

ENG16IA037 Interview Summaries

Interviewee: Lenin Antonio Tablada

Date: October 13, 2016

Location: Miami Tech Aircraft Maintenance Inc., Miami, FL

Time: 1035 edt

Present: Katherine Wilson, Pocholo Cruz, Don Kramer – National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Gunnar Kemnitz – Pratt and Whitney/United Technologies; Orlando Amaris – Aruba Airlines; Glenn Kelly – Department of Civil Aviation of Aruba (DCA)

Mr. Tablada was represented by Wilberth Almengor, Accountable Manager, Miami Tech.

During the interview, Mr. Tablada stated the following:

He held an airframe and powerplant certificate (A&P) and received it about 3 years ago. He was a mechanic with Miami Tech and held that position for about 1 year 8 months. He came to Miami Tech right out of George T. Baker school. As a mechanic, his duties and responsibilities were to make sure the plane was ready to go the next day.

He worked the PM shift the day before the incident. He came to work at 1500 and was notified that the work to be completed on the incident airplane was the weekly check. They waited for the airplane to arrive and got their tools ready. He left the facility around 1830 for 30-60-minute break. The airplane came in around 2000. He did a walkaround, checked the hydraulics and oil, opened the number 2 engine cowlings and checked the IDG and oil. The engine cowlings were closed and latched. His partner checked his work and as he had previously done for his partner for the number 1 engine. After they finished the weekly check, they did a walkaround and checked everything.

The weekly check included a visual inspection of all surfaces, lights, hydraulic pressure, hydraulic quantity, electrical, and landing gear, among other things.

He had received a piece of paper with his assignment. The Aruba Airlines rep at Miami Tech or the morning mechanic assigned the work to him. It was a routine assignment.

His shift ended around 2300 but they would work until they finished the job. Mechanics got paid for extra time worked.

His work that evening just focused on the incident airplane.

The time it took to work on each engine was about 10-20 minutes. It could take longer if they had to “fight” the latches. There were no problems with the latches that evening.

He did not reference the aircraft maintenance manual (AMM) that night but he would if needed.

He had only been working on Aruba Airlines aircraft for 4 months.

Regarding how the work was split during his shift, he said he and his partner split the work in half, for example he would work on the inside of the airplane and his partner worked on the outside.

Mr. Tablada worked on the number 2 engine that night. It was just he and his partner working on the incident airplane. He thought he worked on the number 2 engine about 2030. There were no interruptions while working on the engines. The airplane was located at the gate when the weekly check was completed. The lighting at the gate was poor but he always carried a flashlight. He opened and closed the cowls “by hand”. When closing the latches, he made sure they were flush and felt and heard a click. When closing the latches, he was lying down under the engine and used his flashlight to ensure they were flush.

He had opened and closed the cowling latches many times; he could not count the number of times.

He did not work on any other Airbus aircraft at Miami Tech.

There was no procedure to clock in/out when taking a break during the work period.

Notes were only made on the paperwork if something was visually wrong.

Workload during his shift on September 18 was “fine” and they got the work done on time.

He did not see the first officer do his walkaround because that was the morning after his shift.

He had not heard of the EASA Airworthiness Directive (AD) regarding the latches prior to the incident. After the incident, he was told about the prior incidents that had happened and he was shown the AD.

He received familiarization “fam” training to work on Aruba Airlines aircraft. When he began working at Miami Tech, he worked the morning shift for about 2 months then went to the PM shift. He received fam training about 2 months before working on the Aruba Airlines certificate. There was nothing in the training regarding the latches. He also received A320 training which covered aircraft systems. He had never worked on Airbus aircraft prior to this.

The weather on September 18 was cloudy and it started to drizzle in the middle of completing the weekly check. He thought it started as they were working on the number 1 engine which was completed prior to working on the number 2 engine. He did not feel rushed because of the drizzle, he was used to getting wet.

He was a full time employee at Miami Tech and his normal shift was Sunday-Friday from 1500-2300. He had Saturday, September 17 off from work.

The work assigned to mechanics was determined by Aruba. He was not sure when Aruba sent the work to Miami Tech, he just got the job he was to do.

The weekly checks were done every week. They were done at night and then turned over to the morning shift where someone would check their work. The morning check was to make sure everything was ready to go.

There were 3 mechanics that worked the PM shift so who he worked with on a shift rotated. His supervisor was Ivan, a mechanic.

When working on the engines for the weekly check, his partner was just looking to make sure it was done correctly. They did not sign anything about closing the latches, the job just says that the visual check of the IDG was done. Since the incident, there was a process in place to let pilots know that. They would write in the logbook that the engine cowls were opened and closed, short sign the task sheet, and the job would be closed on in the morning by the AM mechanic. The AMM states that they need to write in the logbook that the cowl was opened and closed. Mechanics were also supposed to use the AMM when performing their work. He would print the portion of the AMM related to the work being done and use it that day.

The training he received when hired was an introduction to Miami Tech. He last received training on the A320 about 6 months previously. They did not train maintenance resource management or teamwork training. He had not been required to attend recurrent training yet.

The biggest challenge of his job on some days was the workload. There was no pressure from Miami Tech to get a job done and he had no concerns about safety at the company. If he did have a concern, he would talk to his supervisor or the director of maintenance. There was no way to anonymously report a safety concern that he knew of.

On Thursday, September 15, he thought he probably woke up around 0900-1000. He recalled sleeping and working that day. He woke up, ate and went to work. He did not recall if it was a normal shift. He was probably in bed between 0100-0200. He would fall asleep once in bed. On Friday, September 16, he probably woke up about 1100 and may have worked a little past 2300 that night. He went to bed about 0100-0200. Saturday, September 17, was his day off. He probably woke up around 1200 and worked on his truck then went to bed around midnight. He woke up late on Sunday, between 1100-1200 and did chores before going to work. There was nothing that interrupted his sleep in the nights preceding his Sunday shift. He felt good when he woke up on Sunday and felt alright during his shift.

He thought he needed 6-7 hours of sleep to feel rested. He did not drink caffeine during his Sunday shift; he had water.

He had never been involved in any previous accidents or incidents and had never been disciplined for his performance. He did not receive any commendations for his performance but people had told him “good job” for work he had done.

He did not have any changes to his health or personal life (good or bad) in the previous 12 months and he thought his financial situation had improved.

Asked about his health, he said he was “good to go.” His vision was 20/20 with contacts and he always wore them. He had no issues with color vision or his hearing.

He did not take any prescription medication, use tobacco products, or illicit drugs. He drank alcohol once in a while and it had been awhile before his Sunday shift since he had had an alcoholic beverage. He took an over-the-counter pain reliever on Saturday for a headache.

He had delayed a flight once for a dent not that long ago. There was no consequence for doing that.

He had been performing weekly checks often. Aruba Airlines had 3 airplanes so he had been doing the checks 3 times a week for the last 4 months. It took about 1-1.5 hours to do a weekly check if there were no issues.

He had never written up the latches. If one got a little stuck, he would just readjust it and put it in. He had never thought he latched it correctly and then realized he had not. He would make sure the latch was flush.

He had never been told that the logbook had to show that the cowls had been opened and closed. They would only write that they did the weekly check, short sign the paperwork and then the job would be closed in the morning.

He and his partner would verify that the other person did the work they said they were going to do but only one person would sign off on the paperwork.

He did not know if the IDG paperwork said to close the cowl, he just knew how to check it.

He had seen the FAA around the Miami Tech facility but the inspector had never asked him for his credentials.

Asked what he thought could be better about the task of opening and closing the latches, he said the sticker stating to make sure the cowls were latched should be more visible.

He had seen a pilot do a walkaround. To check the latches, the pilot got on his knees and looked under the engine.

