responded that they would take the right, and then ATC gave them 36R. The divert field was Little Rock and the CA and her discussed their approach options there. The airplane had no auto-throttles. She said that they did not feel rushed inside the cockpit during the approach. She does not recall if they did the approach brief for the second approach.

On second approach they had good signals. The CA asked her to stay in autopilot. They got set up for the approach but had issues with the LOC. The auto-pilot had a hard time capturing but once captured it held alright. At the Final Approach Fix (FAF), they had a good signal once they and felt comfortable continuing. She does not recall the LOC signal acting up after the FAF. They did not have an issue with the glide slope. She said nobody was reporting problems with the approach. No ice light during the approach; temperatures were not below freezing. No reports of icing and no anti-ice system failures. She noticed moisture on the windshield wiper and observed something on the windshield on the second approach outside the FAF; they checked to see if the ice light came on, but had no indications they were in icing conditions.

When asked if she ever turned on the anti-ice manually, she answered you follow the QRH and that she was familiar with it.

At 1,000 feet above ground level (AGL), the gear was down, flaps 45 degrees, and the speed was good. At 500 feet agl, the approach was stabilized and on LOC and glide slope. The CA called speed at 400 feet agl, and she called correcting, while she was disconnecting the autopilot. She recalled being 4 knots slow but nothing abnormal and said she corrected the speed back. She could not get the auto-pilot audio to come off during the second approach. She was using the disconnect switch on the right side yoke; you push the button twice. She recalled pushing it twice. She asked the Captain to turn off the auto-pilot and it went silent.

When, they broke out the airplane alignment with the runway was just off to the right slightly because of the crab into the wind; she called to continue the approach and Captain called runway in sight. Visibility was ½ mile. The airplane was crabbed to the left and she called continuing the approach, landing. At the runway threshold (about 50 feet agl), she had about a 5 knot crosswind correction and put her crosswind correction of aileron into the wind and opposite rudder in. Suddenly, the airplane rolled to the sharply right and wanted to go right, about 20 feet agl. She does not recall the bank. When the wing dropped, they were both pushing on the left rudder instinctively. She does not recall, using the throttle or ailerons, and said it was a blur. They landed hard, and she thought they hit the wing but the CA did not. She thought they landed for the most part on the runway. She found out later that they took a runway edge light out.

During landing roll, the CA called for the airplane, saying “my controls”. They noticed a rudder system 1 and 2 inoperative message. The messages did not go away even after the CA recycled the hydraulics at the gate. They talked to the flight attendant and let ATC know. They asked ATC for a delay, so they could gather their thoughts. The flight attendant said everyone was ok and they then taxied to the gate. A company maintenance employee in back was asleep until the hard landing. They were on the ground 40 minutes before they looked outside at the airplane. Ground personnel notified them of the damage. When they walked outside they observed the airplane covered with ice and noticed ice on the windshield wiper and took pictures. She does not remember any circuit breakers popped after the flight but checked them in, at Houston. They wrote up the hard landing and rudder system 1 and 2 inoperative. No icing messages on the ground or flight on EICAS. No indication the anti-icing system failed or was operational. No rain at Memphis, just an overcast layer. Both did a walk around after being notified of the wing damage.

Additional questions from the other group members.

She said that Memphis had no precipitation from the time they landed until they did there walk around. When asked about any ATC issues on the approach, she said they tried to give them the same approach twice to the same runway.

The Chief Pilot was contacted by the CA and they were sent to a hotel and arrived at 0230. The next morning at 0800, they were called and drug and alcohol tested. They then went to the airport and briefly talked to the FAA from Memphis and then deadheaded to St Louis. They

arrived at the Hotel in St Louis at 2230. They met with company that next morning and the FAA the following day.

The ice light did not come on the entire flight. In preflight, all anti-ice switches were in the correct position (All dark). Override switch was in the auto position for the flight.

After the missed approach, she did not recall the TAT gauge reading.

On the second approach, the closer they were to the FAF, the more steady and stable the LOC course was.

She does not recall any abnormal pitch, power on landing.

She was a flight attendant in 2006-2007.

When asked about the company ice policy for flying into known icing conditions. She does not recall. Because the airplane was on autopilot she was able to scan outside during the approach. She also did not remember if the pitot heat was on. She said the anti-ice did not have an off position but Engine, All, or Auto positions. During the approach, she would transfer airplane control while she briefed.

She remembers observing the airplane covered in ice on the ground; specifically the nose, leading edges of the wing and stabilizer. She was not sure of the amount of ice on the fuselage. No ice or moisture was present on the jet-ridge or the parking area. All anti-ice equipment was switches were normal.

Does not recall any stick shaker. She did not feel it or hear it.

Normal EICAS messages on landing were caution engine data, and couldn't recall all the rest. No engine take off data was normal and occurs after every landing.

They picked up ATIS digitally on the box and printed it out. After the missed approach she was not sure of the exact conversation that CA had with ATC on the approach issues.

She saw no moisture on the side windows. She said the auto-pilot was turned off on the second approach, when the runway environment was in sight about 400 feet. The CA listened to the identifier on both approaches and left it on the entire second approach. While turning off the auto-pilot, the aural warning would not silence.

She was not fatigued going into Memphis.

She said that the rudder system 1 and 2 inoperative messages came on the ground not inflight. She had never seen the messages in flight but on the ground when the system was off. She has received the light in training and knew the actions were to revert to manual reversion.

Does not remember if the autopilot disconnected on her first attempt or not.

She felt the company training had prepared her for this approach. Her training, on the anti-icing system is that it's supposed to let us know if it fails; it's an automatic system. We're not trained to turn on the system but just follow what the QRH tells us to do. We don't have a procedure, she is aware of, that they will override the system. We did not know it failed, so we did not follow the QRH. She does not recall any circuit breakers popped after the flight.

When asked if she had any questions, she and her representative had no comments.

The interview concluded at 1200.

## **2.0 Interview: James Roberts, Trans States Airlines EMB-145 Captain**

Date: March 6, 2014

Location: via telephone

Time: 1200 CDT

Present were: Albert Nixon, David Tew - National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Stuart Scott – Trans States Airlines; Mike Woodbury – Airline Pilots Association (ALPA); Daniel Marimoto, Dan Ramirez–Embraer; Cliff Simmons – Representative.

During the interview, Captain James Roberts stated the following:

His name was James Roberts, and he was 38 years old. He held an ATP license with an E145 type rating. His total time was about 6,400 hours, and he had 5,600 hours on the E145 with almost 1,100 hours of PIC time on that airplane, and his total PIC time was about 1,700-1,800 hours.

He was a previous flight instructor at Delta Connection Academy, in Sanford, Florida, for about two years. He received all his flight ratings at the Comair, Delta Connection, Academy. He was hired by Trans States Airlines on August, 2005, and this was his first airline position. He has been a First Officer (FO) and Captain (CA) for Trans States Airlines.

He has a first class medical with a limitation of wearing corrective lenses.

He was based in St Louis. He has never been a check airman or instructor at an airline. This was the first pairing he had flown with the FO. It was the second flight with her that day. He described the FO as “good,” said that he got along with her well; good communications with her, and had no problems flying with her. He flew the first leg and the FO flew the flight to Memphis.

He was drug and alcohol tested following the accident. He takes no medications and had no illnesses.

He said he had never failed any flying check ride but failed an oral examination at Trans States Airlines, for his Initial Recurrent. He had no history of previous incidents/accidents, or actions with the company or FAA.

His was notified of his flight by a phone call at 0020, on Tuesday morning while on reserve. He was expecting the call and had a 1300 show time the next day. He had more than 12 hours notification and was on the first day of a five day reserve period.

Monday was his first day back from vacation during the past eight days. He returned from vacation at 1100 on Sunday. His vacation was from Monday till Sunday the previous week, but prior to his vacation, he had three days off. His vacation combined with the days off, gave him a total of eleven days off prior to the reserve period. He said he got normal sleep on vacation, including the two nights prior to the day of the accident.

The day of the accident, his show time was 1300, and his first leg was a deadhead to Chicago. The second leg was Chicago to St. Louis. The third leg was a deadhead to Houston. The fourth flight was to Memphis. He slept fine the night prior and did not feel fatigued for his flight to Memphis. He had breakfast and lunch that day, but did not have dinner.

On the day of the accident, that was the first time the flight crew flew the airplane that day although it had flown earlier. He does not remember anything about the airplane except that everything was fine and nothing stood out. The weather in Houston was nice, a little cloudy, but pretty much clear. Preflight, taxi, takeoff, climbout, and enroute cruise were normal on the flight from Houston to Memphis. The weather was clear on the flight to Memphis.

He stated that they descended to Memphis for an ILS approach to runway 36L and he was the pilot monitoring. The FO was in long range, and he was in short range, and the localizer (LOC) signal was intermittent throughout the approach. Prior to the FAF, he told the FO to turn off the autopilot and switch to short range. The airplane's configuration was gear down and flaps 22 degrees. Just inside the FAF, the LOC went out again and he made the decision to execute the missed approach and verbalized it. They cleaned up the airplane, climbed to 3,000 feet, and turned west. Approach asked them what happened and they told him about the LOC.

He clarified the intermittent signal on the LOC, saying the course was swaying and the red x would appear and then it would go back to straight. The swaying was between 1 to 2 dots on each side; come on and then red X. He mentioned that the FO was hand flying and chasing the course a little bit. He said he was identifying the approach, all checklists were accomplished, and the approach was briefed. He remembers discussing the decision altitude and missed approach. He does not remember when they entered IMC conditions. He noticed no EICAS messages for ice on the first approach and does not recall visually seeing any icing indications.

After executing the missed approach, he mentioned to ATC they could not keep the LOC course up and requested the center runway. ATC initially tried to vector them back to the same runway. They were asked if they wanted 36R on downwind and he responded that they would take the right. He said that they did not feel rushed inside the cockpit during the approach. On the missed approach, at 3,000 feet, they were above the weather. The after takeoff checklist was accomplished and the flight attendant was contacted.

On base leg, they entered the clouds at 2,000 feet. No precipitation was noticed on the approach. He discussed the divert fuel to Little Rock, since after this approach they would have to proceed to the alternate and he felt after looking at the weather there, they could execute a non-precision approach. He wrote an ACARS message to company about the divert possibility. On the approach to 36R the LOC signal was holding on more than the left runway. The autopilot was following the swaying a little bit. He decided to let the FO stay in long range longer with the auto pilot engaged. While monitoring, the Morse code identifier would come in and out. The LOC approach was swaying similar to the first approach but would stay on longer. When it came back on it would go left and right. At the FAF, LOC course stayed and had FO switch to short range and the NAV captured. He thought the approach was briefed by the FO. Tower was unaware of any localizer approach issues when he advised them. Tower asked if they could execute the RNAV approach but he said they could not because of weather. The approach was normal and stayed on from there. The airplane was configured with gear and flaps 45 degrees and on a stabilized approach at 1,000 and 500 feet.

