

Factual Report – Attachment 1

Interview Summaries

AIR TRAFFIC CONTROL

CEN20FA032

Interviewee: Stephen David Christo
Representative: Chris Parris

Date / Time: December 17, 2019 / 1230 central standard time (CST)
Location: Houston Air Route Traffic Control Center (ZHU ARTCC)
Present: Miguel Montgomery; Karena Marinas
Investigator: Charles Olvis

During the interview Mr. Christo said the following:

Mr. Stephen Christo began working for the FAA in March 2016. He graduated from the FAA training facility in Oklahoma City Oklahoma in July 2016, and immediately reported to Houston ARTCC (ZHU), where he began training. He was a trainee, certified as a radar controller on the Brownsville, Three Rivers, and Randolph sectors in the Corpus Christi Specialty. He had been certified on all three sectors for about three months. His Operational Supervisor (OS) was Ryan Jorgensen.

Prior to the FAA, Mr. Christo attended Beaver College. He was a recreational pilot, but, had not exercised those privileges for the past eight years. His ATC medical was current with no restrictions.

On Monday, December 9, 2019, Mr. Christo had worked a 1330 to 2130 shift. He recalled the sector had about three airplanes on the frequency when he received the position relief briefing from the previous controller. He said MRA679 was on frequency and had been radar identified by the previous controller. The airplane was not tracking direct the fix GMANN¹ as the airplane had been cleared. The relieved controller moved over to assume the D-Side position to make sure everything was straightened out and because that airplane call sign flew that route daily. Also, because the VCT tower controller had said this flight was having problems. Mr. Christo said that he continued working traffic, handing aircraft off to Corpus Christi. He again noticed MRA679 was not going direct GMANN and re-cleared the airplane direct GMANN.

Mr. Christo said that the airplane should have been cleared direct GMANN by the tower, but he witnessed the airplane turning left and right. Mr. Christo issued a heading of 035, which he obtained by using the function key for range bearing. The typical procedure for airplane departing VCT toward GMANN was to climb the airplane to six thousand feet and hand them off to the next sector so Mr. Christo thought climbing the airplane was appropriate.

Mr. Christo related that he could not understand what the pilot was saying because the pilot's voice was soft, and his transmissions were short. He said that he normally did not have an issue hearing or understanding pilots because he worked many foreign and military pilots, which could be harder to understand at times, but typically did not pose any issues for him. Once he realized there was a navigation issue, he related that he tried to get the airplane to go back to VCT airport. Mr. Christo asked the pilot twice to go back to VCT but couldn't understand the pilot's responses.

¹ GMANN is an RNAV fix on the DUUUK3 arrival into IAH.

Mr. Christo asked the pilot if he had the field in sight because he believed a visual approach would be the safest approach but couldn't understand the pilot's reply. He recalled turning to ask the controller plugged in behind him, as well as the D-Side controller, what the pilot had said, and they thought the pilot had the airport in sight. However, after clearing the airplane for a visual approach, another pilot who had just departed out of VCT said he couldn't see very well as it was very hazy. This prompted Mr. Christo to again ask MRA679 if the airport was in sight to which the pilot replied negative, so Mr. Christo decided to use an IFR approach. Mr. Christo remembered Mr. Strickland, who was also a pilot, taking over the sector. Mr. Christo recalled traffic was increasing at that time.

When asked if he thought MRA679 was having difficulty, Mr. Christo said he thought it wasn't unusual for an airplane to be off course because the pilot could enter in a wrong route or a mistake was made. He said that "/A" equipment capabilities meant they were not RNAV capable. Mr. Christo said that he could click on the callsign in en route automation modernization (ERAM)² and would get the flight information, including equipment suffix, but didn't normally look specifically at the equipment suffix. He felt they could usually navigate the way they were expected to, and that it was not normal to see a "/A" airplane.

When asked specifically about MRA679's equipment suffix, Mr. Christo said that the Corpus Specialty controllers worked that flight often; as many as four times per week, and they would always take direct GMANN and fly the RNAV approaches. Mr. Christo said that he didn't know how they did it and didn't know anything about handheld GPS units. He said that he had been trained that the routing for those aircraft was VCT direct GMANN and the DUUUK arrival into IAH.

Mr. Christo said that he never thought the airplane was an emergency because the pilot didn't indicate that there was an emergency, and, because he couldn't understand what the pilot was saying. He said that he knew something was wrong because the airplane kept going left and right and left again. Mr. Christo said that he never asked if the pilot was experiencing an emergency and nobody suggested to him that the airplane was in emergency status. Mr. Christo said that both the controller and pilot could declare an emergency, if they believed an emergency existed.

Mr. Christo was asked why he asked the pilot if he was RNAV capable and he responded that he was training at new sectors with RNAV approaches and it has become a habit for him to ask.