The fam course was for the A320 which covered general systems.

When given a work assignment, a form was printed. It was a work order and listed what the weekly check consisted of. If the AMM was needed, they would get it. The mechanics had an access code to access the manual electronically.

He first worked on an Airbus aircraft after the fam course. The course did not include how to open and close the latches. He also received GMM training from Aruba Airlines which covered the paperwork needed to be completed for different jobs.

He had done a morning sign off of a weekly check which consisted of a walkaround and checking the paperwork. This was sometimes done with the pilot. All weekly checks were done at the gate.

The latches could easily be seen from one's knees.

He had never thought a latch was secured properly when it was not.

The training specific to Aruba Airlines focused on completing the paperwork, not the manuals.

The AMM printed for a task was specific to the airplane registration number they were working on.

If a mechanic was at the gate performing a job and needed a section of the AMM, he would call the Aruba rep who could send the section to the mechanic as a PDF on his phone. Mr. Tablada had just done that yesterday.

He thought it would be a good procedure to make the check of the latches an RII.

There was only one way to open/close the latches.

He thought he had probably replaced an engine cowl latch once before but it was on a different aircraft. It was replaced because the hook would not click and something had broken. It was not an Airbus aircraft.

There were no interruptions when performing the weekly check on the incident airplane during his Sunday shift.

He did not have anything to add to the interview.

Interviewee: Jose Lizama

Date: October 13, 2016

Location: Miami Tech Aircraft Maintenance Inc., Miami, FL

Time: 1300 edt

Present: Katherine Wilson, Pocholo Cruz – National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Orlando Amaris – Aruba Airlines; Glenn Kelly – Department of Civil Aviation of Aruba (DCA)

Mr. Lizama was represented by Wilberth Almengor, Accountable Manager, Miami Tech.

During the interview, Mr. Lizama stated the following:

He was an aircraft maintenance technician at Miami Tech Aircraft Maintenance Inc., and had been in that position for 6 months since being hired by the company. He had an A&P certificate, receiving his powerplant certificate in 2012 and his airframe in May 2016. Prior to working for Miami Tech, he had previously worked as a car mechanic. This was his first position working with aircraft. He worked on the Aruba Airlines certificate and also in the hangar; he did whatever the company asked, but on a daily basis he was only working on Aruba Airlines aircraft. He worked other Airbus aircraft in the hangar but not other A320s.

On Sunday, September 18, 2016, it was a normal day. He clocked in, went to the office to discuss what to do that day, went to flight radar to see where the airplanes were at, and worked on the airplanes to do what was necessary. He clocked in at 1430 and took his breaks in between working on airplanes. He normally took a break after working about 2-3 hours, then he would see the airplane he had to work on and would see how the work went. He did not remember when he saw the incident airplane. He worked with Mr. Tablada but sometimes worked with another mechanic. He only recalled having the weekly check on the incident airplane to be completed during his shift. The workload that night was “alright” and he left work on time; it was stable, no rushing, relaxed. The airplane was at the gate and they took the company truck to get there. They would first check the oil but they could not do all of their work because the engine was still hot. Regarding the weekly check, it was split between him and Mr. Tablada; there was no set way on how to split it. He worked on the number 1 engine and checked the IDG while Mr. Tablada held the cowling open. It took 20-30 minutes to work on each engine; if the IDG had to be serviced it could take longer. There was nothing unusual about either engine. The purpose of having a partner when checking the engine was to make sure the cowling did not fall and injure the other mechanic. After closing the latches, he would check to make sure the latches were flush. Since the incident, he would give the latches a bang. On Sunday, the latches on the number 2 engine looked flush. To check them, he got on one knee. Both mechanics had flashlights. They had to use flashlights because the cowlings cast a shadow. When working on the number 2 engine, Mr. Tablada held a flashlight and Mr. Lizama held the cowling. When Mr. Lizama check the number 2 latches, he did not use a flashlight; he could see they were flush.

He went off duty about 2330. His normal shift was 1500-2300. He thought it took 20-30 minutes to work on the number 2 engine. He did not know at what time they worked on the number 2 engine. He thought they only did the weekly check on the incident airplane during the PM shift.

He did not recall when they completed the weekly check. The only paperwork completed was the weekly paperwork. Each task was signed, one by one but only one person signed the sheet. It was his signature and Mr. Tablada told him the tasks that he completed. It was normal for only one person to sign the sheet even if two people did the work because he trusted the guys he worked with. He was the newest mechanic. It was common for a person to sign on the paperwork who did not actually do the work. There was no policy that stated who had to sign the paperwork.

During the Sunday shift, there were no interruptions while completing the weekly check. It was drizzling but “nothing crazy.” It did not change how the job was done; they still had to get the work done. He put on a coat and got to work. He wore gloves when working on the engines so he did not dirty the paperwork. He did not think Mr. Tablada was wearing gloves.

The latches had a “big” part and a “little” part. The mechanic closed the big part and then the little part and would make sure it looked closed. They would feel tension when closing the latch. There was a little click, but not a bang. He did not think you felt a force when closing it. He never had to readjust a latch and did not recall Mr. Tablada having any issues closing the latches. He did not recall seeing any mechanics having issues closing the latches.

If the mechanic needed a section of the AMM when they were at the gate, they would either go back to the hangar or would ask the Aruba rep to send them the PDF to your phone. He was supposed to have the portion of the AMM applicable to the work being done with him but he did not have it on the night before the incident. He would make sure that the AMM applied to the aircraft that was being worked on.

He was always lying down when closing the latches. How often he opened and closed them varied; sometimes it was just once a week. He was familiar with doing it; he thought he had done it 40-50 times.

The procedures for working on Aruba Airlines aircraft did not differ from other airlines.

When taking breaks during a shift, he did not clock in or out; he just took them when he could or when he was feeling tired.

During the Sunday shift before the incident flight, the workload was relaxing. He was not tired and there was nothing stressful.

He was currently in school so only worked Saturday and Sunday for the Aruba Airlines certificate; otherwise he worked in the hangar. Miami Tech gave him flexibility because he was in school Monday through Friday.

He did not recall his schedule Thursday, September 15 and Friday, September 16. He normally woke up between 1000 and 1100. If he was not working, he was in bed about midnight. He had no problems going to sleep or staying asleep at night. On Saturday, September 17, he woke up between 1000 and 1100, watched TV and relaxed before beginning work at 1500. He was not sure when he finished working but did not usually work past 2330; he would remember that if he did. He went to bed when he got home but did not recall the time. On Sunday, September 18, he slept

until 1200-1300 and began work at 1500. He had no problems sleeping the previous night and felt okay at work. It was a normal day and he did not feel tired at all. He did not recall drinking any caffeinated beverages during his Sunday shift, but thought he probably did on Saturday.

He reported to the mechanic supervisor, Ivan.

Asked what was the biggest challenge of his job, he said sometimes things did not get planned out accordingly and a job would have to be done two or three times because something was not read right.

When he first started working at Miami Tech, he worked during the day and would see the pilots performing their walkaround, but now he worked at night and did not see the pilots. Pilots got on one knee to look at the latches; they would also check the nose cowlings and flick the rubber tip on the nose.

He had never been involved in any previous accidents or incidents or been disciplined for his performance. He never received any formal commendations but had been verbally told he did a good job.

He had not had any changes, good or bad, to his health, financial situation or personal life in the previous 12 months.

He rated his health an 8 out of 10. He had 20/20 vision and did not wear corrective lenses or have problems with color vision. He had no problems with his hearing. He did take any prescription medication. He drank alcohol occasionally, usually on a Thursday or Friday. He did not use tobacco products regularly or use illicit drugs. In the 72 hours prior to his Sunday, September 18 shift, he did not take any prescription or nonprescription medications.