He had the runway in sight close to minimums. They broke out, from anywhere from minimums to 200 feet. The airport was at 12:30 and off to the right. FO announced landing and turned the autopilot off but did not stop the autopilot audio announcing the autopilot was off. This went on for a little bit and annoyed the FO. He held the quick disconnect button for the autopilot to silence it. He mentioned that you have to hold the quick disconnect button down for a few seconds in order to not get the auto-pilot off audio. He mentioned the FO apparently did not hold down disconnect button long enough to get the aural warning to stop.

The FO then got a little slow (5-6 knots) and he verbalized to the FO to watch speed and the FO called correcting and got back on speed. The slow speed occurred before they were over the runway; about 100 feet to 150 feet above the ground. The FO put in crosswind corrections and then about at 20 – 40 feet, the airplane banked hard to the right. He fought to get it back to centerline; and was not sure what was going on, but said he was grabbing stuff. They slammed down really hard and went off the runway. He corrected to centerline and called for control of the airplane. Rolling down the runway, he said everything appeared fine; no blown tires etc., and does not remember if he activated the buckets. They told tower they had a really hard landing but required no assistance, and asked to hold short of center in order to collect themselves. They noticed that a rudder system 1 and 2 inoperative message was present and he thought maybe they had a rudder hard over. The queried the flight attendant to make sure everyone in back was ok. The flight attendant called back and said everyone was fine and that she was ok.

The bank happened with a wing dip and then another wing dip; kind of hard to explain. He remembers trying to get control of the airplane. When asked about the max bank over the overrun, he responded about 25-30 degrees. He used left rudder and grabbed the controls and had both hands on the yoke. He did not have much reaction time before the airplane hit the ground. The airplane was off to the right. He verbally took control of the airplane about 2-3 seconds after landing. He does not remember a stick shaker, stick pusher, or any other audio or warnings. Said it was the worst hard landing he had experienced; said it was violent and the FO thought maybe the wingtip had hit the runway.

We collected ourselves a little bit and told tower they were ready to continue taxi. We taxied to the gate and deplaned. He wrote up rudder system 1 and 2 inoperative and the hard landing. An operations worker reported after the passengers had deplaned that there was no debris on the runway. He finished making write-ups and calls when a ramp worker told them that the wing tip was pretty damaged and they went outside to look at it. During this time, they saw damage to the front part of the right wingtip and noticed a lot of ice of the leading edge of the wings. At the time, he was more concerned about the damage than the icing. He walked around the airplane, and noticed ice on the other wing, engine and the rest of the airplane. He called maintenance again and reported the wingtip damage and wrote up icing system as inoperative.

The runway was dry. They were 4-6 knots slow about 100 feet above the ground, and the FO corrected. The FO put in cross wind controls about 20 feet above the ground. He did not consider the Go-Around option.

Listening to other airplanes, he did not hear any other airplanes with LOC issues. He was familiar with Memphis. On 36R, there was a FedEx heavy in front of us. Spacing was more than 5-6 miles; and he never visually saw him.

He had no idea what happened. He noticed rudder system 1 and 2 inoperative messages on after they taxied clear of the runway. He noticed no precipitation at Memphis from the time they landed to when he noticed ice on the airplane during the post flight walk around.

They taxied back to the gate. From the time they landed to when they did the walk around was about 35-40 minutes. Damage was to the right side wing tip. Described the icing as mixed, and not uniform. Did not do a tactile check of the icing and could not estimate the icing thickness. He did not really feel like it was a factor until a later time when looking at the icing pictures. FO said, are we in icing conditions now? He noticed moisture on the windscreen but was more concerned about the LOC course. He did not reference airplane's TAT gauge, Memphis temperature was 33-34 degrees. He noticed no circuit breakers popped on the way out. He did not check any anti-ice switch positions taxiing in.

He recycled the hydraulics to see if any EICAS messages would disappear but they did not. He called dispatch and was asked to be connected to maintenance. He reported the damage to maintenance, and the rudder system 1 and 2 inoperative, the anti-icing system, and the hard landing. The second time he called, the dispatcher had already left since he was the last flight, so he had to call scheduling in order to be patched to maintenance again. The FO and him were driven to the hotel, and at 0115 they were called by the flight manager/chief pilot. They were escorted to medical facilities and were drug and alcohol tested the following morning. He was scheduled to fly the next day instead was put off line and instructed to report to the chief pilot's office, and then allowed to go home.

He did not recall any previous write-ups or MELs.

When asked if, other than the video, if he said had ever been trained on uncommanded LOC swerving in the ground school or simulator, he said "not prior to this incident." He felt that his training was adequate.

He did not write up the LOC and said that there were no other distractions or issues into Memphis that night.

He never had an issue with the anti-icing system in the airplane where he had to turn it on manually. There was an engine lip valve issue, where they had to wire it open. He had a MEL, where he would have to manually turn it on if they experienced icing. He never experienced the rudder system 1 and 2 inoperative messages before.

When asked if he had anything further to discuss about the investigation, he said "I don't think so, we relayed everything that happened; I have nothing."

His answers to the follow up questions:

He last consumed alcohol on Friday, four days before the flight.

The FO did an approach brief prior to the first and second approach.

Glides slope stayed on and was not intermittent.

No mention of wake turbulence. No turbulence during approach and prior to the airplane upset.

Did not hear or feel a stick shaker.

The antennas that receive the LOC were not heated (he was pretty sure).

Around FAF on second approach, FO mentioned are we in icing conditions, he noticed the wind screen was wet. Normally would see ice on the unheated portion of the wind screen during icing conditions. They noticed icing on the wiper blades after landing.

He was having problems with the LOC fading. The LOC would momentarily go out on the second approach and its Captain judgment on that.

He was wearing glasses at time of the event.

They were three positions on the anti-icing system. An "All", "Engine", and "Auto". Would use the "All" position when the QRH calls to or for a test. If system is giving you a problem would take it from "Auto" to "All". Normally, position is in "Auto". Windshield heat is on above 10,000 feet and was on that night. There are two antennas for the LOC. A LOC approach at Memphis that night would have kept them in the clouds.

Airplane was a little to the left of centerline when they broke out.

Did not notice any roll back ice on the ground; could not really answer that.

Did not get red x or loss navigation inside of FAF.

Does GS and LOC come on one side first, yes but it depends.

He talked to Chief Pilot the night of the event.

On the ground, he used rudder to get back to centerline.

Right before the roll, he did not remember anything unusual about the pitch and power.

Gate and ramp area was dry.

The interview concluded at 1430.

### **3.0 Interview: Michael P. Boschert, EMB-145 Aircrew Program Designee (APD):**

Date: May 21, 2014

Location: Trans States Corporate Facility, St. Louis, MO

Time: 0830 CST

Present were: Albert Nixon, National Transportation Safety Board (NTSB); Norm Bissonnette – Federal Aviation Administration; Stuart Scott – Trans States Airlines; Mike Woodbury – Airline Pilots Association (ALPA); Representative: Scott Granger, Trans States Airlines Manager of Safety.

During the interview, Captain Michael P. Boschert stated the following:

His name was Michael P. Boschert, and he was the Trans States Airlines (TSA) Aircrew Program Designee (APD) Examiner. He has been in this position since January for sure and received a 413 in May last year. He has been a captain for TSA since 1999 with his total Embraer time of 7,300 hours. Previously, he started flying a UMC Aviation Tech in 1989 and worked for St. Charles Flying service. He conducted charters at night. He was hired by TDS in 1997 and upgraded to captain in 1999. He has 2,000 hours as a simulator instructor. From 2001 he flew the line. In 2004, he was hired as the Operations Manager. In 2005, he became a Line Check Airmen. In 2007, he became the Manager of Standards and then a PC Check Airman three years ago. He became an APD in May (AQP) and N&O APD in late January.

He is married with one child and lives in St Charles. Missouri.

His responsibilities included checking new hires, upgrades, and conducting 413s. He reports to the Manager of Training, Keith Wynsma.

When asked what kind of attitudes he is seeing he said yes sir, so sir, glad to be here. When further asked about negative or positive comments from the crews, he commented that he sees nothing different than from the past. Some guys are sharp, some struggle, and some are poor test takers; Nothing different than 10 years ago.

He could not comment on any ATP rating trends of failure rates since he does not track them. He said that nothing sticks out.

When asked about the top challenges of his job, he said I see sharp guys and then some not so sharp guys. He gets to see check rides; whether it nerves or a problem, he grades what he sees and that's a challenge; it is straight forward and guidance is clear and for the most part an easy job.

He said the top safety challenges were human factors; will people follow controls and policies. The Director of Operations, Keith Stamper, fosters a safety culture. Safety was first, and then an on time departure. Hot topics and safety were good.

He said the go-around policy was a no fault policy and the crews would not get in trouble. He had no experience with a go-around but his management experience was that crews were thanked for their input.

He attends the quarterly meetings as an instructor/check airman. The last one attended was a few weeks ago. They discussed the bulletin associated with the accident at the meeting. Procedures for entering icing conditions - follow the checklist and turn the detectors on. He had no other meetings he attended.

He said that the training for the anti-ice system was adequate.

When asked if he has personally manually identified ice, he said in the turboprop days it was ingrained. Ice caused you to sit up in your seat. It was hard to see wings in the EMB-145, in all conditions, not just night. Ice lights work fine, just not much of the wing can be seen. In moderate ice you can look at the windscreen, depending on which type of windshield. He said it was easy to tell if you have ice by its different shape and round eye-brow shape. He looks for the pattern of the protected portion versus the unprotected portion of the windshield.

When asked about other icing cues from the windshield wiper, moisture, temperature, or wing, he stated, looking at the wing you cannot see much.

He has used manual override of the anti-system with deferrals. He has never actually used override but he said it sometimes takes time to come on, you look at the windshield to see and then it comes on.

He was unaware of any icing issues prior to the Memphis accident.

When asked if the bulletin change any training techniques he said you train the bulletin, same technique. He further said trust but verify.

He said that the airplane restrictions were they cannot go into severe ice, reported or forecast. When asked about the operation limit for freezing drizzle, he said he needed to look at the operations manual.

He did not utilize the anti-ice malfunctions in check rides but did discuss them in the oral.

The amount of time spent in this area depended on his comfort level. He said he asked enough questions to be satisfied.

When asked about when he trains for manual override, he said any time he touches someone he talks about the bulletin. He said prior to the accident, he did not talk about how to check if the anti-ice system works but just how it works and what is protected and how.

He said the airplane's slow airspeed cues and warnings were the PLI, color or airspeed indicator. He said that the crews pay attention to the PLI and emphasized it by saying yes, they pay attention.