Mr. Christo said he had been trained to pull up the emergency checklist and follow the checklist for emergencies. He also said that ZHU had training lab scenarios for emergencies that included building complexity and an emergency in the middle of the scenario once or twice per year. He remembered receiving pamphlets on equipment suffix training when he first started at ZHU but didn't recall any training since. He did feel that he had received extensive training in approach control services during on-the-job training (OJTI) which included radar identifying aircraft, minimum vectoring altitudes (MVAs), vectoring, and clearing aircraft for approaches. He also remembered practicing sequencing into VCT and Laredo (LRD) in the simulated training lab.

² The ERAM system processes flight and surveillance data and provides communications and generates display data to air traffic controllers.

Mr. Christo was asked about the airplane's route and he said that the airplane normally flew a departure heading off VCT then direct GMANN and normally filed direct GMANN and the DUUUK arrival. He said the slant alpha aircraft were normally able to fly direct GMANN.

Mr. Christo said that he had no indication that the visibility was as bad as it was until the Boutique Airways flight pilot mentioned the visibility. He said that he normally received weather for VCT through pilot reports (PIREPs), calling the tower controllers on the landline or using the weather request function in ERAM. He had never experienced a difference between the reported weather at VCT and what pilots had reported prior to the accident.

Mr. Christo related that he had never worked aircraft in or out of VCT after the tower closed at night, which was usually around 10 o'clock pm local. He believed the airport was treated as uncontrolled after that time.

Interview concluded at 1335 CST.

Interviewee: Jesse Strickland

Representative: Chris Parris

Date / Time: December 17, 2019 / 1600 CST

Location: Houston Air Route Traffic Control Center (ZHU ARTCC)

Present: Miguel Montgomery, Karena Marinas

Investigator: Charles Olvis

During the interview Mr. Strickland said the following:

Mr. Strickland began working for the FAA in December 2007 reporting to the FAA's training facility in Oklahoma City, OK. He attended the enroute course and graduated in March 2008 and reported to ZHU. Mr. Strickland was qualified in the Corpus Christi area and certified on all sectors. He earned an instrument pilot rating from Central Missouri State University in 2005 but was not current. He maintained his private pilot's license through 2017, however was no longer current. His medical was current with no restrictions.

Mr. Strickland's supervisor was Ryan Jorgensen. His regular days off (RDO) were Saturday and Sunday, and his schedule was Mondays from 1500 to 2300, Tuesdays from 1330 to 2130, Wednesday from 0800 to 1600, Thursdays from 0700 to 1500, and Fridays from 0600 to 1400.

Mr. Strickland said he came off a break, ran through the break list to determine who would be next. Mr. Christo was due, so Mr. Strickland went to the sector to plug in and listen to the activity. He said that Martinaire flight 679 (MRA679) was already having issues and said that he observed the target moving erratically. Mr. Christo and Mr. Davila were trying to figure out what the issue was with MRA679 and figure out what they needed to do to assist the pilot. Mr. Davila asked Mr. Strickland and Mr. Christo if no-gyro vectors would be appropriate, Mr. Strickland replied that they could give it a shot. It was Mr. Strickland's opinion that Mr. Christo did not

understand no-gyro vectors. Mr. Strickland asked Mr. Christo “do you have this?” referring to the issues with MRA679. Mr. Christo replied that he didn’t know what to do, so Mr. Strickland stepped in and began working the traffic. Mr. Strickland said that he wanted to find out which way the pilot was turning but the target had gone into “Coast”³ mode and the accident had occurred.

Mr. Strickland vectored BOMR816 (Boomer816) toward the last known position of MRA679 and to maintain 4,000 feet. The pilot of BOMR816 replied that he was in instrument meteorological conditions (IMC) at 4,000 feet and advised they would need lower. After conferring with the operations supervisor Mr. Jorgensen, Mr. Strickland descended BOMR816 to 1,800 feet. After BOMR816 had descended and near the accident location, the pilot reported he was still IMC but could see some lights on the ground. The airplane departed and then returned to Corpus Christi Naval Air Station/Truax Field (NGP).

Mr. Strickland said that after he assumed the operating position, his plan was to get MRA679 to maintain an altitude and some sort of stable heading. He planned to talk to him plain English because the pilot was very difficult to understand. He wanted to see if the pilot could level the airplane wings and issue no-gyro vectors to get back to the VCT airport.

Mr. Strickland said the pilot was very difficult to understand. He remembered saying “what is wrong with this guy, he sounds like he is drunk.” He added that the transmission quality was fine, it was the pilot himself who was hard to understand. This was mostly due to his accent, but some transmissions were quiet and that the pilot sounded like he was not forming his words correctly. Every time the pilot transmitted, Mr. Strickland, Mr. Christo, and Mr. Davila would ask each other “what did he say?” Mr. Christo had asked the pilot of MRA679 two times if the pilot could accept the RNAV approach into VCT. None of the controllers could understand the first response, but the second time they all heard “affirmative”.