When hired by Miami Tech, he received the GMM from Aruba Airlines and Miami Tech provided an A320 fam course. He also had an MD fam course and had taken other fam courses on his own that were not provided by Miami Tech. The A320 training was done in a classroom and there was no training on the latches. He did not receive maintenance resource management training. Now that he knew about the latch issue, he would like to received training about that.

He was not familiar with the AD regarding the latches prior to the incident.

He received a call on Monday, September 19, about the incident airplane making an emergency landing and was told to come in to work. He saw the damage to the airplane. The Aruba Airlines rep at Miami Tech brought the latch issue to his attention and informed of the previous incidents.

He had been shown an AD for a 5 lug inspection before but it was only when they were to comply with the AD.

Since the incident, mechanics are to write in the logbook that the cowl was opened and closed in accordance with the AMM. Mechanics also take the appropriate section of the AMM with them when doing their work.

There was no pressure from Miami Tech to complete a job. He thought it was the opposite of pressure and the mechanics were told to take their time. He had previously delayed a flight for maintenance. He told the Aruba Airlines rep the reason and there was no fallout. Aruba Airlines wants the airplane to fly but it was not his fault if there was a problem.

He had never replaced an engine cowl latch before. He had never banged on a latch and had it come loose or had to readjust a latch. He had never been asked by a pilot to check a latch.

Regarding the required write up in the logbook that the cowls have been opened and closed, it was required before the incident but it was never complied with nor enforced. He was the new guy, and while not an excuse, it was not enforced by the company so he did not do it.

When he arrived at Miami Tech for a shift, he would go through the PCC and would get the line work order paperwork. Then he would go to the back office and on his supervisor's desk would be the packages organized by Aruba reps who would coordinate what work was going to be done that day. There was an Aruba rep on site at most times.

The fam course he received for Aruba Airlines included how to do paperwork, the airlines take on it; it was not extensive. He was shown the form and how to complete it.

It was his understanding that the paperwork was to only have one signature throughout.

There were no nonroutines associated with the weekly check performed on the incident airplane.

He was currently taking night classes at Miami-Dade College for aviation maintenance management. He also went to George T. Baker Aviation while in high school.

The fam training did not go step by step over the weekly form; it only covered that the form had to be completed. He thought Miami Tech hired someone to teach the training.

His understanding of the AM shift mechanic closing out the weekly paperwork, was that the mechanic would look at the paperwork and the work done. It was like an RII for the weekly check and in case any nonroutines popped up. Then the mechanic would write that it was completed in the logbook. The night shift did not write in the logbook. He had never done the morning checks when he first started and was working the AM shift. He had shadowed the AM mechanic and never saw him open or close the latches but he was only on the morning shift for a few days before transferring to the PM shift.

The AMM stated the procedure to write that the engine cowls had been opened and closed in the logbook. He had glanced through about 99% of the AMM to get his own perspective on it.

He was released to do maintenance work after he completed the fam course.

There were three Aruba Airlines reps at Miami Tech.

The procedure since the incident was that he would write that the cowls were opened and closed and then short sign it, then the AM supervisor would double check the work and close it out.

Asked what could be done to make the task of opening and closing the latches better, he thought putting VOID stickers on the cowlings after they were closed; like a quality thing.

He had nothing additional to add to the interview.

Interviewee: Ivan Prado Larrubia

Date: October 13, 2016

Location: Miami Tech Aircraft Maintenance Inc., Miami, FL

Time: 1420 edt

Present: Katherine Wilson, Pocholo Cruz – National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Orlando Amaris – Aruba Airlines; Glenn Kelly – Department of Civil Aviation of Aruba (DCA)

Mr. Larrubia was represented by Wilberth Almengor, Accountable Manager, Miami Tech.

During the interview, Mr. Larrubia stated the following:

He was the supervisor in charge for the Aruba Airlines operation. His duties and responsibilities included coordinating the work with the Aruba Airlines reps, to pass the work to the mechanics, get the parts needed, troubleshoot and anything needed to fix the airplane. He had been in this position since February 2016. He previously worked as a crew chief and before that started as a technical rep at Miami Tech in 2014. He received his A&P in 2000. He worked for multiple airlines over the years as a pilot and a mechanic. Before Miami Tech, he worked for Qantas Airlines in Los Angeles for 5 years. He was a cargo pilot in Brazil and flew the A320, A330 and B737. He had about 7000 hours total time.

On the morning of September 19, 2016, the start of his shift was normal. The Aruba Airlines flight schedule was fixed; airplanes always arrived and departed at the same time. He did a walkaround of the incident airplane and checked “everything;” all was normal. The baggage was loaded, the dispatchers came with the fuel paperwork, the truck came and fueled the airplane. The pilot also did a walkaround and checked everything, which occurred before Mr. Larrubia went to the cockpit to give his briefing. They discussed that everything was good and normal; there were no issues.

To check the cowl latches, Mr. Larrubia would lean down and look under the engine. He came in that morning around 0430. He got his flashlight and did his walkaround, connected the bridge, gave the seal for security and started the APU. He saw nothing unusual with the cowlings. On previous walkarounds, he had caught a latch for a thrust reverser not secured properly. He had never seen an engine cowl latch open or not look flush when doing a walkaround. If a latch was not closed properly, the back would be down a bit.

He only worked on the Arubu Airlines operation.

He did not have any paperwork with him during his walkaround. The paperwork from the previous night’s PM shift was left inside the airplane with the tech log. He would review the log and make sure it was signed, and someone would put in the correct ATL page and he would fill it out. In the log, he would write that the weekly or daily check was performed in accordance with the AMM.

Prior to the incident, there was no required procedure to write that the engine cowlings had been opened and closed, but it was required since the incident. Pilots would ask why they were opened

and he would tell them it was to check the oil. He never discussed this with pilots before unless there was a problem.

No mechanics were scheduled to work on the Aruba Airlines operation between 2300-0400.

The weather on September 19 was normal; there was no rain. He used a flashlight when he did his walkaround.

Mechanics would print sections of the AMM. He tried to attached the sections specific for the check to be done. Mechanics were not required to bring the AMM with them when doing their work.

His walkaround took about 20 minutes maximum and he thought he did it about 0500-0515 the morning of the incident flight. There were no interruptions when doing his walkaround. The airplane was located at the gate; it was always at the gate. He did not open or close the engine cowlings. He had opened and closed them before, a lot of times, but mostly there were issues with the thrust reversers. To check the engine latches, he would lean down. There were no issues with workload that day; it was all normal and there were no delays. He did his walkaround alone.

If mechanics from the previous shift did not complete a task, it would be noted on the paperwork. He had never caught anything that the mechanics did not do right but said they had completed.

He was off from work on Sunday, September 18. His normal shift was Monday through Friday, 0430 until 1300, if all was normal, and Saturday from 0430-1000. On Wednesday he would come in at 0330 because the airplane was scheduled to depart at 0600 rather than 0800.

He had the same routine each day he worked. He would wake up at 0230, make coffee, sit down and have a smoke, take a shower and go to work. He would go to bed at 1900, or sometimes 1800. He had no problems falling asleep or staying asleep and kept his alarm clock in the kitchen.

Friday, September 16, was a normal work day. There was nothing unusual that he could remember. On Saturday, September 17, he began work at 0430 and left before 1000. It was a routine day at work and he set up the paperwork for the Saturday and Sunday night shifts. There were two mechanics dedicated to the Aruba Airlines operation and they would also assist in the hangar if help was needed. On Sunday, September 18, he slept in until about 1000 and did routine activities before going to bed about 1900. On Monday, September 19, he did his normal routine before going to work.