When asked on a stabilized approach, but 6 knots slow, when is a correction called, He responded by asking is this my check ride or real world? The answer to his question was a Check ride, but 5 knots slow. He said, he's not saying anything and asked, PTS allows for deviations beyond 5 knots, exceed tolerance. If not prompted, I have to grade. If 8 knots slow, he said, gust, prompt...hard to answer, had to look at whole ride. He was then asked, how about worst case, 12 knots slow and the pilots did not catch it; He said he would let it play out until it was unsatisfactory.

When asked what in a stabilized approach and what does "sustained" deviation means, he answered if a prompt correction was not made, immediately call for a go-around.

When further asked is 2 seconds "sustained" is there any wiggle room, he said look at the big picture, did the crew recognize the deviation. His criteria for drawing the line, was when it had his full attention. He commented that it was not defined because it is situation dependent. He said if the rate was quick, the correction needs to be quicker.

At 20 feet, he expects to see a normal approach and no sink rate.

Per the SOP, disconnect the autopilot at 200 feet. You have to double tap for the audio silence. He said there was an issue with new pilots that tap too quickly without delay. They need to press and hold. He said this this issue normally worked out mostly on approaches in the simulator world, not in the aircraft because pilots know by then.

He said stabilized approach course tolerance was 1/4 scale, not dot from the final approach fix inbound.

When asked if he has failed anyone for stabilized approach issues, he said not on type rides. He had one AQP event graded as an "unsat". It was a thunderstorm scenario with moderate turbulence. A couple of times the crew didn't get the aircraft slowed down. When asked is this a trend, he said no, I have just seen it a few times in the thunderstorm scenario.

He said approach briefing compliance was good.

When asked, if an approach briefing is missed, is that a big deal, He said, yes it is big. You are going towards the ground with no briefing. When further asked, If I am shooting the same approach, is that a big deal, he said as long as you discuss it, its ok. If It was not discussed, it would be at least a debrief item. If it was about an approach to a different runway, it would be graded unsat.

He said the pitch attitude from 100 feet to the ground on the approach is about 2 degrees but it is a transition period and when I am looking outside. In the flare he said, I would be looking outside not looking at the attitude indicator. My reference would be pitch outside. When asked about the pitch attitude for tail strike, he said he would need to look at the manual for reference.

He would grade an ILS with ¼ dot scale deflection or more sustained an unsatisfactory since it would be out of tolerance. When asked about an intermittent Localizer (LOC), momentarily or sustained for 2 seconds, he said the captain must decide if LOC is usable, depending on weather, etc.

When asked, if the weather is worst case, how much tolerance would there be, he responded, that he wouldn't use LOC if it is "iffy". When asked what is iffy? He responded it's that "once in a while" that you have waiver authority. He said it depends if you are in the ILS protected area. You can check with tower and go to a different approach.

He did not know what bank angle the wing strikes the ground.

When asked when does the captain take control of the aircraft, he said to please narrow the question. He was then asked on a takeoff, you blow the engine past V1 does the captain take control and what are the expectations-does the captain verbalize? He said, the first officer is trained to fly with an engine failure so as long as everything is going OK, I will let him fly. If not, call "my aircraft." That's our procedure.

When asked how is the Pilot Monitoring (PM) working and is the interaction strong in general, he said people fly "good" with me because of my position.

He said the captain leadership and decisions were adequate otherwise, they would not pass.

When asked about his knowledge of the Memphis accident and the Ottawa ones in 2010 and 2011, He said, I know it occurred. The Ottawa ones are hearsay. When asked what he knew, he said, the runway was not grooved and was contaminated. The aircraft did not have thrust reversers. The pilots didn't think the brakes were working and they departed the runway. One was during OE; first officer was fast at the threshold. When asked specifically about the Memphis accident issues he said, I don't know. I had no issues with Memphis when I flew the J41.

He has had no issues with the anti-ice.

He said there were changes in company procedures with regard to Ottawa. The company issued a landing decision tree. He could not remember it all while he was in the “hot” seat. Company Hot Topics, reinforced guidance to land using brake antiskid, and crews should stay on the brakes and not use the parking brake.

He said the only changes to company procedures after the Memphis accident was the bulletin.

When asked about the safety programs and any fatigue issues, he said we have good people with the company and ALPA programs work well. With regard to the Asiana and UPS accidents and issues with automation, He was asked did the Memphis crew rely on the ice detector automation. He said, he did know enough about this accident. Globally, automation does not replace experience.

He said he knew of the pilots of the Memphis accident. He had “chit/chat” with the first officer. He thought the captain was a first officer and did not know him. I hadn’t seen him till last winter. I have not trained either of them prior to the accident.

He was not aware of any issues between the captain and the first officer?

He had nothing to report when asked about if he was aware of any safety issues, failure trends like stabilized approaches, or any comments about the new ATP rules.

Follow Up Questions:

He said there were about 400 pilots and 6 APDs and N&O transition.

He said they were challenges with the N&O transition and he was trying to organize between two programs. He uses job aids.

When asked about if there were pilot issues, he said we only have a CQ program in AQP.

He said the interactions with the FAA comes and goes, based on how busy they are. The APM, John Marshall, stays in contact with constant emails for paperwork issues etc. He said that John Marshall comes to the simulator based on issues. Most of the issues were administrative.

He said he has flown with the Memphis crew after the accident to put them back on line. He did the training to proficiency as requested through ASAP (corrective action). He used the lesson plans that were created by the company and ALPA. He said he could not discuss the ASAP plan. He said he did not review the training records?

The ice test accomplished on the first flight of the day but there was no entry on a form but just our standard procedure. He said it was always done, even in July.

He has failed individuals and he is sure some of them have been terminated.

He flies the line by picking up trips from open time. With the 117 rule, ALPA had issues with instructors picking up open time, and they stopped that. He currently cannot pick up open time, He just get the leftovers. That makes it difficult to fly the line.

He said the company and ALPA relationship was good. He was asked if it was always that way, and he said no, we went through some troubled times. That changed with the new Director of Operations, Keith Stamper. ALPA has taken steps as well. He said the issues were the contract that was tough negotiations. We are 2 to 2 and 1/2 years into the contract.

When asked about the morale on line and the new 117 rule, he said morale is good. Pilots do not like Part 117 because they lose money. They do not like the lost pay.

He has never experienced a dual rudder failure. He said it was part of training, not in CQ. He said he needed to look at lesson plans for details.

When asked can you tell what type of windscreen you have at night, he said you just notice when you get in aircraft but did not know at night.

When asked when does he transition from Vapp to Vref; he said, it is technique; if you are fast, you need to start earlier and be more aggressive.

He said, one can you turn the auto pilot off a lot of different ways: trim switches, TCS, you don't use trim because it won't turn off the yaw damper.

When asked do you know what the PTS standards are for a bust decision with regard to deviations; he said the pilot must make a timely correction.

He said for oral busts, the pilot needs to have a whole recheck. There is a form for details.

When asked, do you do the stall series in simulator check with reference to Colgan accident; he said, we do 3 stalls; high altitude, landing stall with the auto pilot on at 5000 feet and recover at first indication. We want them to get away from the critical angle of attack.

When asked if altitude loss part of the recover, he said, there is no altitude requirement. If it is 1000 feet then we will talk about it. 300 feet is normal.

He said when you get the stick shaker, the thrust levers come up for an immediate correction. All the stalls are simulated at 5000 feet in the simulator.

The interview concluded at 1000.

#### **4.0 Interview: Kerry White, Trans States Check Airmen**

Date: May 21, 2014

Location: Trans States Corporate Facility, St. Louis, MO

Time: 1000 CST

Present were: Albert Nixon, National Transportation Safety Board (NTSB); Norm Bissonnette – Federal Aviation Administration; Stuart Scott – Trans States Airlines; Mike Woodbury – Airline Pilots Association (ALPA); Representative: Scott Granger, Trans States Airlines Manager of Safety.

During the interview, Captain Kerry White stated the following:

He was a SLU Parks College Graduate in 2004 and was a flight instructor. He started with TSA in September, 2006. His current position was a Line Check Airmen.

He was a captain 1.5 years and 1 year as Check Airmen (was downgraded he believed about 2.5 total years) He said the job description was to train captains and first officers from the simulator role and to make sure they are safe out on their own.

He said this was his first part 121 job.

He said crew member's attitudes were good and that the training department does a good job.

When asked what kind of challenges, he said, a mixed bag of operators.

He said the safety challenges were making sure that we create a pilot who is standard, and flies per the SOP. To make sure he can sign them off and that he would be safe flying with them. He said there were no challenges with that.

He said the area of concern was that everyone was different.

He said there were no trends.

He attends the quarterly check airmen meetings. The last meetings he attended were in April and January. Topics covered included statistics and pass rates as hot topics. Additionally, this event was talked about: The bulletin was out about event, that you turn ice knob to all. He said the information covered was from the bulletin.

When asked what he teaches with regards to ice, he said, icing conditions when temp is less than 10 degrees and visible moisture. When asked about ground versus air operation, he said you monitor it and ensure that when the ice is on that you look up and all 4 open inscriptions on ice panel. He further said in the air you monitor it.

He said he instructs, to turn it on if in icing, and the ice detectors don't detect ice. This was discussed in the January Check Airmen meeting.

When asked how would you know that ice is accruing, He said, looking on either the blade or the non-heated part of the windshield. He said of other techniques for detection, the windshield wiper and windshield are pretty standard ways of detection.

He said was there was discussion of manual activation prior to event.

He said, pre-accident was the training about icing was good.

He does not instruct in the simulator.

When asked if the wing inspection lights were used, he said, yes all the time; you can see the last one foot of the wing and the lights work, but it's hard to see the wing.

He said the icing limitation was not below -40 degrees.

He said the training department does a good job with coving icing systems as far as the end product.

When asked about what kind of awareness do you get for slow airspeed, he said, the PLI comes down, the PLI changes color and goes from green to amber to red. He said there is also a low speed raster on the speed tape.

He said there were good cues and warnings of an onset of a low speed.

When asked during stabilized approach criteria, what is a sustained deviation, he said, it depends on the situation. When further asked, if someone is 6 knots slow would you go around, he said, no, is it gusty, is it windy?

When asked if it's gusty would you be more or less conservative? He said, more conservative and add more time.

When asked at 20 feet what do you do? He said, throttles to idle and transition to the end of the runway, hold the pitch, and let the plane settle.

He said he instructs that at 20 feet to check speed.

When asked if you are losing speed drastically then is 10 degrees of pitch a tail strike? He said, yes more than that at night. When further asked how noticeable is 10 degrees of pitch is, he said noticeable. He said a normal pitch at landing was 4-5 degrees. He holds, plus another 1 degree for touchdown.