The weather had been VFR that evening and the last weather report Mr. Strickland had seen reported a ceiling of 4,700 to 4,900 feet and the visibility was about 6 statute miles. He became concerned about the weather after he had called the VCT tower to ask if they had seen anything regarding MRA679. The VCT controller responded that the weather was moving in and the visibility was low. He recalled that a previous departure had transmitted that it would be difficult to see the airport because of haze.

Mr. Strickland said that an airplane with an equipment suffix of “/A” had traditional navigation capabilities like VOR and was not able to conduct RNAV navigation. He added that the normal route for Martinaire aircraft flying from VCT to Houston Intercontinental Airport (IAH) was VCT direct GMANN then the DUUUK3 arrival into IAH. Mr. Strickland said that this was the Host Embedded Route Text (HERT)⁴. He added that the HERT routing that is shown on ERAM is what is issued to the tower who will issue to the pilot. Mr. Strickland said that there have been times in the past that ZHU controllers had vectored pilots to intercept a radial to the

³ The aircraft is in coast status and blinks when a flight's position is frozen, and “CST” is eligible for display in Field E of the data block. The position symbol becomes #.

⁴ Now known as Embedded Route Text (ERT) derived from programmed Adapted Departure Arrival Routes (ADARs) input by the airspace and procedures specialist at ZHU.

intersection GMANN, however, all the Martinaire pilots now take direct GMANN. Mr. Strickland thought that it may be because of handheld GPS systems.

Mr. Strickland said he could not recall the emergency training he had received from the FAA training facility. He added that controllers in ZHU do train in Dynamic Simulator (DYSIM)⁵ for emergency situations, and that they included hijack procedures and engine failures. He could not remember any other scenarios or situations trained.

Mr. Strickland said he was treating the airplane as an emergency; that the pilot had our undivided attention. He felt like the pilot was “fighting the airplane”. Mr. Strickland said it looked like the airplane was in some sort of spin and fighting hard against the pilot.

Mr. Jorgensen had been at the adjacent radar display and Mr. Strickland thought he had been “quick looking” at the other radar display. The first time Mr. Strickland knew that Mr. Jorgensen was close by was when he asked Mr. Jorgensen if he could take the BOMR816 down to 1,800 feet.

Mr. Strickland said that he had not been interviewed or spoke with for the Covered Event Review (CER)⁶.

Interview concluded at 1645 CST.

Interviewee: David Orlando Davila

Representative: Chris Parris

Date / Time: December 18, 2019 / 0830 CST

Location: Houston Air Route Traffic Control Center (ZHU ARTCC)

Present: Miguel Montgomery, Karena Marinas

Investigator: Charles Olvis

During the interview, Mr. Davila related the following:

Mr. Davila began working for the FAA in December 2005 as a direct hire. He attended En Route training at the FAA training facility in Oklahoma City, Oklahoma. Mr. Davila graduated the Academy in March 2006 and was placed in the Cleveland Air Route Traffic Control Center (ZOB). Mr. Davila transferred from ZOB to ZHU in May 2017 and was assigned to the Corpus Christi Specialty. Mr. Davila was qualified as a Certified Professional Controller on all sectors in the Corpus Christi Specialty.

⁵ DYSIM is an air traffic control simulator using the ERAM platform.

⁶ The intent of a CER is to supplement and document the existing required review of air traffic services rendered during an aircraft accident. In addition, CERs require service delivery points to review each accident in-depth, looking beyond the areas of individual performance. A CER must include a review of all aspects of service (individual performance, equipment issues, weather, etc.) and identify any issues that cannot be ruled out as potentially contributing to the accident.

Prior to joining the FAA, Mr. Davila served in the United States Navy (USN) as an air traffic controller, and was stationed at Pensacola Naval Air Station, in addition to Sigonella, Italy, and Corpus Christi Naval Air Station. After leaving the USN, Mr. Davila worked at the McAllen (MFE) Airport as a federal contract controller. His ATC medical was current with a restriction to have eyeglasses or contact lenses in his possession while performing duties. Mr. Davila said he was wearing the corrective lenses the night of the accident.

On Monday, December 9, 2019, Mr. Davila was working a 1330 to 2130 shift and was assigned the R58 position. Mr. Davila said Martinare 679 (MRA679) was previously issued a departure clearance off the VCT airport to IAH by the previous ZHU R58 controller. The VCT controller called and requested a release for MRA679 and Mr. Davila issued the release with the flight cleared to 3,000 feet.

Mr. Davila described the traffic volume as light, not difficult, with only a couple of aircraft on frequency. He said he was not on position long when Mr. Christo relieved him. A position relief briefing occurred, and Mr. Davila "slid" over to the radar associate (RA) position or D-side, to make sure everything was ok.