Aruba Airlines determined the work to be done and Mr. Larrubia would set it up for the mechanics to do.

Regarding how mechanics were evaluated on their performance, he said newly hired mechanics would train with Mr. Larrubia for a little while. He would sometimes come in for the PM shift and walkaround to see what the mechanics were doing. He thought the younger mechanics followed the maintenance manual and did not stray too much from the procedures.

It was normal for two mechanics to complete the work on the airplane and for only one mechanic to sign the paperwork.

He had never been involved in any previous accidents or incidents, and had never been disciplined for his performance or terminated from a previous position. He had not received any commendations for his performance at Miami Tech but had when he worked in Brazil.

He had no major changes, good or bad, in his health, financial situation or personal life, in the previous 12 months.

His health was “pretty good.” He wore glasses and was wearing them during his shift on September 19. He had no issues with color vision. He had some hearing loss in his left ear but did not wear a hearing aid. He took a prescription medication for his blood pressure each morning since 2002; there were no side effects. He occasionally drank alcohol and thought the last time was a week before the incident shift. He smoked cigarettes and did not use illicit drugs. In the 72 hours before his shift the morning of the incident, he did not take any prescription or nonprescription medication that might have affected his performance.

Regarding his work with newly hired mechanics, he would show them where to find things and how to do things. It was not formal training; he was just helping the new mechanics.

He was training on the Aruba Airlines GMM and also had recurrent training for the A320. He initially received training on the A320 in 1996.

There was sometimes pressure to complete maintenance work if the airplane was full of passengers; the airline did not want the flight delayed too much. He did not think it was ever a concern for safety. He learned about the importance of safety from his time at Qantas; he had taken a lot of classes. At Miami Tech, they talked about safety and were starting SMS (safety management system).

The FAA PMA came to Miami Tech on occasion. He did not know how often.

He had done a weekly check with another mechanic before, he thought in February or March 2016. He did not receive on-the-job training but followed the paperwork and referenced the maintenance manual if he saw something was wrong.

If there was a problem during the PM shift, the mechanics would call him and wake him up. He did not have any calls during the PM shift on Sunday, September 18. The work to be completed on September 18 was set up the night before. He was only the supervisor for the Aruba Airlines operation. If Mr. Larrubia was not present at Miami Tech, the mechanics would talk to the Aruba Airline rep on site and then might call him to say they had a problem.

He had personally done the work for a weekly check several times but he could not say the exact number. Aruba Airlines had three airplanes in Miami a week that they did the weekly checks for.

He had previously told mechanics that they had to make sure the latches were latched. He told them to check the latch by banging on it to make sure there was no vibration.

He had never had an issue with a false latching or had to adjust a latch. He had had a problem on a B737 airplane a long time ago. He never had to replace a latch on an A320. He never had any issues with cowl hinges. He had not seen delamination of a cowling but he had seen the skin come off; it was on a different airplane.

He had not done a tap check on an A320.

He had composites training at Qantas.

He did not work a second job.

He did his walkaround the morning of the accident and waited for the fuel truck to arrive. The pilot did his walkaround and during that time the fuel truck arrived. The pilot said there were no issues before going up to the cockpit.

He watched the incident airplane leave the gate then went to another airplane. He learned that it lost its cowl when the airplane came back. He heard the mechanics say the airplane returned. He met the airplane and saw it was missing one cowl; he was surprised. There was about 6 inches of the cowl and the hinges still attached at the top. All four hinges were there but the bottom was gone. Soon after, the pickup truck arrived with the pieces that had been picked up from the runway. Mr. Larrubia took the pieces from the driver of the pickup trip.

The engine cowls had four latches on the bottom.

He was not involved in hiring new A&P mechanics. They received training on the GMM among other things. The work they did was hard work.

Good workers would be a lead and then would work with other mechanics. Lenny was the lead mechanic. When Lenny was off, there were other supervisors.

During the night shift, there were about 20 mechanics and 2-3 lead mechanics at Miami Tech.

He confirmed that daily checks were done mostly at night.

If the item was an RII, it required a second signature.

He signed the tech log. A walkaround was by Mr. Larrubia or another lead mechanic was not required in the morning before a flight, but it was done anyway.

He inspection of the weekly check was normal for release of the airplane. He did not know if a mechanic ever did the weekly check alone. If a mechanic could not make it in for a shift, they would pull another mechanic to assist. He was not sure if the mechanic they would pull had A320

training and did not think they had to as they were serving as “extra manpower” helping to supervise the task like opening the thrust reverser.

It was Aruba Airlines policy that mechanics receive A320 training; this was not a Miami Tech policy.

He read about the AD regarding the engine cowl latches on the internet. He remembered he received the OIT from Aruba Airlines “a long time ago” and saved it to his computer. The OIT said that it was required to make a logbook entry about the cowls being opened and closed. It was not required before the incident but was since the incident.

He sometimes helped the mechanics do the weekly checks and showed them how to do the work.

He recalled the latches on the Electra turbo prop that had a good locking mechanism that could help secure the A320 cowl latches.

He thought they had to change the procedure to make closing the latches safer.

Interviewee: Miguel Ramirez

Date: October 13, 2016

Location: Miami Tech Aircraft Maintenance Inc., Miami, FL

Time: 1553 edt

Present: Katherine Wilson, Pocholo Cruz – National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Orlando Amaris – Aruba Airlines; Glenn Kelly – Department of Civil Aviation of Aruba (DCA)

Capt. Ramirez declined representation.

During the interview, Capt. Ramirez stated the following:

He was pilot in command (PIC) on A320 airplanes at Aruba Airlines. He had about 9000 hours total time, 3000 hours on the A320 and 600 hours as PIC. He had been PIC for almost 2 years and prior to that flew in the right seat for Avianca about 4.5 years from November 2010 through January 2015. He was hired by Aruba Airlines about 2 years ago. He also held a type rating on the Citation.

On the morning of the incident, he went to the cockpit about 0630-0700. He always checked the paperwork and documentation to see if there were any maintenance issues like MELs, CDLs, OEBs. He realized the weekly check had been done the night before. He was the pilot flying for the incident flight. He and the first officer did their respective duties. The first officer did the walkaround. Capt. Ramirez always checked the maintenance logbook and he saw that the cowl panels were opened. He mentioned it to the first officer to check the panels because they had been opened. It can be difficult to see the latches, especially on an A320 and pilots almost had to lay down to see them. On the last page of the logbook he saw that the cowl had been opened; it said right/left flaps were opened. He wanted the first officer to check them twice because he was aware of instances where they did not close properly. He had been taught this at Avianca and had seen videos that damage could occur on the takeoff roll. The inner cowl would stay closed, he thought because it had a spoiler on it that deflected the air. There was no discussion about the latches at Aruba Airlines.

He had never seen a cowling latch not latched and never had another pilot come back after a walkaround and say a latch was not latched. He became aware of the AD regarding the engine cowling latches since the incident; he found out about it on his own. He was not sure if other pilots knew about it. He did not tell anyone about the AD at Aruba Airlines. There was no change in the walkaround procedure because it already included an item to check the latches.

The check of the latches was a visual check to make sure they were flush. Pilots did not shake the cowl. Since the incident he thought maybe the latches were flush but not properly latched. In the 5 years he had been flying airplanes, he only did a visual check of the latches. Since the incident, he would try to figure out how to shake them with his hand. Pilots were not supposed to open the latches.

He read in the logbook that maintenance was performed so he paid attention. He did not know what they did specifically in terms of maintenance but what mattered was to read what they did. In this case, the engine cowls were opened but he did not know what maintenance was performed. There were no maintenance issues with the incident airplane; it was “clean.”