He was not aware of any training trends of unsatisfactory and said he has not failed any. He said that most approach briefings are good and through.

He said unplanned missed approaches were good.

When asked if an autopilot disconnect audio happens very often? He said it happens in one out of every 7 or 8 times, but after teaching it they correct it.

He said he would go around on a LOC at one dot and outside the final approach, at more than a dot.

He said he did not know if there is training on the wing tip strike.

When asked what kind of training for a captain when being a non-flying pilot. He said to be careful.

He said when he is flying with a new student, he has his hands close.

He said train pilot monitoring to be as vigilant as if flying approach; eyes inside and outside.

When asked what he knew about the previous accidents, he said, they landed on wet runway, hydroplaned, and went off. When further asked if anything changed in training since then, he said, the land performance decision tree. He said the mitigation worked good and there have been no more events.

When asked if procedurally has anything changed since Memphis? He said, referring to the bulletin? He goes over the bulletin with new hires.

He said he was not going to speculate on what happened on this accident. When asked, if this could this have happened to you? He repeated that he was not going to speculate at all.

When asked if there were any Stabilized approach negative trends? He said everything is pretty straight forward.

He was not aware of any failure trends.

When asked in regards to the auto pilot issue, where they are not disconnecting the auto pilot correctly with the one in 7, he said, it is not disconnecting the auto pilot correctly. He said it usually happens on approach.

He said the captain upgrades he has are prepared and ready to go.

He said CRM training had good interaction with crew.

He is invited to the quarterly safety meetings. He said they are they are 2-3 hours long.

When asked if he has flown with the accident first officer or captain, he said not for the captain but yes for the first officer. He flew once with her but no training. He said nothing stuck out and it was good.

When asked about the captain, he said, no he is senior to me, never flew with him but went to requalification together. He said no flying with him but just a student with him.

Follow Up Questions:

He said the new ATP rule working fine. When asked if getting more of what you need, he said getting it right. He declined to comment if he was in favor of it.

No Cat 2 qualification.

When asked, on a Cat 1 SOP when does autopilot have to be off? He said, have to have it off at 200 feet. When further asked rough standard shooting to 200 feet? He said, most on to 200 feet

When asked what about if you break out at 500 feet, he said 500 feet.

When asked if he has heard of other inflight icing events, he said, first time.

He said there were no fatigue issues.

When asked about Part 117 enhanced quality flying, He said rest yes, money no.

He said the flying challenges he faced were ROA mountains and short runways.

He said on special use, first officers on high minimums cannot do that.

There was a no fault go around policy and it was in practice with no call from the chief pilot.

He said he did hear about this crew.

When asked in regards to the safety department, do they present anything, He said ASAP.

He said he was downgraded 2.5 years total as a captain.

When asked if the wing inspection lights used for checking for ice or visual cues, he said visual cues.

He said prior to this event, he has never used the override knob to anti ice other than the ice test.

He said the challenge on the Memphis arrival was the descend via.

When asked about briefing the approach he said, I have to know the runway in order to brief. When asked if the SOP tell you when to brief, he said he would have to look.

He said in CRM Class they watch videos and talk about how to deal with threats.

He said he would go around at 1 dot.

When asked when would you go around with regards to speed vref, he said +10 -5.

When asked if he remembered a speed study done by the company after the ROC accident, he said yes and the point of the study was not to be fast crossing the fence.

He said he identified ice by looking at the wiper and windshield.

When asked if he uses the wing inspection, he said, you cannot see.

When asked on what kind of an issue would you have if you leave the yaw damper on, he said, a control issue on the ground. When further asked, if the yaw damper is left on a line check, he said a potential bust or a big debrief.

He said acceptable standard inside 100 feet, 1 dot or less. Debrief the item, dependent of conditions.

He said the ice test done on the 1<sup>st</sup> flight and there was no record of it being completed.

The interview concluded at 1130.

## **5.0 Interview: Stuart Scott, Trans States Manager of Flight Standards**

Date: May 21, 2014

Location: Trans States Corporate Facility, St. Louis, MO

Time: 1145 CST

Present were: Albert Nixon, National Transportation Safety Board (NTSB); Norm Bissonnette – Federal Aviation Administration; Mike Woodbury – Airline Pilots Association (ALPA); Representative: Scott Granger, Trans States Airlines Manager of Safety.

During the interview, Captain Stuart Scott stated the following:

He was a previously an ATR instructor in the training department, on and off, his entire career. He was the Manager of Training from March of 2007, to a couple of years ago.

He is currently in charge of line check airmen and responsible for the administrative tasks of tracking failure rates and the quarterly check airmen meeting. He has been in charge of the check airmen since November-December. He reports to the Director of Operations.

He said that TSA has about 400 pilots and his section was adequately manned with one line check airmen per two airplanes. He does monitor failure trends and currently there were no trends in upgrade training and a potential trend in new hires, they are tracking.

He was aware that the accident captain had an oral bust. He mentioned that official records in crew qualification reflected this.

He mentioned that TSA was in phase 4 for CQ and only developing the rest. He said there were no issues with AQP failures and they were not tracking failure specifics.

When asked what his definition of “sustained” deviation was in regards to the stabilized approach criteria, he said it was off a standard, and did they recognize the deviation in a timely or pretty quick manner. Did they respond? Did they give the aircraft time to correct?

When asked about the use of the manual ice protection in the air, he said there is a line about in the Standard Operating Procedures (SOP) but it was not emphasized like the auto mode was. He mentioned that current training on icing might be increased now that it’s a problem. When asked about if the training was effective, his response was that he is old school, and monitored his airspeed. He might also look at the total air temperature (TAT).

He was unaware of any other events pertaining to the airplane’s ice protection.

He felt that there were sufficient cues to the airplane getting slow. He mentioned that on a stable approach at 20 feet above ground level, you do not yank back but do make sure the power is in flight idle.

He has seen the auto pilot disconnect audio distraction with new crews in the simulator.

He has no concern with the yaw dampener.

He said you would notice 10 degrees of pitch in the airplane and would make a speed call inside the critical phase when below 200 feet above ground level.

When asked, if on an approach inside the final approach fix would you shoot an approach with the needle coming in and out? He said that with a good identifier and a nervous needle, one should be within tolerance of stabilized approach criteria. His tolerance was 1 dot to 500 feet.

He said there only risks or concern with Memphis was the Fedex traffic.

He has rarely seen issues with the LOC antenna; maybe one to two times a year. He mentioned that he has written up the airplane for the LOC issue before.

When asked about any potential issues with the Pilot Monitoring (PM), he said not in I&O AQP but maybe in AQP.

He was looking to for captain leadership training to be more robust.

When asked about his thoughts on the accident, he mentioned that the ice detectors did not work. He said an SMS assessment and SRM safety risk management were currently taking place.

When asked if there was a problem with the anti-ice system automation, he said, the automation worked so well that people got complacent.

He said that he would debrief a crew that forgot to accomplish an approach brief.

He said that stabilized approaches were currently trending more stable.

When asked about the accident's captain oral record showing a failure but not any details, he stated "correct."

He said that statistics, hot topics, and the accident were covered at the last quarterly safety meeting.

Follow up questions:

He stated that he had 2,000 hours in the EMB-145. He said that the types of EMB-145 aircraft they have were the MP, ER, and LR. When asked why no reversers on some of the aircraft he said that those aircraft were purchased in the secondary market.

He was unsure of how many pilots were leaving the company and said to ask the chief pilot. He said that feedback he received from the check airmen were that they were recognizing a demographic change. They would rather have the pilots with 500-800 hours instead of the 1,500 hour pilots. When asked about this statement, he said higher time people develop habits that might be bad and also a different variety of individuals.

He said there was tracking by a focus board of pilots with persistent performance problems. The pilots must meet certain criteria prior to exiting the program. The program looks at busts and retrains.

He said there were a few minor Standard Operating Procedure (SOP) changes that were taking place but were just a clean-up of language in the manual.

He said the normal revision process was the revision gets loaded into comply 365, and the crews must review it. The crews would know the changes by the change bars on the side of the page.

When asked if FOQA is discussed at the quarterly meetings he said LOSA's and FOQA's high drivers.

He said he has not flown into Memphis recently.

When asked about first officer bust rates on the ATP check he said it was a struggle at first.

Interview concluded at 1230 CDT.

## **6.0 Interview: Keith Wynsma, Trans States Airlines Manager of Flight Training:**

Date: May 21, 2014

Location: Trans States Corporate Facility, St. Louis, MO

Time: 1430 CST

Present were: Albert Nixon, National Transportation Safety Board (NTSB); Norm Bissonnette – Federal Aviation Administration; Stuart Scott – Trans States Airlines; Mike Woodbury – Airline Pilots Association (ALPA); Representative: Scott Granger, Trans States Airlines Manager of Safety.

During the interview, Captain Keith Wynsma stated the following:

His name was Keith A. Wynsma, and he was the TSA Manager of Flight Training Operations. This was his first position at TSA but he was a captain at Comair. He has been flying since he was 17 with Comair for 18 years and also a flight school that was a part 135 operation in Florida.

He is not type rated in the EMB-145 or trained on it. He would like to be scheduled to train on the airplane in the next six months but currently he has not started any TSA training. He has about 10,000 hours of total flight time. He reports to the Director of Flight Operations.

His responsibilities included being in charge of instructors and check airmen for new hires and upgrade and working on curriculum for FAA standards. When asked how much of his time he spends on doing primary duties, he said that this is what I do all day, every day.

He said that he shares an office with the Manager of Flight Standards and has a good repertoire with him. They have a quarterly trend meeting that was last held in April. Single-engine non precession approaches for first officers were discussed. He has not noticed any differences for the Airline Transport Pilot rated first officers.

He said there were no changes in ground training or manuals on the anti-icing procedures. He said the flight operation bulletin made changes but nothing changed in training. When asked if the training was sufficient in ground school, he said he could not answer that question due to the lack of training. He said he has not found any issues in training. He provides oversight of ground instruction by stopping unannounced once a class.

All instruction was performed in house by three ground instructors. He said that there were about 140 new hires last year.

When asked about how he formally tracks changes to courseware and currency of the documents, he said we do not have documentation. The Manager of Flight Standards gets a change and lets me know what I need to change.

The timeline for AQP was the last quarter of this year. The next milestone was finishing up instructor training and then on to small group FAA trails involving ground schools orals. He said that AQP does not take up any of his time.

Students can fill out class critiques but he said very few get filled out to provide training feedback. He said that they read the critiques but do not track them.

He felt that stabilized approach criteria was emphasized enough in training. When asked was a sustained deviation meant to him, he said you have a procedure where airspeed is decreasing past a limit and there is a call out. When further asked where do you make the call, he said, we train the procedure trend vector, 10 seconds of where the airspeed is decreasing, that's where they make the call.