During the position relief, the VCT controller had called with a departure message for MRA679. Mr. Davila said that the VCT tower controller said MRA679 "was a winner." Mr. Davila said that he briefed Mr. Christo to be vigilant on MRA679, and it was probably good that the tower warned them; that he would have left the area after the post-position briefing. He felt that if you have someone not on par, you have a duty to let the other controller know.

Mr. Davila was not assigned the D-side position; however, he remained on the D-side position and called the inbound airplane BOMR816 to VCT tower. He then noticed MRA679 flying erratic headings. Mr. Davila said he observed MRA679 headed one way (hand gestured to the northeast) and then headed a different direction (hand gestured southwest), like it was a bad radar hit. He described the flight track as odd and rapidly changing. He said that he believed Mr. Christo asked MRA679 what their heading was, and the transmissions from the pilot were terrible; not just the accent, but the radios were scratchy.

Mr. Davila said Mr. Christo instructed MRA679 to fly heading 035 and the airplane responded. Mr. Davila released BTQ465 on runway heading because MRA679 appeared to be moving northeast bound, away from VCT. BTQ465 was on the same routing to IAH as MRA679. Mr. Davila recalled thinking that Mr. Christo would have to issue no-gyro vectors to MRA679 but did not believe Mr. Christo understood how to issue no-gyro vectors.

Mr. Davila said that at one point it looked like MRA679 was pointed direct to VCT and Mr. Christo asked the pilot twice if they would like to return to VCT. Mr. Davila said the pilot responded the first time that they would like to continue to the Houston (IAH) Airport, but the second time the pilot requested to return to VCT.

Mr. Davila said that he believed that if ATC could get the pilot to report the airport in sight, ZHU could clear the pilot for the visual approach. He remembered BTQ465 transmitting that if the pilot was not familiar with the airport, he would not be able to see it due to haze. Mr. Davila

said the VCT tower was still advertising visual approaches and he pulled up the VCT weather and it still looked good. Mr. Davila said he told Mr. Christo that they would have to issue no-gyro vectors to the airplane, then remembered Mr. Strickland walked in behind them and asked what was going on.

Mr. Davila said that Mr. Christo didn't seem too comfortable with the event, so Mr. Strickland plugged in to attempt to issue no-gyro vectors. Mr. Davila remembered before Mr. Strickland plugged in, the airplane indicated an altitude of 2,400 feet, and then "X-ed out" (indicating loss of altitude information). Mr. Strickland attempted to contact the airplane several times without success. Mr. Davila said that they requested assistance from BTQ465 to overfly the area of the data block loss; however, BTQ465 said they had passengers and could not assist. The team enlisted the aid of BOMR816, who was vectored to the area at 4,000 feet, then instructed to descend to 1,800 feet. Mr. Davila described getting coordinates for the area of radar loss by "picking" (using the trackball mouse). BOMR816 was unable to see anything at 4,000 feet and the OS (Ryan Jorgensen) came over to advise that there were a couple of reports of a crash in the area. That's when the team went from attempting to assist the airplane, to a search-and-rescue mode. They descended BOMR816 to 1,800 feet but the pilot was only able to see a few lights and that it was IMC at 1,800 feet.

When asked what Mr. Davila's understanding of /A airplane was, he said that the airplane could not go point-to point, and he understood that MRA679 was a /A equipped airplane. Mr. Davila was asked if it was typical for /A aircraft to fly direct to the GMANN intersection and he responded that he never had a Martinaire airplane say they couldn't. He said he normally cleared aircraft as filed unless he needed to for spacing. If he were to clear /A aircraft direct to an intersection, he would first ask if they could fly the RNAV approach before clearing them. Mr. Davila was asked about expectation for aircraft with the HERT routing, he said he was not certain on acknowledgement of the routing; however, he did not expect the airplane to come off of the filed route. Mr. Davila was asked if he was aware of any standards developed for OJT to go over specific items. He responded that they have checklists for Direct Access Radar Channel (DARC)⁷, Equipment, mid-shift, as well as the FAA Form 3120-25 ATC/ARTCC OJT Instruction/Evaluation Report. He said that when it's slow, as an OJTI, he would go over "what would you do if" situations. Mr. Davila briefed that the training that developmental controllers receive was tests on map drawing, LOAs, lab scenarios at least every year to go over unusual situations such as hijacks.

Mr. Davila said that during the event, Mr. Jorgensen was at the OS desk, not monitoring the situation, explaining it was a slow night with not a lot going on. Mr. Davila said when he saw MRA679 flying erratically, he advised Mr. Jorgensen they have a situation. Mr. Davila was asked if they ever considered declaring an emergency for the pilot, to which he responded that he did; however, there were a couple of times when the airplane appeared to be back on course. Mr. Davila said he did not remember the plot saying that he had an issue.

Interview concluded at 1015 CST.