The takeoff was normal. After about 5 minutes, he turned the seatbelt sign off and right away the cabin attendant called on the interphone to explain that a passenger was trying to get her attention on the takeoff roll because something blew off from the engine. He told her to close the cabin and call him back when he could open the door. It took a couple of minutes to do that and then she came into the cockpit and explained what the passenger said. He sent the first officer to check out the situation. Everything was normal in the cockpit. There were no issues, no leaks. He decided to continue the climb otherwise he would have to give a reason to ATC. The first officer took pictures which he showed Capt. Ramirez when he returned to the cockpit. He saw that the cowl was missing a piece but from the cabin, it was hard to see what happened. He made the decision to return to MIA based on the pictures. He leveled the flight at FL210. In accordance with company procedures, he told the first officer that he had the controls and the communications. He called ATC and said they were returning to MIA. ATC asked if he wanted to declare an emergency, but he said no. They would be performing an overweight landing per the QRH; their landing weight was calculated as 69,600 pounds and the maximum landing weight was 64,500 pounds.

When the airplane was configured for landing, he felt a little vibration in the rudder pedals. They also received an autobrake fault on the ECAM when on the final approach but he was not concerned because the procedure for an overweight landing was to use manual braking. On takeoff, they had received a landing gear EU (interface unit) fault. The ECAM procedure was to clear the ECAM and know that the reverser on the number 2 engine was not available. This was not an issue on the return to MIA. The landing was normal. When they were at the gate, he went down to figure out what happened. He was surprised by what he saw because he thought only a small part was lost.

Debris had hit the right main landing gear; there was damage to the brake line, tires 3 and 4, and landing gear number 2 system.

He did not at first think that what the passenger said about the debris had caused the other issues. He did not feel anything unusual on takeoff. It was only when they put the landing gear up that they saw the ECAM. After he saw the damage, he was in contact with the company’s director of operations and explained what happened. He then wrote it in the logbook.

A couple of minutes after takeoff, another Aruba Airlines flight departed from the same runway and called ATC to let them know they saw debris on the runway. ATC sent someone to clean up the debris and that person could tell that the debris belonged to Aruba Airlines. They had departed from runway 08R.

The flight landed on runway 09 which was the longest runway. He did not tell ATC they were doing an overweight landing because they were already assigned the longest runway. Had they been assigned a shorter runway, he would have requested a longer one.

He was unsure of what caused the rudder vibration and found out afterwards that there was no damage to the tail.

In his experience, he had learned a lot and when there was an issue with the ECAM there can be residual issues. This meant that the issue was cleared but the computer kept it in its system. To clean up that issue, they would sometimes have to shut down the system and the issue will no longer be there. He had mentioned it to the mechanics and told them that would fix the issue. Even though he had told the mechanics that, on another occasion the mechanic he interacted with did not know that. His satisfaction with the service provided by Miami Tech was 50/50. He was not sure if the repetitive issues he saw was a problem on the Miami Tech side or if the airline was not giving the money needed to buy a part. He had talked to his supervisor about it and told him this latest incident was a wakeup call. His supervisor said he would take care of it so it did not escalate.

He was not sure if the write up about the engine cowl being opened and closed was required. He would sometimes see it written when they did the weekly check and sometimes not.

He thought pilots should be informed about the AD and also receive some training on how to check the latches beyond a visual check.

Interviewee: Maurice Benjamin Cohen

Date: October 13, 2016

Location: Miami Tech Aircraft Maintenance Inc., Miami, FL

Time: 1640 edt

Present: Katherine Wilson, Pocholo Cruz – National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Orlando Amaris – Aruba Airlines; Glenn Kelly – Department of Civil Aviation of Aruba (DCA)

Mr. Cohen declined representation.

During the interview, Mr. Cohen stated the following:

He was a first officer and basic indoc instructor with Aruba Airlines. He flew the A320. He had about 1400 hours total time, about 900 hours in the A320, and about 250 hours PIC. He had been with Aruba Airlines since March 2013. He had a type rating on the A320 only.

The day of the incident was a normal day. He and the captain took the hotel shuttle to the airport. He had a coffee then they entered the gate and discussed their roles. He was going to be the pilot monitoring. His duty was to do the safety exterior inspection. He sat down and took out of his suitcase what he needed to perform the flight. When he was all organized and situated, he did a preliminary cockpit inspection. He then took his vest and ear plugs. He did the exterior inspection, looked at all panels, doors and mast. Everything seemed normal; all latches seemed to be closed, all doors were closed. The last thing he did as a part of the exterior inspection was checking the number 2 engine. He bent over to check the cowl to make sure it was flushed and latched. During his walkaround, he saw a Miami Tech mechanic in a vehicle; they made eye contact. He went back to the cockpit and the crew continued with their flow.

They dispatched the flight as normal. They taxied from gate G8 to runway 8R as instructed and departed. It was a normal takeoff. Around 5000 feet, they received an ECAM that the landing gear EU had failed. He did the ECAM actions and they checked associated systems related to that failure. The number 2 thrust reverser was inoperative. The captain said it could be spurious but they still ran the procedure. They did their flows for 10,000 feet and he was talking to ATC. The captain answered a call from the cabin. He remembered thinking the conversation was taking a long time. He finished talking to ATC and noticed the captain looked confused. He asked the captain to brief him. The captain said a passenger reported that something blew off the airplane; it was a vague story. Mr. Cohen asked for the purser to come into the cockpit and explain what she was told. She said the passenger reported something blew off the right side of the airplane. Everything was normal in the cockpit; they checked the ECAM pages, engine pages, etc. It was all normal. He asked the captain if they should level off. The captain said no, let's check the system, and selected a slower speed to give them more time.

He asked the purser if there was any visible damage, and she said according to the passenger, yes. He said let me go check and the purser stayed behind in the cockpit. The cabin crew had blocked the aisle. He went to the cabin and passengers were concerned. He looked out the window around seat 3 and could see a little piece of the engine panel that was bent over. He thought that was not

good. He went to seat 5 but could not get a better view, so he returned to seat 3 before returning to the cockpit. He told the captain that they should go back because it looked like a panel was missing or something had torn off. Mr. Cohen said he would go back to the cabin and take a picture. He took 1-2 pictures from seat 3 which he showed to the captain. The captain said that they had to go back and contacted ATC before Mr. Cohen was back in his seat. The captain did not seem to be communicating the issue well with ATC so Mr. Cohen said he had the comms and the captain had the controls. He told ATC that a panel had torn or blown off but all seemed normal in the cockpit. He thought they leveled off around FL210. ATC asked if they were declaring an emergency but he and the captain agreed not to at that time. Mr. Cohen told ATC they were not declaring an emergency but for safety wanted immediate vectors back to the airport. They got an extended downwind because they were heavy. There was a tradeoff of burning fuel or performing an overweight landing. He and the captain decided to do an overweight landing. The captain was flying and Mr. Cohen was calculating the numbers based on the ECAM fault and overweight landing procedure. On short final they got an autobrake system failure. When he did the calculations for the landing, it was already using manual braking. Maximum braking would be achieved with max manual braking. Before landing, he did a recall of the status and read the overweight landing procedure again. The captain landed the airplane perfectly. The landing was smooth and the captain did not select any reverse. Mr. Cohen called that no reverse was selected and the captain said he knew. They exited the runway around taxiway U or T5 from runway 09. At the gate, they finished their flows. He put on his vest and exited the airplane to look at the damage. He was totally surprised. Ramp personnel started asking questions. A pickup truck full of debris arrived. He thought it was strange that ATC knew the debris belonged to an Aruba Airlines airplane but did not inform the crew of what was found. Had they known that information, it would have changed their awareness of the situation. He then went back to the cockpit.

The ECAM was inhibited on takeoff until an altitude of 1500 feet.