He said the anti-ice system training is covered well in training and specifically the anti-ice manual mode is adequately covered in training as well. The temperature range of potential icing is adequately covered for both the ground and air. There was formal training on icing conditions and type of icing. He was never in class during instruction of these areas.

He said the autopilot double tap on disconnect was not an issue.

Feedback on oral busts were provided by the check airmen who fills out an oral feedback form. He estimated the oral bust rate to be about 1.5 percent. He was unaware of any individual or ALPA complaints.

Safety and the FOQA program provides them information that then goes into the initial and recurrent training classes. He said there were no hot topics from training.

He was not familiar with the PLI. He was also not familiar with the max bank angle.

When asked about icing use in the simulator he said that a percentage of icing is available.

He is allowed to jumpseat, but has not accomplished it.

He is involved in the Focus Review Program (FRP) with the Manager of Flight Standards, and said its something they do together. He mentioned that currently no one was on the program for performance issues but some for low time.

He ensures that courseware is correct by having another instructor make changes to the slides and he changes the FOTM and then verifies the Powerpoint slides.

He said there were 3 full time ground instructors. The instructors no longer fly. There were 21 simulator instructors. He said they were adequately manned. Simulator instructors could also teach ground school.

He talks at least once a week with the FAA POI and meets occasionally with him. He said the manual approval process is pretty slow. He mentioned that since Sept 23, 2013 the AFM change made the memory items change. The change to the SOP took a while and the reason is the FAA POI said its not important to him. He said there is a difference between the AFM and QRH. When asked to give an example, he mentioned the commanded swerving. When asked how they were training the differences, he said what is in the SOP is what is being trained. He said that there was not a completion date for this issue.

He mentioned that other issues he was having with the FAA, was that the manuals should have the minimum of what needs to be there not everything else. As an example. Check airmen had a worksheet that they were filling out but it was only supposed to be a job aide. The FAA wants it to be an official training record.

He said he had no formal meetings with the FAA but he is here for the quarterly check airmen meetings. He said there were no other manual problems.

The Sep 23 draft was submitted to the FAA on November 15. It was 20 pages. He has gone over the manual 5 times with the FAA POI and he initialed each change.

He attends the quarterly safety meetings and the flight date working group meeting. He has not sat in the captain leadership training due to limited captain upgrades.

He mentioned another issue last fall where we put the winter operations manual and the FAA threatened enforcement action because the POI would not sign it off because of sequestration. They were standard table and it puts us in a bad situation.

He said the CRM program was doing pretty good and he has sat in on the course. He said a flight attendant or flight attendant new hire class was involved in the CRM classes.

He described his relationship with the Director of Operations and Manager of Flight Standards as excellent.

He was aware of the issue where the training of new QRH. The SOP has already changed and the QRH used for training has not been fixed. He said there was feedback from instructors that were concerned about negative learning with the wrong QRH. He did not have any critiques showing that.

He had no knowledge of past NTSB investigations. He was aware of past icing issues when the EMB-120 had boots.

The EMB-145 wing illumination lights were covered in training. They were used below 10,000 feet and covered in aircraft general. In training it definitely said the lights could be used to identify icing.

His answers to follow up questions:

He has been in the position for 10 months. He said the previous manager does LOSA and is semi-retired.

With regards to the single-engine non precession approach, he said the specific issue was new hires coming in and not maintaining their power and altitude and the airspeed bleeds off.

They were challenges with the new 1,500 hour ATP. He said it has degraded the training. It gives a lot more time for pilots to build bad habits. Most applicants in structured programs and then go fly 800 hours and develop bad habits. He said with more experience, get more bad habits. He said the same problem was with the limited ATP.

He said they make small adjustments to training all the time.

He heard about the accident through Scott Granger, the Manager of Safety, through word of mouth. He did not review the training records of the accident crew nor did he know them.

He said major changes included AQP.

The class critique was informal and 99.9 percent are happy and do not want to make waves.

He did not know what the stabilized approach criteria was off the top of his head. He said it was different when the speed was deteriorating.

Dispatchers have attended CRM classes in the past.

When asked about the dangers of automation were discussed any class or video, he said that there was a subtopic about it the CRM class.

The interview concluded at 1600.

## **7.0 Interview: Matthew Conrad, Trans States Director of Safety**

Date: May 21 and May 22, 2014

Location: Trans States Corporate Facility, St. Louis, MO

Time: 1400 CST May 21, and 1300 CST May 22

Present were: Albert Nixon, National Transportation Safety Board (NTSB); Norm Bissonnette – Federal Aviation Administration; Stuart Scott – Trans States Airlines; Mike Woodbury – Airline Pilots Association (ALPA); Representative: Interviewee declined representation.

During the interview, Captain Matthew Conrad stated the following:

He chose not to have any representation.

He started flying in 1985, as a private, commercial and instrument pilot. In 1987 charters; in 1991, the airlines. He was hired at Trans States Airlines (TSA) in the right seat of the J32, ATR, and then J32 captain, Instructor/OE. In 1998, he started the EMB program as an instructor. He moved to the safety department in 1999. In 2004, became the Director of Safety then in 2007 to 2008, the Director of Training and then back to Director of Safety. He flies the B-25 for the Confederate Air Force.

His Safety Training included being trained at the Aviation Safety Management at California Safety Institute.

He reports to President. He is qualified in the EMB-145. He has not been current for 8 months and is not sure if he will re-qualify. He has not flown the line as DOS and has 650 hours of EMB-145 time and a total time of 7,950 hours.

His Responsibilities include oversight of the IEP internal programs. Safety programs responsibilities are ASAP, FOQA and LOSA. He analyzes the risk. He said SMS exit level 2, was in July.

He said he was responsible for the Safety Regulatory Compliance and Trauma Response Manuals.

He said TSA has two people in safety. Scott and himself. He said there were employees in the holding company. Three separate positions in holding for 2 airlines. Two positions were not filled (Base Safety Assistant), was ready to go. 2002 was the last time the Base Safety position filled.

He said that the holdings people (analysts) and he accomplish the IEP audits. He said that they are looking for fulltime IEP auditors. A job posting was about to go out for an IEP position for both certificates.

When asked who does IEP audits now, he said in the yearly cycle there were about 35-36 audits. Matt does 25 to 30% and the holding company people do the rest. Sharron Schultz, a Safety Specialist does rest. Jennifer Ray also does IEP (ASAP more). Matt didn't know if she did Go Jet. Jennifer is support for Matt and she reports to VP of Holdings Company.

He said he ensured partiality (3<sup>rd</sup> party) when you do audit by reviewing audits and approving them. He said he has the responsibility for program.

He said training for IEP was ISO9000 plus plenty more.

The Manager of Safety and Director of Safety are fulltime positions. They plan a fulltime IEP auditor at holding company.

When asked about the Base Safety Representative, he said in the past it was a pilot in the base.

When asked about other monitoring of training and Flight Operations he said IEP and the data points to training.

When asked about base visits, he said he visited ORD in February and IAD last year. He said he would check the safety board and visit the pilot lounge to answer questions.

When asked about flight training observations, he said he visits training and does the ASAP presentation. He does the same with new hires. He does not with Flight Attendants; the Safety Specialist does. He visits all New Hires (100%) plus Maintenance classes (not 100% - not many classes)

He did jump seat last year twice for IEP audits but not otherwise. He said the Manager of Safety will do that.

He has not visited simulator training.

He said besides ASAP there was reporting through hazard reporting “I am concerned” which is online for all employees. He said the hotline was mostly for ASAP and we have an extension that the ASAP manager uses.

When asked about self disclosures, he said, accomplished by the 119’s of each department. He has not done any. Departments do it. From ASAP we have VDRP info.

He said his relationship with management was excellent. It was easy to walk into office upstairs (D.O., training) to have a conversation.

When asked about routine meetings, he said the Internal staff meeting includes holdings staff, weekly Directors meetings by COO, MRB meeting, Internal Audit (mx373 audit) monthly meetings, and Quarterly Executive meetings with President, COO and VP’s. He said the Quarterly Executive meeting included a safety brief.

When asked about Flight Attendant meetings, He said the Flight Attendants were part of most meetings. Flight attendants do not have other meetings to attend.

When asked about Communications, he said, the safety newsletter was issued. ASAP, FOQA put alerts put out. Notes were put out and released. Also, Safety hotline and ACARS. Director of Dispatch attends other meetings; Annual meeting and Quarterly meeting.

He said the recent examples included, crew web messages and the safety tab on website link to ASAP. The Safety tab can include the Newsletter, FOQA/ASAP alerts, and safety bulletins. For this event, the safety bulletin was issued first and then Flight Ops bulletin.

He said the relationship with the FAA was good. He has interaction with them at least every 2 weeks, on average.

He said the safety culture was good.

When asked about the current safety issues, he said, in FOQA – late final flap settings, in ASAP – Altitude deviations, and LOSA had no issues.

When asked about his annual review summary last year, he said the trends and issues would need to reviewed for specifics.

He said he is the main contact for the SMS process. TSA date to exit level 2 was July.

POI and Washington D.C. interaction was good for both.

He said since January 2012, the E-FOQA vendor for reliable data from the portal. 95% of all their aircraft were equipped. Two aircraft just put on line in the last two years had no equipment. There were no plans to upgrade those two aircraft.

When asked, what percent of FOQA data is checked, he said that from all aircraft. As far as FOQA negative trends, Flap late is a big one. The FOQA analyst puts data in readable format.

When asked about Stabilized approaches, he said the trend is down, not a problem before. When unstabilized did they Go around or land long, he said it was tracked but he would have to look at the data.

When asked if there were any stick shaker events, he said he does not recall.

When asked about the accident aircraft having some FOQA download parameters inoperative and if the FOQA Advisory Circular annual parameters checked, He said that's a maintenance function. When further asked if the Analyst notice the inoperative download parameters, he said the data comes from the FDR not the QAR. The Director of Maintenance would check sensors. He has not seen anything from the FOQA data analyst or maintenance for Inoperative parameters.

He said TSA had ASAP for pilots, dispatchers and maintenance but not for flight attendants. The Pilot ASAP was implemented in 2004.

He said there were roughly 150 annual ASAP reports. He does not remember any ASAP reports for the icing system.

When asked about the Incident report on the icing failure on another aircraft, he said, In December, we found out about it after MEM incident. The aircraft was in icing and the detector did not turn on in time, and the crew selected ALL.

When asked if he could provide a copy of the report, he said, ok it was a maintenance write up and it operationally tested OK. The ALPA operation group member said the NTSB was in receipt of the report.

When asked about the stabilized approach issues identified in ASAP and safety reports, he said that the data shows that unstable approaches are trending down.

He said that in regards to stick shaker reports, the industry meetings talked about CRJ. We did analysis and had none.

When asked about Intermittent LOC reports, he said there were none.