⁷ DARC is a backup system to be switched on when the primary radar processing system failed or was turned off for maintenance.

Interviewee: Marl Allison Chiles
Representative: Matt Smith

Date / Time: December 18, 2019 / 1130 CST
Location: Houston Air Route Traffic Control Center (ZHU ARTCC)
Present: Miguel Montgomery, Karena Marinas
Investigator: Charles Olvis

During the interview, Mr. Chiles related the following:

Mr. Chiles began working for the FAA in September 1982 and graduated from the FAA training facility in Oklahoma City Oklahoma in December 1982. He reported to ZHU in January 1983, where he began training at the facility. Over the course of his time at ZHU he had been certified in the Lake Charles, Ocean and New Orleans Specialties, in addition to other specialties that no longer existed due to facility airspace changes. At the time of the interview, Mr. Chiles was the Acting Support Manager of Training for Houston Center and Houston District.

Mr. Chiles did not have prior military experience, had no other aeronautical licenses, and did not hold a current medical, because it was not required. Mr. Chiles' regular days off were Saturday and Sunday and he worked 0700 until 1530, Monday through Friday.

Mr. Chiles was asked to describe the training process at ZHU for developmental controllers who had arrived from the FAA training facility. He said that both FAA training facility graduates and certified professional controllers in training (CPC ITs) went through the same process when they began training at ZHU.

First, they had attended stage two training which was assistant controller training and covered facility-wide airspace knowledge. This was followed by OJT within the specialty.

Next, they attended stage three training, which was radar associate training. It covered the rules, such as equipment suffix training, and separation training for a controller and included specialty-specific criteria and inter- and intra-facility procedures. Classroom portions were followed with simulation training and graded evaluations to demonstrate knowledge. This stage was concluded with sector-specific OJT.

Finally, stage four training was radar position training, which included academics and classroom lecture on separation criteria and review of procedures specific to their specialty as they applied to radar air traffic control. Again, this was followed by simulation training, culminating in evaluation problems. Developmental's then transitioned to OJT radar training on specific sector assignments, which led to certification.

Mr. Chiles said each area had different time criteria for developmental's who reached full certification because there were many different factors affecting each specific specialty, including varying total numbers of sectors. For instance, the Corpus Christi specialty had more sectors and typically took longer to certify developmental's.

When asked, Mr. Chiles said that Skill Enhancement Training (SET⁸) was always available to developmental's throughout stage three and four training. The OS on the training team normally requested it after a training meeting had occurred, to determine what SET was needed. However, he did state that the training department had offered ideas for types of SET available when training teams asked.

Depending on that request, the training department may have received a worksheet for simulation exercises, with specific requests based on the discretion of the Training Team. The request did not require an approval from the training department, rather, it was a way to allow for the training department to work on accommodating the request. The SET form would be included in the developmental's training package until certification. Mr. Chiles said that SET simulated problems were checked annually and updated, as often as needed.

Mr. Chiles was not familiar with Mr. Christo's training, specifically. He couldn't recall if Mr. Christo had SET during his training. The training department received the training Team meeting forms for record keeping. They were not reviewed by the training manager.

Mr. Chiles was asked why a training team meeting form for Mr. Christo was dated after he had been signed off on one of the sectors listed on the form. Mr. Chiles did not know but said that it had come from the CEDAR program, which was known not to be user-friendly, and assumed it was a mistake.

When asked about the simulated lab exercises, Mr. Chiles said the training department was responsible for creating them along with Science Applications International Corporation (SAIC)⁹ and maintaining the associated records. When changes were needed, subject matter experts (SMEs) would be consulted from each specialty. Further, he said that simulation training instructors would instruct a developmental on /A capable airplane limitations, if they tried to give an airplane with a /A suffix direct to a fix. He also said that emergency procedures were trained throughout every level of training but couldn't recall whether there was specific training on how and when to declare an emergency for a pilot.

Mr. Chiles was asked whether there were any specific criteria laid out, such as a checklist for OJT instruction items, to be covered before certification. He said that there was no requirement for such a document.

Mr. Chiles said that refresher training was administered from the training department and included two parts: An annual two hour simulated training for unusual situations and ongoing monthly CBI¹⁰, eLMS¹¹, and classroom training. The most recent annual simulated training had taken place between May and October of 2019. He believed most operational personnel had participated.

⁸ The purpose of SET is to improve an individual's knowledge, skills, and abilities, and may be assigned to individuals certified on at least one position.

⁹ Science Applications International Corporation is an American company headquartered in Reston, Virginia that provides government services and information technology support. They contract with the FAA to provide training support to the FAA.

¹⁰ Computer based instruction

¹¹ Online courses available to FAA employees.

The interview concluded at 1245 CST.