He did not recall the captain mentioning before takeoff to look at the cowl latches. The captain read the logbook and then they discussed it. If anything needed to be checked, they would check it. On the top of the flight plan, it would list if there were any MELs. The captain also checked the ATL to see if there was anything before our flight. If he had known that a weekly check had been performed on the airplane, he would not have done anything different on his walkaround. To check the latches, he put his hand on the engine pylon and lean down to look under the engine and make sure the latches were closed. He did not back on the cowl or latches; it was just a visual check.

As an instructor, he taught a week long course. The training covered organizational structure of the course, some systems, operations manual A, and company policies. The class watched footage of how to work together, CRM, MCC, TCAS; it was a broad course. Pilots were evaluated to see if they could pass an exam after the course; they used it as a selection procedure. The course did not cover anything about the engine latches. It did cover the ATL (aircraft technical logbook) and ADD section to look at aircraft deferred defects. He had been asked by the director of maintenance to develop a MEL course.

He regularly checked the Aviation Herald, NTSB and other websites, and watched crash investigation shows. He knew there was a problem with the engine cowl latches some time ago but he did not do anything different because of that.

Since the incident, he checked the manual to see how it said to do the walkaround. There were some differences between my walkaround and what the book said so he now tried to walk the line like the manual said. He had never seen a latch not latched properly and never heard someone say they experienced that.

Prior to the accident, he knew there was an AD regarding the engine cowl latches from searching the internet, and said he knew about it “perfectly” now. There was no discussion from Aruba Airlines about information in the AD or needing to change how pilots did their walkaround. He could not recall if Aruba Airlines sent anything about the AD to pilots before the incident. They sometimes received relevant information from an AD; he could not recall if they actually received the AD itself. He thought there was an email discussing the latches and making sure they were closed as a result of an incident with another airplane sent a few months prior.

Asked whether he had any concerns about maintenance performed by Miami Tech, he said if there was an issue in the cockpit, the pilots would check the computer resets. However, some mechanics would ask the pilots how they did that. Based on some of the questions asked by mechanics, he wondered if they knew what they were doing. He thought other pilots felt similarly, but did not want to speak for all pilots.

He had never seen a false latch scenario. On the morning of the incident, all latches looked flush and there was no excessive space in the cowlings.

He never saw it written in the logbook prior to the incident that the cowl had been opened. But he saw it written last week on two different airplanes.

As the pilot who normally checks the latches, it was hard to check. They need to be seen up close but he did not know any pilot who checked the latches by lying on the ground in their uniform. The manual was clear and said to check the latches; pilots were instructed to follow the book.

He thought the circumstances of the incident should be discussed in training including that the crew could not see the severity of the damage from the air.

The crew did not feel anything unusual at takeoff. His concern was that ATC knew debris from an Aruba Airlines airplane was found but did not mention anything to them. Mr. Cohen found out from ATC tapes available on the internet that the ramp control vehicle noticed the debris was from an Aruba Airlines airplane and suggested to ATC to call back the airplane that reported the debris. ATC responded to the ramp control vehicle that there were two Aruba Airlines aircraft that had departed. However, ATC contacted that airplane but did not contact the incident airplane. Mr. Cohen wondered why they were not contacted.

Interviewee: Wilberth Almengor

Date: October 14, 2016

Location: Miami Tech Aircraft Maintenance Inc., Miami, FL

Time: 0821 edt

Present: Katherine Wilson, Pocholo Cruz – National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Orlando Amaris – Aruba Airlines; Glenn Kelly – Department of Civil Aviation of Aruba (DCA)

Mr. Almengor was represented by Myriam Restrepo, Miami Tech Training Manager.

During the interview, Mr. Almengor stated the following:

He was the accountable manager at Miami Tech Aircraft Maintenance Inc. and had been in that position since 2012. His duties and responsibilities were to interact directly with the FAA and the International Civil Aviation Authority. He did not interact with anyone from the FAA International Field Office (IFO).

Miami Tech received certification from the Aruba government and this was based on EASA requirements. Their part 145 approval was based on the FAA repair station requirements. Miami Tech was initially audited by the DCA. The FAA PMI (Eugene Jester) and PAI (Donald Schoonover) oversaw their certificate but not the international contracts.

He was hired by Miami Tech in 2002 and previously held the positions of QA director and chief inspector. He had an A&P certificate and did internal and external surveillance of Miami Tech's processes but did not do any maintenance work. He had previously done some contract work as a flight mechanic for other part 121 international operators.

Miami Tech did work for the Aruba Airlines operations for about 2 years.

He had daily direct communications with the Aruba Airlines director of maintenance (DOM) and also the maintenance representative on site. He was in contact with the DOM 3-4 times a day via email and telephone. He coordinated the tooling needed for the work to be done. The Aruba Airlines rep received a package from their headquarters, would revise it as needed and then contact Mr. Almengor to see if they had the tooling to do the work. Mr. Almengor handled the logistical work and also regulatory compliance. He oversaw other international operations in addition to Aruba Airlines.

He was scheduled to work Monday through Friday 0700 until 1530, but normally stayed later until 1700-1800. He also worked some Saturdays for 4-5 hours. The workload was the nature of the business and they had to be in the office every day to stay on top of it. He considered the workload to be normal and part of the duty. There were 4-5 pages in the Miami Tech manual that explained this. He worked with several people who helped him oversee training, etc.

Miami Tech evaluated the instructor hired to perform the training for the Aruba Airlines operation. Ms. Restrepo (his representative) was in charge of that area and Mr. Almengor sent a person to observe the training.

He oversaw quality control (QC) and QC of training. As far as training, there were two people responsible. He supervised them by observing them to verify what they were saying and not based on feedback they gave to him.

Instructors were hired externally to perform the fam training. Administrative training was done by Miami Tech. Airlines would also provide some training on their GMM, special training, etc. He did not recall who they hired to do the training for the Aruba Airlines operation. Training for Aruba Airlines, consisted of training on the GMM, which they called CAME. The Aruba Airlines DOM had performed the training as well as another person.

Any special instructions, ADs, SBs (service bulletins), task cards, etc. came from the airline. As an MRO, Miami Tech did not have a maintenance program in place. It was the airline's responsibility to send Miami Tech the necessary information.

He received the AD regarding the engine cowl latches from Aruba Airlines after the incident. Prior to the incident, Aruba Airlines sent the portion of the AMM to Miami Tech about writing in the logbook that the engine cowl latches had been opened and closed. He clarified that Miami Tech had received the entire Aruba Airlines AMM and he believed the requirement was also in the flight manual. There was an additional email sent by Aruba Airlines reinforcing the provision in the manual to make the logbook entry. He told the DOM of Miami Tech about the information from Aruba Airlines. He said if the mechanics had followed the AMM like they were supposed to, the logbook entry would have been made before the incident flight. He was expecting the mechanics to say they did it. After he told the Miami Tech DOM about the provision, he does not know what was done. This was a verbal exchange and was not documented.

Miami Tech would receive an AD only if it was to be applied; they were not sent them for informational purposes. The airline would send him the AD so that he could open the work order for billing purposes and also coordinate with the on-site rep to plan the work. The information would be sent to the planning/scheduling department. He would give the information to the technical area at Miami Tech and get the data required to perform the work. Mr. Almengor received the information to be informed that it was going to happen and apply the procedure through the rep to the technical area.

He was not aware of the AD regarding the engine cowl latches before the incident. Had he known about it, he would have told the mechanics. However, the mechanics were already crosschecking the work being done.

He had not seen this being done but heard from the DOM at Miami Tech that they would be applying speed tape on the latches to make sure they did not pop out. There were no other changes being made until the AD was complied with.