When asked how many people were in LOSA, He said 2 plus himself for a total of 3. The other 2 are retired airline Captains and were part time employees with employee badges and paid.

He said the only LOSA negative trend was altitude deviations (point and shoot). The LOSA auditors say that TSA is "very SOP."

When asked about LOSA in reference to Pilot Monitoring duties, He said there was nothing negative.

When asked about IEP audit trends for flight ops, he said there were no trends, very few findings, and no high risk findings.

He said on external audits on the DOD last October, there were no findings. On the IOSA one 2 years ago in September there were zero findings. There have been 6 IOSA audits, and TSA has been on 10 years on their registry. Their first audit around 2005-06 was not a good audit.

He said there were 4 total IEP audits and he did two of them.

When asked if IEP audited training regarding icing, he said there were 1 or 2 checklists required. Auditors sit in on training, probably dispatch and F/A's. He was asked to check on that.

There were no Flight Ops IEP events that were labeled high risk.

When asked how much time of his time he spends on IEP (he does one third audits) He said between 15 to 20 percent doing and reviewing them. He was not sure how much would the new person accomplish.

He said there was no Safety Board Inquiry on this accident. Also, there was no inquiry on the Ottawa accidents. He said the last time an inquiry done was in 2005.

When asked if the company does a Board of Inquiry separate from ASAP, he said the corrective action is more sensitive. He was no sure of a less formal investigation (for Ottawa) than Board of Inquiry.

When asked about Ottawa accident trends, he said he must defer to the report.

He said he was notified of MEM accident early morning about 0700 from the dispatcher. When asked about the policy on distribution list for incident he referred us to ask the dispatcher.

He said he did not know who was first notified about the MEM accident.

He said his action after the accident notification was to make call to the D.O. He said He already knew about it.

He said the dispatcher said he had a hard landing, reported a rudder off light and did not talk about wing damage. He was off property at a conference. He worked phone from there and everyone was involved.

He found out about the wing damage, not too long afterwards.

When asked who and when they called the FAA FSDO, he said he told the SOC to call the FAA and the NTSB because of the rudder fail.

When asked when the airplane was considered to sustain substantial damage, He said, over the weekend when maintenance got it to base in St. Louis (STL). It was ferried from MEM to STL. Matt talked to John Lovell; it was a major repair therefore an accident.

When asked about the status of the aircraft and if it is flying, he said, they replaced part of the spar by TSA maintenance. However, an FAA issue, aircraft is now in Nashville because of paperwork issue (maybe).

### **May 22, 2014, Interview**

He said, FDR (George) looked at the sensors. Maintenance is talking with him who is staying in the loop.

When asked who he contacted in the morning, he said, he talked to dispatch and they referred to the turnover log. Maintenance and SOC are collocated and they talk between each other.

When asked about the notification of a control issue (rudder) and hard landing, he said, he was not sure of what we had. They had a rudder light. Standard process; duty manager wanted information in order to move aircraft.

When asked about the Drug and Alcohol test, he said he needed to check records. He thinks they got tested.

He was not aware of any changes the last day?

When asked about his awareness of any autopilot audio issues, he said, it's not an issue in his current position. However, when he was new and flying the line; he said, one needs to hold down the push button. He did not have problem with it.

He said his awareness of the LOC intermittent issue was a new one.

When asked if he was aware of any icing issues with other aircraft, he said maybe one in December. When asked if there were others he said, yes two. An incident report; delay (in icing conditions) ice on window, ice protection didn't turn on and the crew selected ALL. There continued to be a delay for the "Icing Conditions" light to come on. Time delay varies with pilot report; from 2 minutes to 1 minute.

There was another event before the MEM incident. Pulled ice detector and sent to MSP with the other detector for evaluation.

He said the Safety Bulletin came out, the next day on the 6<sup>th</sup>, "right away". The revised bulletin by Flight Operations, provided clarification using a MEL reference to the QRH. No big changes.

He was not aware of anything from the crews about the accident.

He said there were no questions we should have asked him nor did he have any questions. He said there were no issues with the airplane.

#### Follow Up Questions:

He said the number of ASAP submissions per quarter was 150.

He said the unstable approaches are trending down because of awareness; hot topic used and LOE changes in AQP. Main one is late final flap, high driver 40%.

When asked if any other things done by company, other than bulletin, for icing issue? He said that the FAA and EMB are aware and part of this investigation. All agree mitigation is OK.

He said SDR was a maintenance function.

He said the LOSA guys are budgeted. They are Ozark and TWA retired and accident investigators with a safety degree and a TWA 800 investigator. He said they worked for the airline as the Manager of Training and the Director of Safety and was typed in the EMB. The other guy, no, but has airline experience, was typed in 767. He was not aware of any of his experience in regional jets.

He said there were DOD findings and the continued audits. He would have to check with D.O. for details.

When asked about accident/incident reports for the last 12 months for icing issues, He said, December before MEM, February accident. 2 reported (another similar) last 2 months, 1 last month. 4 incidents reported in last 6 months. All similar, it appears, reports are similar.

When asked about other action or TSA plans, he said the Bulletin is working, mitigation is working. Just reporting system errors.

He said the EMB was part of NTSB investigation. Top of TSA communicate with top of EMB (end of March).

When asked if he had contact with other operators, he said absolutely. They may of have had issues and will get back with me.

He said no ATS SAFO's?

When asked if they have other avenues, he said we can file SAFOs.

When asked if the other airlines respond, he said the RAA had no given a response.

He said the SMS process on this accident was the SRM was started and in progress.

When asked if the FDR pulled on other aircraft experiencing icing issues, he said, yes, 3 minutes before ice detector detected ice but was really 40 seconds. He said that EMB's response was there demeanor was really guarded in a legal way. "My impression" they "lawyered up" that is my opinion.

He said the results of the Rochester Speed study were that 25% of landings were above Vref. We did an awareness campaign by Flight Ops. The goal was to get pilots to land at or below Vref.

When asked if the anti-ice system work once it was on in the aircraft experiencing icing issues, he said, one issue exited ice and re-entered and the system worked normal. The System (bleed heat) worked, ice left the aircraft. It was just an ice detector issue.

When asked if this issue was this discussed with other airlines at the DOS meetings, he said, yes at the last USAir one. It may be an issue at other airlines.

When asked about the stabilized approach rate, he said, not off the top of my head.

The interview concluded at 1500 on May 21 and 1400 on May 22.

## **8.0 Interview: Lee Stelzner, Trans States Chief Pilot**

Date: May 22, 2014

Location: Trans States Corporate Facility, St. Louis, MO

Time: 1530 CST

Present were: Albert Nixon, National Transportation Safety Board (NTSB); Norm Bissonnette – Federal Aviation Administration; Stuart Scott – Trans States Airlines; Mike Woodbury – Airline Pilots Association (ALPA); Representative: Scott Granger, Trans States Airlines Manager of Safety.

During the interview, Captain Lee G. Stelzner stated the following:

He went to Oshkosh College for primary flying then flight instruction and part 135 charters. He was hired by Trans States Airlines (TSA) as a First Officer in 2003. He held positions of First Officer, Captain, Line Check Airman, and Chief Pilot. This airline is his only Part 121 experience. His total time is 8,000 hours with 5,000 in Embraer. He is qualified in the EMB-145 but not current. He will attend re-qualification training next week. His qualification lapsed in March. He was the base Chief Pilot in Dulles (IAD) in January 2012. He is the 119, Chief Pilot and reports to the Director of Operations, Keith Stamper. As a base Chief Pilot, he reported to the 119 system Chief Pilot, Randy Zehnder. Randy Zehnder transferred to the training department as an instructor.

His responsibilities were the Manager of 386 pilots, the base Chief Pilot, and the System Administrator. He manages personnel issues, pay, leaves, bid eligibility, staffing, and the list goes on.

When asked about contracts, he said the pilot CBA negotiated prior to him being System Chief Pilot. He interprets the CBA.

He said that ASAP is usually an IR (Incident Report) that goes to the Chief Pilot directly.

When asked about major issues and implementations, he said that AQP, Electronic Flight Bag (EFB - from paper manuals) Class B but not approach charts (eventually though). Starting with the Chicago (ORD) base, in July 1, with no chief pilot or administration yet. Build up slowly in ORD. We will eventually have management in ORD. There are Part 117 advantages for an ORD base.

When asked about the fleet, he said the MRJ was in the future and TSA receiving the returning of 1 to 2 aircraft from Aero Mexico in July.

He was not seeing a lot of pilot attrition. He said the quality of new hire applicants is that they need more training and have a higher washout rate. He said the washout rate was 2 per month on line. 3 per month from training. No real attrition yet. He said they can fill new hire classes now, but just it's more difficult and the quality is down.

When asked about other changes, he said nothing else. On July 1, an ORD base with a 3-4 month build up.

He said the Chief Pilot challenges were just getting all the work done. Years ago he had more staff but the airline shrunk from over 50 aircraft. The system administrator works for the Chief Pilot.

He said there were no Flight Managers, the positions disappeared.

He was not just the System Chief Pilot, but also the Base Chief Pilot at St. Louis (STL).

He said the workload was OK, up and down. On call 24/7.

He said the IAD Chief Pilot has a basement apartment (better than a crash pad) and commutes to work. Sometimes he stays the weekend. Normally 9-5 weekly.

He said his relationship with management and the Director of Safety (DOS) was that he interfaced with all management daily. We work as a team. The D.O., Keith Stamper, is a great guy and values input and is team oriented. The Systems Operation Center (SOC) was on the third floor, as was his office. He works directly and indirectly with Vice Presidents and the COO.

He said there was no GoJet interaction at his level. Upper management interacts with them. He has no Trans States Holding personnel to share. System administrator reports directly to me and is not associated with GoJet.

He said the relationship with the FAA POI was great. The last 6 weeks he has been interacting more with FAA, as more duties shifted to Chief Pilot like VDRP's.

His manual responsibilities included the FOCM, duties for chief pilots and administration.

When asked how do you monitor flight operations, he said, through Incident Reports (IR) from line personnel. 5-10 weekly. He does not really jumpseat (bump revenue) and it is hard to get through ORD.

He has not jump seated since becoming System Chief Pilot, but previously as the IAD Base Chief Pilot, he did a lot travel etc.

He said he has not been in the simulator since becoming Chief Pilot.

He said he ensures safety through, IR reports, Line feedback Trip Reports, calls, etc. They are moving from WBAT to QPulse because of SMS implementation. Qpulse will lead incident reports to risk assessment and follow up duties. Just now he's developing how reports are done and risk assessed. He is not currently formally assessing risk on the reports. Reports reside in WBAT. Qpulse will be more global. Qpulse is in beta testing now. TSA is running both systems now. He has done one Qpulse report, and is still learning.

