

**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.**

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AIRPORT SPECIALIST'S FACTUAL REPORT

ATTACHMENT 1

INTERVIEW SUMMARIES

8 Pages

INTERVIEW SUMMARY

Interviewee: Scott Wardwell
Position: Airport Director
Northern Maine Regional Airport at Presque Isle (PQI)
Date/Time: March 14, 2019/1230 est
Location: Via telephone
Representation: Declined
Present: Byrne (NTSB)

During the interview Mr. Wardwell¹ stated the following information:

Mr. Wardwell has been airport director at PQI for about 15 years. He is responsible for day to day operations, setting strategic direction, air service development marketing, among other duties applicable to the airport director. He has 3 direct reports (administrative assistant, airfield maintenance foreman, and head lineman at the city-run FBO), and he reports directly to the Presque Isle city manager.

He described the events on Monday March 4. As far as weather was concerned, they were in the middle of a snowstorm but it wasn't unusually intense and before he left for work he expected a routine day. When he arrived the maintenance foreman was conducting snow removal operations and issuing runway condition reports. As for the airplane's approaches, Mr. Wardwell recalled that he was on the phone with someone from United Airlines when he saw flight 4933 make its first pass – the airplane did not seem particularly low and he thought it would likely make another approach, and if that one didn't work out it would head back to Newark. He turned up the volume on the radio in his office. After the second approach his cell phone rang and it was the maintenance foreman who told him that he better come outside because United was in the infield. He went to General Aviation/FBO and used their pickup to go out – by that time fire rescue was there, the snowblower was there, and the maintenance foreman was moving snow around the airplane with the "green machine" (a John Deer tractor). He called the FAA regional operations center to alert them to the event and verified that the airport was closed while he monitored the response until the passengers were off the airplane.

He couldn't see the runway surface from his office, only the edge lights. He believed the NOTAM said ¼ inch dry snow or ½ inch dry snow. He said that prior to the second approach he pulled up the AWOS and it was reading ½ mile visibility. He did not recall whether the lights were on during the first or second approach. Runway edge, threshold, taxiway, and windsock lights are PCL controlled on 122.6. Approach lights are also PCL but controlled on a separate circuit. When activated the PCL lights stay on for 15 minutes. He stated that the CTAF frequency is 122.8 and that having the PCL on a separate frequency (122.6) added complexity for pilots using PQI.

Regarding damage to the airport he stated that only one edge light was damaged – and that occurred during airplane recovery. He said the lightning arrester on the AWOS wind sensor pole was bent and presumably hit by some part of the airplane. After the accident the FAA NOTAMed the wind sensor

¹ This summary was reviewed and incorporates comments provided by Mr. Wardwell on April 16, 2019,

unreliable. The FAA installed a new wind sensor on March 13. Prior to the accident the AWOS was working normally except for the temperature sensor and they had issued a NOTAM for that. After the incident they included dew point on that NOTAM.

Once the wreckage was released and moved from the infield, they moved a lot of snow from in front of the localizer. The airport had some detailed meetings with the FAA about this, and their lead ILS person was there on the 13th for the flight check. They rented 2 bulldozers and had the John Deere tractor and moved massive amounts of snow in front of the localizer and ramped the snow up so there were no sharp edges. The FAA did ground checks and flight checks. They also cleared a good bit of snow in front of the glideslope antenna even though he thought it had been within requirements – the FAA wanted things nice and clean.

Mr. Wardwell had meetings with the FAA on March 13 to discuss what the airport was going to do in the future – what process to go through in developing some sort of snow removal criteria for the localizer. His understanding was that the localizer is much more site dependent than the glideslope so providing specific guidance to airport operators is difficult. For the glide slope they have guidance about the depth of snow (18 inches) and a snow removal cone shaped area to clear to keep it operating as intended. For the glideslope PQI typically clears beyond the snow removal cone so they don't have to be as particular about the shape of it or tapering the edge because it is a wider area than FAA specifies. Glideslope disruptions due to the presence of snow on the ground are much better understood.

Mr. Wardwell said that the level of understanding of how snow affects the localizer is different. They have had the localizer signal affected by snow at PQI before. In 2003-2004 the localizer at PQI was replaced and the area in front of it re-graded. It was moved from 500 feet off the runway to 1000 feet to comply with the new RSA requirements. They thought with the additional grading and relocation that any snow-related problems would be eliminated, and the data show that for 3-4 years afterwards they didn't have any signal problems. Back when the installation was taking place he was conversing with Mr. Sponheimer who was an ILS expert/consultant about it.