Interviewee: Ryan Wayne Jorgensen

Representative: Matt Smith

Date / Time: December 18, 2019 / 1420 CST

Location: Houston Air Route Traffic Control Center (ZHU ARTCC)

Present: Miguel Montgomery, Karena Marinas

Investigator: Charles Olvis

During the interview, Mr. Jorgensen related the following:

Mr. Jorgensen began working for the FAA in January 2009 reporting to the FAA training facility in Oklahoma City, Oklahoma. He graduated from the enroute course in May 2009 and reported to ZHU. He was a certified professional controller in the New Orleans specialty. In 2016, Mr. Jorgensen began working in the traffic management unit and in 2019 became an operations supervisor in the Corpus Christi specialty.

Mr. Jorgensen did not have any prior ATC experience and did not hold any aeronautical licenses. His medical was current with no restrictions and his supervisor was Mr. Brian Pair.

Mr. Jorgensen's RDO's were Saturday and Sunday. On Monday he worked 1400 to 2200, on Tuesday he worked 1400 to 2200, on Wednesday he worked 1000 to 1800, on Thursday he worked 0600 to 1400, and on Fridays he worked a 0600 to 1400 or a mid-shift.

On the date of the accident Mr. Jorgensen was working a scheduled 1400 to 2200 shift. When he first became aware that MRA679 was having difficulty, he was sitting at the supervisor desk conducting administrative tasks. The area had combined to 3 scopes due to reduced traffic load. Mr. Jorgensen became aware something was going on the R58 sector when he observed Mr. Davila slide over to the radar associate position next to Mr. Christo and said something "squirrely was going on". Mr. Jorgensen moved over to the empty radar display next to the supervisor's desk and "quick looked" the R58 position and monitored the position.

Mr. Jorgensen said something wasn't normal about MRA679. He heard Mr. Christo say something about "I show you southbound" and then Mr. Davila turned to Mr. Jorgensen and said they had something going on. Mr. Jorgensen left the area and walked down to the operations manager to brief him and the Supervisory Traffic Management Coordinator (STMC) on what was happening and to assist them with monitoring the area from the operational manager (OM) desk. Mr. Jorgensen walked back to the area and stood behind the sector to watch what was happening. Mr. Jorgensen did not provide guidance or direction to the controllers working MRA679. He said they had already come up with a plan to work the flight back into VCT.

Mr. Jorgensen understood the plan was to try and get MRA679 back to VCT. He said MRA679 had made circles and the airplane altitude had been erratic. He said the altitude was rapidly changing up and down.

At that time Mr. Christo was still on the operating position, Mr. Strickland was plugged into the same position, and Mr. Davila was plugged into the "D" side. M. Jorgensen added that there had been a CPC plugged into the radar display adjacent to Mr. Christo and was observing, and there was another CPC standing back also observing.

Mr. Jorgensen said that one of the controllers mentioned using no-gyro vectors to get the pilot back to VCT. He did not hear the communications with the airplane, only what the controllers were saying. When the airplane was lost on radar, Mr. Jorgensen walked down to the OM's desk and notified the OM that there was a problem and that search, and rescue (SAR) needed to be initiated. He said the alert notice (ALNOT) process was left to the OM.

Mr. Jorgensen said that he instructed Mr. Davila to call VCT to see if the airplane had returned to VCT, the VCT controller advised it had not returned. There had been a BOMR816 conducting practice approaches at VCT. The airplane had gone on the outbound leg about 30 to 40 miles and Mr. Strickland vectored the airplane to the last known position at 1,800 feet. The pilot of BOMR816 reported they could not see anything, only a few lights on the ground. Mr. Jorgensen did not remember anyone asking him if they could descend BOMR816 to 1,800 feet.

Mr. Jorgensen said that Mr. Christo was certified on the three low sectors that had been combined. He considered most developmental's as having to be watched, that that was the process. Mr. Jorgensen said that Mr. Christo did not need to be watched due to the low traffic volume.

Mr. Jorgensen was appointed to Mr. Christo's training team in February 2019. He said that Mr. Christo had the same training deficiencies that most trainees had, scan etc. Mr. Jorgensen was asked about the training team notes annotating positive separation. He said that was referring to protecting for the loss of radar and keeping aircraft separated. Mr. Jorgensen said that he requested a training extension on Mr. Christo to allow for more time to observe his training. He had just picked him up on the training team in February and needed more time to observe, that Mr. Christo was not necessarily deficient in his progress. He said the normal practice was to allow 30 extra hours per sector.

When Mr. Christo was qualified in September 2019, he was nearing the end of the training extension. Mr. Jorgensen did not have any reservations about certifying Mr. Christo. He said that Mr. Christo met the standard and was qualified; he had demonstrated safety while on position. He did not know what the standard was or if there was one to follow. Mr. Jorgensen had not observed any of Mr. Christo's dynamic simulations. Mr. Jorgensen said he never thought that Mr. Christo would not be successful in the training program.