When asked about informal methods to collect data, he said he has a good relationship with the pilot group. He has an open door policy and pilots have no problem calling him. He meets with the new hire classes. He has a good relationship with the union and pilots can communicate through them.

He said he briefs the new hire classes with everyone. He welcomes them and tells them they can contact Keith Stamper or myself, as one of us is always available, usually both.

He attends the Weekly Staff Meeting (WSM) on Monday mornings. Maintenance Review Board (MRB) on Thursdays. Flight Operations Standards Board (FOSB), Quarterly Meetings (QMT) with instructors and check airman, and Bi-weekly staff meetings with the COO.

He said he was notified of the accident the next day, as he was on vacation. QPAGE (in the morning) from dispatch and the Base Chief Pilot who was in STL, called him. The Base Chief Pilot told him it was a hard landing with wing damage and ice on the aircraft. He attended the pilot interviews by telecom. He stayed on vacation and came back Monday of the next week. He made no other calls.

When asked how the Base Chief Pilot got notified, he said I think he was called by the captain. When he returned from vacation on Monday, he found that Keith Stamper had issued a bulletin. He had no input to the bulletin. The second bulletin (SOP) he had input.

He knew the flight crew by name only. The crew had no previous interaction with his office. He said the captain was largely invisible. He comes to work and does his job.

The safety bulletin was issued first and he had no input. The second bulletin in the SOP superseded the first and he had input.

When asked if he had any other actions by flight operations for the accident, he said no, just the bulletin for the interim procedure.

He said that flight operations department was not doing an investigation but one only through the safety department. Captain Reed was involved in investigation of the ice detectors.

When asked about the Safety Bulletin, he said it was coordinated with Keith Stamper (D.O.) and the safety department. Normally bulletins are issued jointly with him.

He was not involved in the drug and alcohol test.

When asked what is sustained deviation to the course, in reference to a stabilized approach, he said it depends on conditions. If unreliable, must go-around. When further asked about sustained, is more than ½ scale course deviation “sustained,” is 5 seconds good number to take action, he said, 5 seconds, hard to say it was kind of a judgment call.

When asked about airspeed and what does a sustained deviation mean, he said, if you are correcting for it.

When asked to define sustained. He commented, was is not correcting, staying in that state. He said it was hard to define. Not a black and white thing. Don’t want to put a number on it. Judgment call, if unsafe, go-around.

He said he did not know the captain had a previous oral bust.

He was aware that the auto pilot disconnect takes 2 taps. He said there was no reporting on that issue. Everyone knows that technique of pushing the button.

He had never heard of any stick shaker reports on final.

When asked about was he aware of severe icing limitations, he said no forecast or reported severe ice. No moderate or heavy freezing rain. He was not aware of SLDs.

He said he was aware of icing system reports. Some reports there was a lengthy delay after ice accretion.

He said he identified ice on the aircraft by looking at the unheated portion of the windshield and the wiper. When asked if that was effective, he said, I had one with little delay but not lengthy. He has never had to go to ALL.

When asked if TAT in flight was trained that you might be in ice, he said yes, in ground school.

He was not sure what bank angle the wing strikes the ground.

Follow Up Questions:

When asked about what was the crew interface after the accident, he said he talked to both of them. The crew was pulled of line with pay. He talked to them a couple of times to keep in contact. He also talked to them in the post flight brief.

He said the results of the conversation were that we just talked to them on what's going on. The crew attended training that was built by safety and training departments along with the FAA. Appropriate training was accomplished and they had no problems.

When asked about what are your Part 119 responsibilities about being current, 119 requires that. He said, 119 does not require currency. He further said the, POI may not know that he is out of currency.

When asked about the new hire training needs he said the Manager of Training would know that. He said some new hires need extra simulator time. Some can't make it.

He said the ORD plan was to have 90 pilots in ORD, including reserve pilots and no assistant Chief Pilot.

He said the pilot's relationship with management was in recent years it's the best relationship. Pilots feel free to come to Jim or me. Described it as "Very good to excellent". There was a previous shift in management 3 ½ years ago. Currently a more "servant" style leadership; more emphasis on valuing employees, but always room for improvement.

When asked about Pilot issues, he said, pay issues.

He said no EPI or SAI been conducted on him while he's been Chief Pilot for 9 months.

He has not personally had icing issue and only one minor delay.

When asked about Rudder system 1 and 2 failure, he said maybe one but he cannot remember if it was in the simulator.

He has not been to Memphis.

He was in ground school Monday.

When asked about jump seat, he said, commuting frequently before becoming System Chief Pilot. He is not doing that now. He plans to fly more after getting re-qualified. He also plans on traveling (jump seat) to ORD for new base.

He said Line Check Airman (LCA) report operational issues. We Have 14 LCA, 6 in the school house and 4 more in training.

When asked if some LCA flying is not OE, he said it varies and not tracked. He can pull a report from CrewTrack or CrewPay.

He was aware of LOSA process and said it was the purview of AQP and Safety. He said he does not get feedback from LOSA.

He said he was not aware of flight operations doing any other assessments?

When asked if he monitors any media, he said, the APC (Airline Pilot Center) fairly regularly. Everyone pretty is upbeat when he's on there. Changes with airline growth.

He was not aware of any reports for LOC intermittent. The ALPA group representative said he previously reported one.

He was not aware if sustained was defined in manuals.

When asked if the IAD Chief Pilot was current, he said, He just went out and is in class Monday.

When asked about the other accidents in Ottawa, he said, he has not read the reports. He further said hydroplaning issue and a non-thrust reverser aircraft. Captains need to use good discretion going into airports where braking action reports are stopping action reports from different aircraft. They need to consider diversion. Mitigation was in force via a memo every winter to review.

When asked about Operation bulletins, memo's and emergency changes, he said, bulletins come out as needed. It was not unusual, but a time effective way to communicate until a manual change comes out.

When asked about the pending QRH revision, he said, crews should use the SOP and use discretion for QRH. Our company has been working on it for a long time. If conflict, use discretion.

He said that TSA trains for non-reverse landings during OE, as if they were flying a non-reverse aircraft.

The interview concluded at 1800.

## **9.0 Interview: Daniel Davis, Trans States Principle Operations Inspector (POI):**

Date: May 22, 2014

Location: FAA Flight Standards Office, St. Louis, MO

Time: 0830 CST

Present were: Albert Nixon, National Transportation Safety Board (NTSB); Norm Bissonnette – Federal Aviation Administration; Stuart Scott – Trans States Airlines; Mike Woodbury – Airline Pilots Association (ALPA); Representative: Mark Thomacich – FAA Legal Counsel (telephonic).

During the interview, Mr. Daniel Davis stated the following:

His aviation background was he started flying in the mid-seventies and soloed around the same time. He was then a flight instructor with two part 135 charter jobs. He also worked and flew for Metro Airlines, Eastern Metro Express, Jetstream International, and Dulles Express. He worked Flight Safety International for 6 years as a simulator instructor. He started with the FAA in 1999.

He said his FAA progression was he started as an Aircrew Program Manager (APM) on J-41 till 2003, and then he became an APM on EMB-145 on December, 2010. He then became the POI for the past three years.

He estimated he had 6,800 hours of flight time, but no time in the EMB 145, just the simulator.

He was rated in the EMB-145 airplane, but is not current. He has not been current for 3 years, while he has been in the POI position.

He said he reports to Ron France, who is the front line manager.

He said the APM now is John Marshall.

When asked what are some of the major changes at TSA. He said, TSA is getting one more aircraft back from lease later this fall, stage 3 of AQP for level 3, of Continued Qualification (CQ). There in the process of doing small group trials on instructor evaluator training course. They have started the qualification course, but the FAA may not be able to support it because the implement SAS at the same time.

He said the TSA accident aircraft ferried to St. Louis. When asked if it was in revenue flying, he said yes but now it's back in Nashville getting redone. He said this is second hand info but it was the way they handled the material and had 3<sup>rd</sup> party do the engineering work and the vendor was not inspected and did not have an approved program. The last three weeks grounded then flew then grounded again.

He said, ATOS was their system of surveillance, all the time all risk based; high med low. High risk get looks at every 5 years. ATOS finding from those part surveillance assessments will dictate what they do.

When asked on specifics on how often he jump seated, he said once a quarter. The last time he jumped seated was 2 quarters ago.

He said he observed a simulator flight at least 2 quarters ago.

He said he generally does not attend ground school but tries to make a few AQP training with its new implementation.

He attends the POI meeting, frontline, meets with Department head of the airlines, check airmen meeting, and SMS meetings. He attended last month's check airmen meeting. When asked about other meetings, he said, no other formal meetings.

The last time he was at the Dulles domicile was 2 quarters ago.

He described his workload as very busy. He said the following helps with the workload: Assistant POI (APOI) Ray Gregory, and APM John Marshall and are assigned full time.

When asked, how many inspectors full time at TSA, he said he could not remember. He said about part time inspectors, remote geographic inspectors do work with both TSA and Go Jet. They are routinely assigned ATOS database tasks. I put workout that they do and it is assigned by managers.

When asked if he has enough support, he said, no, we have to do more with less. He said he believed that there not as many people on the certificate. This true on the ops side, the previous POI left and was never replaced.

When asked if there was any trouble with the holding company employees sharing roles, He said, it may slow down the information occasionally where it takes longer to get answers but nothing of significance.

He said he's in front of a computer and it's an even split between surveillance and enforcements.

When asked if any focus inspections or higher risks, he said no active RNPs.

AQP is a new program and a big transition, for all of us and I think I have been apprehensive. TSA is willing to support it; I stick my nose in to keep involved occasionally things pop up that may him want to look at it closer.

He goes to Trans States Airlines corporate weekly and talks to them daily.

When asked about the APOI, He said, Ray is the lead ASAP inspector and he does pilot deviations; this takes a lot of his time. He helps with revisions; there is always a revision on my desk.

Oversight of ground training was with the RSI and the APM.

When asked if do you feel that there is a conflict having Ray do ASAP and enforcement, he said it causes tension sometimes in the ASAP meeting. Sometime the ASAP representatives they don't have a good understanding of what the FAA does in enforcement. They don't understand the FAA inspector is wearing 2 hats.

ASAP is working smooth in ASAP meeting is the job gets done but conflict when the inspector has to talk to the crew to fill out the deviation paperwork.

He said he had a good working relationship with the company. He further said, management has changed for the better with the new DO that came on at same time as him as a new POI. It reduced the risk not just the relationship but because that you can resolve an issues at the table and quickly fix issues.

He said he gets an in and out briefing from the DOD audit and they also call him quarterly. He said the audits are doing okay.

When asked about the IOSA audit feedback, he said, only feedback is that we need to do this because of an IOSA audit (i.e. manual revisions).