ADs were still his responsibility after he passed it along to the DOM at Miami Tech. If he did not see the DOM in person, he would send the document via email.

After he spoke with the Miami Tech DOM prior to the incident about the section of the AMM requiring a write up in the logbook, there was no follow up. He had also not spoken to the DOM about it since the incident.

Since the incident, there had been meetings to evaluate what happened and what went wrong from the Miami Tech side. They listened to different versions of the problem from different operators. There was going to be a meeting between the air carrier and Miami Tech to establish who was going to do the receiving inspection, if there were AD notes to be applied, etc.

When Miami Tech received revisions to the manual, they had an obligation to ensure that the appropriate people were told and that it be applied. This was done by Ms. Restrepo.

The email from Aruba Airlines regarding writing that the cowls had been opened and closed was informational and not a revision to the AMM. But, he felt that just because the statement was not written in the logbook of the incident flight did not mean that it was not done.

Aruba Airlines pilots did a walkaround before the flight. At other airlines, he did not think the crew did the maintenance portion of the workaround, such as checking latches.

Regarding a procedure at Miami Tech to ensure that mechanics were following procedures, he said the quality assurance (QA) department did that. The QA department made sure they had the technical data. There was a checklist that they followed and would check that mechanics had the right tooling, training, provisions in the manual, who was short signing paperwork, etc. They also had an on the job training program. They had procedures in place and used EASA form MT66. This applied to every customer and was an MRO procedure. The findings would be provided to the corresponding department and Mr. Almengor would be copied. He did not recall if there were any deficiencies or whether the QA department ever did a check of the Aruba Airlines operation. The QA checks were done "off schedule" (i.e., random) during the day or night.

He recalled complaints about 1-2 mechanics working on the Aruba Airlines operation that were not following instructions from the Aruba rep maintenance control. Those mechanics were no longer with Miami Tech. He was not aware of any complaints about the mechanics currently working on the Aruba Airlines operation.

Miami Tech hired an external company to write their SMS (safety management system) manual. There was training at three levels. Managers were trained first and they were in the process of scheduling the rest of the company. The company requested that Miami Tech write a commitment letter, make sure they had the resources to implement SMS, and answer some other questions. Miami Tech answered the company's answers in a positive way and the company will send them an application package to be a part of the SMS voluntary program. There was not a SMS safety board yet but they know they will need a couple of people for that. SMS will apply to everyone at the MRO, even the Aruba Airlines operation.

If a mechanic had a safety issue, he could talk to his supervisor or the DOM. The DOM would communicate the issue to me if he needed help. Under SMS, there will be a form that the employee can fill out that will be presented to the board. There were two forms and at least one could be completed anonymously.

Asked to describe the safety culture at Miami Tech, he said that during the past years they had an open channel of communication between employees and management. It was not intimidating and employees could speak freely of things they saw. Some employees had worked together in the industry for 20-25 years, so they knew each other. He said, Miami Tech had issues and were not perfect but it was important for them to know what their deficiencies were and to work on them.

He was not aware of the OIT sent from Aruba Airlines to Miami Tech about the latches.

It was clear to him since this incident that mechanics did not follow the manual. However, he did not believe that that had to do with the cowl latches not being closed. The safety net was the pilot. He knew this was a deficiency that Miami Tech needed to work on internally.

He thought mechanics not having the AMM with them when performing their work was a training issue; a human factors issue.

He was not sure if their QA department had done a sporadic audit of mechanics working on the Aruba Airlines operation. Aruba Airlines did their own audit but he would have to look at the records to see what their findings were. He believed that all outstanding items were completed 100%.

The FAA PMI was at Miami Tech in July 2016. The findings were that there were inconsistencies with the EASA manual. Miami Tech's manuals needed to be amended to reflect EASA procedures and current FAA regulations, specifically the A-025 paragraph to do electronic manuals and records. They recently submitted revisions. They had to do revision 21. The PMI was looking at the MRO. There was no one there from the IFO.

Mechanics received a 40-hour fam course. The MRO was approved by EASA also. There were no additional training requirements for Aruba Airlines.

There were QA, training and safety audits done once a year. A safety audit had been done since the incident. He would have to check the records to recall the findings.

The use of just one mechanic's signature on the paperwork was based on the airline requirements. If a mechanic did not have an A&P, he could not touch the logbook. A provision was accepted by the FAA that if the mechanic did not have an A&P, he could sign the paperwork based on part 43. The regulations said that whoever performed the work had to sign the paperwork. If two mechanics did the work, they would decide which one of them would sign it.

He found out about the incident from someone who called him from the hangar. He was told that the Aruba Airlines flight had returned because a cowling was missing after takeoff. Mr. Almengor

was at Miami Tech when he received the call and he immediately went to see the DOM and maintenance technician.

Asked if he reported the incident to the FAA, if it was an overseas carrier, the PMI at the FSDO did not get involved. The procedures said to report the SDR to the FAA within a given period of time. The airline submitted a written report to the IFO. He did report the incident to the PMI but the PMI had not responsibility. He also called the insurance company and the Miami Tech president was involved; the authorities were not involved.

Since the incident, mechanics have been told to double check the latches. They only told this to those mechanics working on the Aruba Airlines operations and not other operations.

Since the incident, there was no communication with mechanics to make sure they were completing the logbook as required. Mechanics were only told to review the manual, especially the provision regarding the write up in the logbook. The QA department was informed about mechanics not writing what was required in the logbook and he believed that department was looking at the logbooks every day.

Since the incident, mechanics were doing a tap test on the latches. As far as he knew, they had not found any latch issues on other airplanes.

He never opened or closed an engine cowl latch on an A320; he was a “Boeing guy.”

He was unaware that Aruba Airlines sent an email to Miami Tech stating that they were required to follow the AMM.

He was trying to stay up to date with the progress since the incident but had been out of the office for a medical injury.

Interviewee: Orlando Amaris

Date: October 14, 2016

Location: Miami Tech Aircraft Maintenance Inc., Miami, FL

Time: 1317 edt

Present: Katherine Wilson, Pocholo Cruz – National Transportation Safety Board (NTSB); Eric West – Federal Aviation Administration (FAA); Orlando Amaris – Aruba Airlines; Glenn Kelly – Department of Civil Aviation of Aruba (DCA)

Mr. Amaris declined representation.

During the interview, Mr. Amaris stated the following:

He was the director of maintenance (DOM) at Aruba Airlines and had been in that position almost 3 years. He also worked as the continuing airworthiness manager. He had over 40 years of experience working in all areas of the industry. He previously worked as a quality auditor and manager of a composite shop in Costa Rica, director of quality in Panama, and then had his own consulting company back in Costa Rica before being hired by Aruba Airlines as the DOM. He had A&P and I&A certificates. He previously performed maintenance on A320 aircraft at TACA and Copesa airlines, as well as in Panama. He had received training for the A320.

As DOM, he was responsible for maintenance and engineering. Aruba Airlines was not certified as a 145 operation so he was a DOM without mechanics; but he oversaw engineers. He also took care of logistics for purchasing parts, and managed contracts with vendors.

Aruba Airlines had been using Miami Tech to perform maintenance for almost 2 years. He was involved in selecting Miami Tech. There were two MROs approved by DCA – Commercial Jet and Miami Tech. The rates quoted by Commercial Jet were “quite high” so the decision was made to use Miami Tech which was qualified to do line maintenance on A320 aircraft by the FAA and EASA. Aruba Airlines set up the contract with Miami Tech. An MRO had to be approved by EASA to qualify as a vendor for Aruba Airlines.

Miami Tech took care of all maintenance between C checks – daily, weekly, and overnight checks in accordance with Aruba Airlines’ maintenance program. Miami Tech did not have the tools for some work so Aruba Airlines hired Mexicana to perform that work.