Mr. Jorgensen said that Mr. Christo's training team had recommended and requested SET for Mr. Christo. He said that the training team would request the SET and the training department would try and accommodate. He said that he had never had an occasion where the training department could not accommodate SET. He said that after the SET was administered, Mr. Christo showed improvement.

Mr. Jorgensen was able to describe the navigation capability of a /A equipped airplane. He said that they could fly airways and VOR's. Mr. Jorgensen maintained 8 hours a month proficiency in the Eagle Lake specialty, and usually exceeded 8 hours a month. Mr. Jorgensen said that he conducted skills check for developmental controllers.

Mr. Jorgensen said that he was familiar with the Martinaire airplane coming off direct GMANN and that he would not correct controllers who had incorrectly assigned it to a /A. He said that he would wait to see how the pilot would respond before saying anything. Mr. Jorgensen said he might remind the controller he was a /A. If a pilot accepted the clearance, then it was fine. Mr. Jorgensen was then asked if that was the case then what was the need for putting the equipment suffix on the flight strip. He responded so a controller would know "what's what".

Mr. Jorgensen said that the weather at VCT only became known after the controllers had pulled it up on the radar display. He believed the ceilings were reported as 4,700 feet. He could not remember if BOMR816 had indicated the ceiling was below 4,700 feet. Mr. Jorgensen had not requested the controllers solicit PIREP's before or after the accident.

Mr. Jorgensen said that he thought the pilot was having difficulty steering the airplane or maintaining altitude. Although no one had declared an emergency on frequency, Mr. Jorgensen said that the controllers were treating it as an emergency. They were making the situation the highest priority. He said that all the controllers were offering suggestions but that it was not an overload situation. Mr. Strickland had taken over the position because he was more experienced and was a pilot.

Mr. Jorgensen said that the refresher training included emergencies, bird strikes, and merging target procedures.

Mr. Jorgensen said that the quality control (QC) manager had spoken with him about the accident on Monday or Tuesday but did not know if it was for the CER.

The interview concluded at 1530 CST.

Interviewee: Jason Ronald Bottino

Representative: Shannon Zelkowski

Date / Time: December 19, 2019 / 1220 CST

Location: Victoria Air Traffic Control Tower (ATCT)

Present: Miguel Montgomery, Karena Marinas

Investigator: Charles Olvis

During the interview, Mr. Bottino related the following:

Mr. Bottino began working for the CI2 Aviation company in April of 2017 as an Air Traffic Controller. Prior to CI2, Mr. Bottino worked for Serco from July 2016 through March 2017 in Bethel, Alaska and for DynCorp in Jalalabad, Afghanistan from June 2015 through July 2016. Prior to that, Mr. Bottino was an Air Traffic Controller in the USN from June 1994 through July

2014, where he worked at Naval Air Station Corpus Christi (NGP) and served onboard the USS John F. Kennedy.

At the time of the interview, Mr. Bottino was qualified as a Controller in Charge (CIC), had no other aeronautical licenses and had a current FAA medical certificate with a restriction to wear corrective lenses which he was wearing the day of the accident. His supervisor was Jack Lill and his RDOs were Friday and Saturday. His regularly working schedule was from 0645 to 1445 on Sunday, and 1415 to 2215 from Monday through Thursday.

When asked about the night of the accident, Mr. Bottino said that he was working three U.S. Navy Texan airplanes in the left pattern for runway 13 left. MRA679 called and requested an IFR clearance to IAH. Mr. Bottino issued the IFR clearance that he had already obtained from ZHU. Mr. Bottino said the clearance was VCT direct to GMANN and the DUUUK3 arrival, climbing to 6,000 feet. He said that the pilot read the clearance back correctly.

At that time, Mr. Bottino said that he went back to working the pattern. A Boutique Airways airplane pilot and a BOMR730 pilot called for their clearance and then MRA679 called for taxi instructions with the current ATIS information. Mr. Bottino taxied MRA679 to runway 13 Left at Bravo intersection and continued working the traffic pattern.

Mr. Bottino recalled that a couple of minutes later MRA679 called and said that he was holding short of runway 31 Left. Mr. Bottino told the pilot of MRA679 that he had taxied to the wrong runway and instructed him to taxi back to the correct runway. On his way back to the correct runway, the pilot asked if he could depart runway 13 right and Mr. Bottino denied the request.

Mr. Bottino then recalled the Boutique Airways flight reported that they were ready to taxi, and Mr. Bottino gave the airplane runway 13 Left, full length. Subsequently, BOMR730 called and Mr. Bottino gave the pilot taxi instructions to runway 13 Left at Bravo intersection.

When the MRA679 pilot called that he was ready for takeoff, Mr. Bottino called ZHU sector 58 and requested release. ZHU granted release on course and climbing to 3000 feet. Mr. Bottino then cleared MRA679 for takeoff. Once MRA679 departed, Mr. Bottino switched communications to ZHU and continued working the pattern and waiting on a release from ZHU for a Boutique Airways flight.