He said the greatest challenges. Sometimes we have different priorities then they do. Our priority is enforcement voluntary disclosure, Surveillance and Certification is the lowest on my list. Certification is most important to TSA. If it is something simple, ask me about it and tell me and I work with them. Major issue he has with TSA is the reoccurring issue of pilots not reviewing their paperwork prior to departure and dispatch release not matching the logcan. It is technically a paperwork error. Either the deferral was not cleared on the paperwork or the deferral was not entered on the paperwork. He said is has slowed down.

He said there were no other voluntary disclosure trends. Nothing sticks out but there is a steady stream of them.

Major fines: Slowed way down individual not systemic.

No higher risks; Altitude deviations but think it is trending lower.

No majors issue with pilot deviations: no major upswing.

He said Letter of Investigations (LOI) have gone way down.

Positive as well higher concern: Not on the Operations side.

He said no fines on Operations side since he's been POI.

When asked about hotline calls, he said pilots inquire about the new 117 rule. I don't get a lot of calls from pilot but recently got one about 117.

When asked about his ATP concerns, he said, the new ATP rule now everyone now has an ATP, it bothers me how this happened to be giving First officer pilots an ATP. He said initially there was a higher fail rate when it first started and they make some changes to the program. There is a lack of pilots coming in with lack of qualifications. I have concerns giving pilots an unrestrictive ATP. A majority of First Officers didn't have a full type ride (PC instead) so we negotiated with the company that when they upgrade that they do a couple additional maneuvers, SE approach and SE missed app.

He said that when the program was implemented there was Check Airmen issues about maneuvers that they do. Was some confusion about maneuvers the examiner must do to qualify them under the guidance from Washington (FAA). It was a PC check but there were additional items they had to do. He said this been resolved and they have to do all of them now.

When asked if the examiners fully qualified, He said each examiner had a letter on what they could do and there were 3 additional APD that probably had restrictions on their letter.

He said the manual approval/review process work well.

When asked if there has there been more workload since change of POI, he said yes, more work less people.

Specifically with the QRH, he said it is in revision status scheduled and to be signed on Tuesday. Most revision are 30 days in advance. 30 days of receipt. QRH catches up AFM conflicts between manual.

When asked if he was aware that there are differences between the AFM and QRH manual he was aware that they don't have the same memory items. He said, with this revision it has corrected some of them. When further asked if there will be still some differences, he said he does not remember.

He said on type 1A Electronic Flight Bag (EFB) manuals, he and staff approved them to carry all the manuals electronically regionally and national in agreement after implementation using E-flight bag. During their six month trail phase, however, someone from another carrier asked why does TSA have it and not their region. It was difference of opinion that required us to put the paper manuals back on the aircraft and pull the procedural manuals off the EFB. TSA has now tried to work a class 1 type B with the new guidance.

Difference between type 1A and 1B. Difference in what you can have on the EFB. An example was no operation procedures on a class 1 type A.

He said he was aware of any other EMB-145 icing issues after the accident. Part of his officer's investigation of the Memphis investigation uncovers that incident. In the incident, the crew saw the ice on the walk around after the flight and a different airplane. He said there may have been another similar incident this month or last. Now, if there flying into icing condition they turn on the system whether they have an ice light or not and operate the system as a manual system. He does not have confidence in the airplane's ice system.

When asked about the 2010 -2011 Ottawa incidents changes, he said in 2011 RNP opened 100 cockpit surveillances, Looked at approach speeds, how far down the runway they touched down, and weather conditions. Results were positive and good. All closed out.

For this accident, had meetings, observations, and solicited other inspectors from other offices to fly with TSA entered into system and it was closed.

RNP were closed.

The operations changes for the current event was a bulletin. The crew via ASAP gone through corrective action there and the bulletin mitigates the risk.

He was told about the safety bulletin and sent a copy. After the fact, he met with the Director of Flight Ops and wanted it to be more proactive.

He said he was notified of the event, that day and does not remember the time or specifics. He thought it was an incident where they landed hard, after that the NTSB was involved, he heard it was an accident due to spar damage.

He did not know the crew prior to the event.

He said the safety culture got better since he's been POI. He said the DO has a desire to do it the right way.

He said stabilized approaches have been an issue via FOQA, in the past but it has been getting better. Examples are airspeed and late flap extension but trending better.

He has not heard of any issues with intermittent LOC other than this accident.

When asked about issues with autopilot disconnect, he said yes sometimes on check rides they do not hold the button down and you will hear it all the way to the ground. Crews debriefed and I have not been in a check ride in a sometime.

He said he cannot say the pilot monitoring skills are an issue.

When asked about new hires, there is a difference in entry-level pilots, hard to find qualified pilots. Feedback he got was negative attitude "they paid their dues and you owe me something generation."

He has not seen pilots leaving.

When asked if there were issues with 119 turnover, he said the Chief Pilot was there 1.5 years, and fairly new.

When asked if he had issues with some TSA managers were not qualified or current even though it was not required it was a trend and he said I agree with that. The DO has done indoc. class.

Follow up questions:

When asked why he was not current, he said the reasons were the Congress-no funds, even to get familiarization. TSA would all me to fly but only the APM or Assistant APM is allowed to do that.

He said an APOI and APM and himself for surveillance. A Cabin Safety inspector is getting ready to leave and he's been told they will back fill the position. The dispatch inspector just left, had 6 or 7 month without an inspector but just got a new one, but he's new and going to Oklahoma for training, so he cannot do work does unless with another inspector. He said he had a dispatcher certificate as well.

He said there were three ATOS high risk items. MEL/CDL is number 1 because of the risk indicators and inability to get the dispatch release right. VDRP and ASAP reports related to that. The others were dispatch flight release and he could not remember. No medium that are high but high that have been elevate Over his tenure the numbers have gone down but the risk priorities move around a little bit but The MEL/CDL has always been number one even before his tenure.

He said the numbers are down but the MEL/CDL always number one there has been some activity from the MX side, numbers have gone down but still at high side.

When asked it's been 2 quarters since in the simulator or jump seat why so long, he said. I'm tied to my desk. When further asked what would need to change to get more into the simulator and jump seat more, he said they hired more fully qualified inspectors recently, they need to be fully qualified and doing their jobs and not be emergency transferred. Emergency transfers have been an issue. Last two dispatch inspectors have been emergency transferred. Our cabin safety inspector is being emergency transferred. Recently got an operations inspector from the general aviation side, was an emergency transfer; it works both ways.

He said there were none 3-4 non resourced items, most on the dispatch side, because do not have inspectors.

When asked about how many enroutes in the work program are being completed, he said at least 2 EPIs, He said he did not know but about 20, but could be more 20-30 a quarter.

He said there were no budget issues this quarter. For the last year, he said yes he had been able to meet the program because the individual inspector can manipulate the assignment.

He said there were 10 percent of enroutes done off hours. 10 percent is a minimum but he does not know meeting if there meeting the 10 percent and it would be from just not getting the job done.

When asked about pilot deviations number in a general sense, he said it fluctuates and currently have 3 this month. Several deviations about not meeting a crossing restrictions and ATC changed their procedure for descend via.

When asked about the number of accidents and incidents TSA has had since he been POI, he said, He said Ottawa in 2011 and Rochester (ROC). ROC overrun and they had a tail strike on landing but not sure of the date. He said the accident similarities or trends were in the three in Ottawa and the ROC one, there were all not thrust reversers airplanes. Definitely was a factor. The performance is not predicated of use of thrust reversers after ROC, the company went to

new performance provider. Previously performance provider did not take into account any surface conditions. In adverse conditions, they know how much runway they have left.

When asked any other similarities, he said, all but one did not have speed control issues. He wanted to get inspectors out there to see if there landing outside the touch down zones was to make the last turn off or an airplane control issue. Two were unstable, hot and fast, and landed long. When further asked his actions, he reverted back to his earlier comments about his campaign to get his inspectors into the cockpits.

Concerns with first officer ATP, He said the first officer gets an ATP from the right seat. That rule was not applied evenly. The new hires get their ATP from the right seat. When asked how do they taxi from the right, he said they do it at the end of the check ride.

When asked if other than the QRH were there were any manual revisions sitting on the table older than two months he said he did not think there was.

When asked, there are conflicts between the AFM and QRH, including the QRH revision that will be signed later this week, why do we have SOPs that are difference between the AFM and QRH that you're going to approve. Would they create issues for the crews with two set of SOPs He said, it a little more complex than that in the sense that EMB has produced AFM in conflict with their own QRH. They been keeping the QRH updated but not the AFM because of lack of support AEG. The AFM is harder to change than the QRH.

He said that is why the QRH has been over here since October of last year but there were still some memory item conflicts in the QRH with the AFM. He said an example he would use was the AFM uncommand swerving was a 5 item checklist item but carrier trying to make it a two-step item. In the AFM it is a two-step item, when the QRH revision is signed, the revision will bring it up to speed with the AFM.

When asked you said you do not have confidence in the aircraft deice system, so what have you done about this, he said he has talked with the EMB representative about the system being unreliable, and the EMB representative did not have the same concerns, he called the Director of Flight Operations, and shared his concerns, so we change the bulletin. He prefers them to turn in on in icing conditions and disregard the automatic system until this gets resolved.

He did not pursue a SAFO. When asked if he was aware of that avenue, he said yes it was discussed but has not gone anywhere.

Are you concerned that the Director of Safety and new Manager of Flight Ops not being typed and current in the aircraft? I think they should be qualified in the airplane as a minimum.

Have you spoke with them about these concerns and what are your concerns: Have had conversations like these, that they including myself are getting further detached from the aircraft He struggles to remember the memory items. It would be nice if there were rules in place. The Chief Pilot is qualified. The current Chief pilot was the base chief pilot in IAD.

When asked about the EFB why 2 sets of manuals he said the regulation 121.1373) that determines said that each manual holder must have the manuals to do their job. If two pilots need two complete copies of the manuals.

When asked if there were any similarities in runway conditions on the previous accidents, he said the runways were wet and ungrooved.

He said he does not remember the company doing a threshold speed study after the ROC event. He said information was put out to the pilots in form a newsletter but does not remember the study.

When asked if the QRH revision would cure all of memory items or still some different; the change to the QRH sync the SOP to the QRH but the AFM would be still be different, he said he is rethinking all of this there as we are sitting here, there is about 10 memory items in the AFM. The memory item itself is rejected takeoff procedure accomplish. There's another memory item that basically that tells them how to fly the airplane. The memory items are how to do these steps they are trained and tested on. Those memory items exist in the AFM. The company position is since we train them and test them to do this, why do we have it as a memory item. He said he broke down and gave them latitude in the SOP and He's been sitting on the QRH because it's a different type of document where you open it up and you read. He's having second thoughts on it. He does not think there should be discrepancies between the two manuals and they should be fixed.

He had no further questions or other information we should be looking into.

The interview concluded at 1145.