He performed the training at Miami Tech for mechanics and covered the manuals and policies. He brought the technical manuals with him. The Quality department did an audit, and in accordance with Aruba Airlines’ quality program, Miami Tech had to be audited at least once a year.

He did not handle the audits but he saw the findings. There were no issues identified with the QA audits but some issues were found with the safety audits. Aruba Airlines investigated Miami Tech after a tire was installed on an aircraft that was larger than it was supposed to be. The aircraft was not affected by this. The tire had been installed during the PM shift. Aruba Airlines provided some instructions and booklets so Miami Tech would know the wheels and tires being used on their aircraft. Aruba Airlines used two types of wheels on their fleet. Receiving inspectors were

supposed to have the appropriate documentation next to the receiving inspection area and on the line. There was nothing in the audits about mechanics not having the manuals with them on the line.

Aruba Airlines did not provide ADs issued by EASA to Miami Tech unless they were going to have Miami Tech apply them. Ads were not sent for informational purposes. Aruba Airlines will be acquiring a new airplane and will have to handle both FAA and EASA ADs.

Google provided a lot of information about the cowl latches. Aruba Airlines had received an OIT from Airbus earlier in the year that they circulated to their maintenance vendors. Aruba Airlines' engineering department handled that and would send all information to Mr. Almengor at Miami Tech. The engineering department was supposed to follow up with Miami Tech to determine what they did with that information. ADs were also sent along with the work order.

The engineering department would send the work orders for the next month to the Aruba Airlines rep at Miami Tech. As the airworthiness manager, Mr. Amaris would make sure the work was done as scheduled. He got an update every day and if there was something that was not done, that was an issue.

There had been cases where work could not be done for some reason, for example if Miami Tech did not have the tools, and the work had to be rescheduled. The schedule put forth by Aruba Airlines allowed some flexibility so they had time to react if something could not be done as scheduled. If something could not be done, he would contact the DCA and ask for an extension.

He learned about the latch issue probably 2 years ago. He did not know the NTSB had put out recommendations on the latches and was not sure if Miami Tech had previously completed the AD work for the previous latch ADs issued by EASA.

Aruba Airlines contracted a group in the UK to provide an assessment of ADs from EASA. The process was for the assessments to go to the Aruba Airlines engineering department and then Mr. Amaris would be briefed each week on the assessments. The assessment for the AD regarding the cowl latches was that it was applicable to Aruba Airlines aircraft and should be complied with by the compliance date. Aruba Airlines lease their aircraft, and because the aircraft would be returned prior to the 2019 compliance date, they were not going to comply with the AD.

Since the incident, Aruba Airlines had been looking at their options. They would comply with SB71-03-25 from Goodrich nacelle manufacturer which recommended inserting a pin and flag/banner on the cowls so they would know that the doors were not closed. A quote for the work had been received from Miami Tech and the work order needed to be issued.

The SB was in the AMM. It was not an option for the AD but was a small modification to be made before complying with the EASA AD for the latches

There were several other actions being taking in conjunction with the DCA because they will require changes to their manuals. A revision would be made to the daily/weekly checks and a note would be added that the engine work during the weekly check would be split and a note about

making sure there was a logbook entry that the cowls were opened and closed. A note would also be added to the layover inspection form. This information would also be included in indoctrination training.

The company hired in the UK would do the assessment of the ADs. He did not recall the exact date when Aruba Airlines received the assessment about the engine cowl latches. He found the appropriate document and said the AD came out in March 2016, Aruba Airlines received the assessment in July, and then responded about their action 1 day later.

An engineer at Aruba Airlines did an assessment of the assessment and then the decision to no comply with the AD was discussed with Mr. Amaris and also the engineering manager. They all agreed to not comply with the work before the aircraft were to be returned and sent their response to the UK company. It was required that Aruba Airlines respond to assessments received so that it could be added to their approved maintenance plan. They usually responded to assessments within a week.

There was no discussion about changing the inspection procedures based on the AD.

ADs were not shared with the flight operations department but he thought maybe they should be if there was not a negative effect.

He heard about the incident via communications from the Aruba Airlines operations control center (OCC) who told him the aircraft was returning because of a maintenance issue. He called the DCA and told them the aircraft was returning; he wanted them to know. He was keeping them in the loop until he could send them a report. It was not required but he would send the DCA a report when an aircraft returned for maintenance. OCC employees worked for Aruba Airlines.

After he received the call from the OCC, he called the Aruba Airlines rep at Miami Tech who sent him pictures. He packed his bags and came to Miami. He told the DCA what happened and said he was headed to Miami.

He notified his reps that they needed to comply with the AMM and make the logbook entry.

He learned that the mechanics were not complying with the AMM when he saw the write up after the weekly check on the incident airplane.

He did not think the Aruba Airlines QA department had come to Miami and done an audit while the mechanics were doing their work. It was difficult for them to get to the line to observe because they needed an escort to the gate. Sometimes the aircraft would be at the hangar but were usually at the gate.

Regarding the training he gave to mechanics at Miami Tech, he said it was just a presentation and he asked a few questions of the mechanics throughout to make sure they were paying attention. Training for the A320 was handled by Miami Tech. Neither he nor the Aruba Airlines reps had observed the training provided by Miami Tech.

The Aruba Airlines reps reported to him. They had not reported any safety concerns to him about Miami Tech mechanics. There were some complaints about some mechanics not following the rules. He called Mr. Almengor who said he would take care of it. Mr. Almengor would talk to the mechanics and explain what should be done and then he would brief Mr. Amaris on what he did.

The Aruba Airlines reps had access to the ramp but not access to the aircraft if passengers and cargo were on board.

Aruba Airlines had an SMS program and everybody received training. There were boxes to drop notes about risks observed. They also published a monthly letter. Maintenance was included under the SMS program.

Regarding a letter sent to the DCA that the safety department was investigating Miami Tech, he said there were many issues found but some were not related to the incident. They made some recommendations to comply with the maintenance manual requirements. They mentioned that the logbook write up was not occurring and also recommended to make the latches an RII item for a double inspection. He understood that they interviewed the mechanics who last worked on the incident airplane. He himself was not interviewed. He had the final report from the safety department but not the individual interviews with the mechanics. The safety department was separate from the maintenance department. He would sit with Miami Tech to discuss the recommendations and discuss the issues then would set up a plan to address the areas. In the meantime, he had been working on making some changes to the manuals.

Both he and someone from the engineering department reached out to Airbus in Toulouse regarding the event. Airbus had given them some recommendations and the cost to implement them. Mexicana would be bringing a team over to Miami to repair the airplane.

He was an I&A so he reported to the FAA IFO in Miramar. There was no communication with the IFO because of the incident. He sent a copy of the report to the IFO in Miramar that handled Aruba Airlines but had never talked to them or seen them. Since the incident, he received an email from the IFO saying they would be coming to visit Aruba.

Since the incident, he had seen a lot of things that were going on and a lot of things that could be improved. Prior to the incident, things were okay. There were some issues like the tire, but Miami Tech gave them good support, especially in the early stages of the operation. There were some issues with folks in the hangar not wanting to work on the aircraft because they felt the line guys should be doing that work.

There were no mechanics working for Aruba Airlines in Aruba. There was a Part 145 shop in Aruba that did transit checks for the airline. They could handle some of the scheduled work if the aircraft will be on the ground for a couple of days.

Miami Tech mechanics were not required to have an Aruba X1 equivalent.

Mr. Amaris reported to the Aruba Airlines accountable manager.

Asked if there was anything he would like to add to the interview, he said there were many things that they needed to change and improve, and they needed to keep an eye on their vendors.