Mr. Bottino said that ZHU called him back on the landline to give him information on an inbound Texan and relate that MRA679 was not taking their direction. Then ZHU released the Boutique Airways flight on a heading of 180, climbing to 3000 feet to keep him away from MRA679, who was turning back toward the airport. Mr. Bottino then cleared the Boutique Airways flight for takeoff. ZHU called again and said that MRA679 was having issues and they were going to bring the airplane back to VCT. Mr. Bottino asked the pilot of BOMR730 if he wanted to go VFR and the pilot responded yes.

ZHU called Mr. Bottino again to say they were bringing MRA679 back toward VCT with a visual approach and Mr. Bottino planned to issue the pilot right traffic for the airport. Mr. Bottino attempted several times to contact the pilot of MRA679 but there was no contact. Mr. Bottino said

that BOMR730 departed VFR and he asked the pilot if he heard an emergency locator transmitter (ELT)¹², to which the pilot replied in the negative. At that time, Mr. Bottino looked out from the air traffic control tower and saw some police cars with emergency lights flashing along the highway. He called the Sheriff's office and asked if they had any reports of a crash. The Sheriff advised they had several reports of an airplane accident.

Mr. Bottino recalled the weather at the top of the hour including a ceiling of about 4,900 feet. He said that he had planned to get a PIREP from BOMR730 because he had other aircraft that would be flying in the same area or direction, but never got the chance. He said that the ASOS picked up the haze, but he didn't personally notice any haze.

When asked, Mr. Bottino said that he couldn't recall having another Martinaire airplane taxi to the incorrect runway in the past, but he did think he had heard about two other controllers who had a Martinaire flight fly to the wrong runway several times. In this case, he just assumed the pilot did not know the airfield, though.

When asked about the radio transmissions, Mr. Bottino said that the voice quality and radios sounded fine to him. He did not have any trouble understanding the pilot. He did not think the pilot sounded confused. He also said that nothing else about the flight, aside from the wrong runway, caught his attention.

When asked about the transmission to ZHU sector 58 about the pilot being "a winner," Mr. Bottino said that it was simply a way to communicate to the other controller; a controller that he knew personally, that the pilot seemed new and he wanted to make sure he was aware and watched him closely. He did not notice anything different about the airplane's departure or how it flew upon take off.

Mr. Bottino said that the clearances VCT received from ZHU did not include equipment suffixes for airplane equipment. Further, he said that he was no longer very familiar with equipment suffixes because he didn't use them anymore. The air traffic control tower did not receive any strips or flight plan information, other than what ZHU delivered on the landline which was: Aircraft callsign, type and approach requests for inbound aircraft and aircraft callsign, route, altitude and squawk code for outbound aircraft. He said that the Martinaire flights always took direct GMANN when issued and never said they couldn't.

When asked about the staffing in the tower during the event, Mr. Bottino related that he was the only air traffic controller working in the facility at the time, which was normal at that time. He did not feel that it was unmanageable traffic and did not feel another controller was necessary. His last break was from 1600 until 1640, when the mid-day shift and his later shift, overlapped.

When asked about the Martinaire company flights normally operating in and out of VCT, Mr. Bottino said that he noticed more new pilots lately who have made some mistakes. He also said that the air traffic controllers at VCT worked the flights so frequently that they did recognize when there were different voices and new pilots. He didn't know if Martinaire ever communicated

¹² A self-contained radio transmitter that automatically begins transmitting on the emergency frequencies any time it is triggered by a severe impact parallel to the longitudinal axis of the aircraft.

safety issues or concerns to VCT FCT. He didn't notice Martinaire flights having many issues at all. They were consistent on flying in and out, daily, with no noticeable airplane issues.

Mr. Bottino was asked if he was Limited Aviation Weather Reporting Station (LAWRS) certified, and he replied he was. He also said that he would routinely augment the automated surface observation system (ASOS) because it was "pretty fickle." When asked to describe the process of augmenting the ASOS, Mr. Bottino accurately described the process for controller-augmented weather observations. He said that he used the Aeronautical Information System Replacement (AIS-R)¹³ routinely to disseminate PIREPs. He would solicit PIREPs per the requirements of the 7110.65, and often in the morning when fog, etc., changed conditions at the airport. When asked about the special report that was put out for weather, Mr. Bottino said that it was prompted by the accident.

The interview concluded at 1315 CST.

¹³ The Aeronautical Information System Replacement (AIS-R) provides a web-enabled, automated means for the collection and distribution of Service B messages, Weather information, Flight Plan Data, Notice to Airmen (NOTAM) messages, Pilot Report (PIREP) messages, and other operational information to all Federal Aviation Administration Air Traffic facilities.