When they do have what appears to be a snow-related problem with the localizer signal it typically wouldn't happen until the spring of the year – when melting is going on and there is a lot of water underneath the snow. Either FAA tech ops doing ground checks and finding the deviation, or pilot reports, would be the way the airport learned about the signal problem. They would then be asked to clear snow – however exactly what to clear wasn't known in advance. They'd go in and clear snow and when the signal was back to normal they'd cleared enough. He said depth of snow was not the issue as PQI has had problems with the localizer signal with not a whole lot of snow in front of it. He's heard people talk that the evenness of the snow depth may be a factor as with wind it can be easy for significant snow drifts to develop and cause the depth to become uneven. There is nothing in FAA advisory information to tell an airport operator how to deal with snow around a localizer.

Mr. Wardwell stated that PQI is not the only airport to have this problem of snow affecting the localizer signal. He was concerned that pilots prior to the accident may have noticed the shift but didn't say anything. Before the accident the airport had not received any pilot reports about the issue or heard from FAA.

Mr. Wardwell stated that the unique aspect to this event that surprised him was that it seemed to happen not as part of the spring thaw cycle – based on past experience they've been trained to start

thinking about it when the spring thaw starts to happen. However, this time around it happened earlier and when things were still very cold. It was winter and not spring weather-wise when the event happened.

He stated that Russell Clark, the maintenance foreman, could provide information about how they were moving snow during the season and after the event.

In the past when there was a localizer signal problem, they usually would get a PIREP or FAA tech ops would show up to do a ground check and it failed. After the ground check the FAA would tell the airport to remove snow and then the effort is accomplished through trial and error. FAA tech ops are the ones doing the ground checks and they have a requirement to do one at PQI every quarter (Mr. Wardwell thought that it may have been more frequently done in the past). There is no way for the airport to know that the signal is not correct. But if the FAA tech ops people confirm the signal is not correct the airport goes in and clears snow out. He said ground checks can provide the indication the signal is not correct, but so too can flight checks. They had not had any PIREPS about the localizer signal this year.

CommutAir and Wiggins are the primary commercial operators at the field with scheduled flights. Maine Mutual Insurance Group is headquartered in Presque Isle and their airplane N207MM routinely flies into PQI. Mr. Wardwell went to Cleveland to meet with CommutAir personnel (including the head dispatcher and lead technical pilot) before the winter season as it was this operator's first year at PQI. They discussed how they were going to operate at PQI and winter operations. According to Mr. Wardwell CommutAir was comfortable with the PQI snow control plan. PQI did amend the plan to accommodate a request from CommutAir – they wanted chemical deicing to be applied 80 feet wide rather than the 60 feet PQI originally had in the plan.

Mr. Wardwell reported that CommutAir raised a concern about an event that happened on December 2, 2018 regarding the reported runway conditions. PQI had deicing chemical 80 feet wide and it was 100 percent wet within that area (5-5-5) and ice outside 80 feet. That assessment was done about 2310 and the airplane landed about 2326. The copilot landing the airplane felt the conditions were almost nil. After this event CommutAir asked PQI for a runway condition report an hour before the flight takes off from EWR, an hour before landing at PQI, and just before landing if there was any precipitation.

Mr. Wardwell said that he has voiced his lack of support for the new RCAM to FAA airport safety personnel in Washington. He does not think RCAM does a good job of communicating runway conditions and thought it had been implemented too quickly – and airport organizations like AAAE and ACI had submitted position papers on the topic. He had hoped that RCAM would protect the airport from controversies involving a pilot describing conditions one way and an airport describing them a different way. PQI does not use a decelerometer currently but had used one in the past and did not find it to be accurate.

Regarding FAA oversight, Mr. Wardwell stated that they have had no previous issues regarding winter operations except that the FAA indicated in September that he should have updated the snow and ice control plan before CommutAir started service. He had updated it on August 30. Other than that, it was a clean Part 139 inspection in September 2018. That inspection was done by an inspector from Washington DC (Dale Williams) because a certification inspector in the NE region had been promoted and DC was covering the load for a period.

After the accident, Lori Dragonas conducted an inspection focusing on issues pertinent to the question of whether from an airport standpoint CommutAir can resume operations. The FAA rotates inspectors every 3 years. She was the lead inspector in the New England region and had been a previous Part 139 certification inspector for PQI (just over 3 years ago). Mr. Wardwell said that her oversight in those years had prepared him for this event as she would always be pushing for compliance and use of best practices. After the event Ms. Dragonas asked the airport to make sure the hold lines were free of ice and snow, wanted personnel to walk the entire runway to assure it was clear of debris (5 people did that), and to knock down some snow around taxiway C where the airplane had stopped for line of sight issues – these were recommendations not citations and she gave him clearance to reopen. She also stated she found the airport in compliance with snowbank profiles. That was the information provided after her post-event inspection but she indicated a LOI would be sent later.

Mr. Wardwell discussed the challenge of snow removal and the localizer compared to the glide slope. For the glide slope they have standards to monitor based on the AC and the airport can be proactive. When the airport sees that snow needs to be removed they coordinate with the FAA to tell them they need the glideslope turned off or a NOTAM issued while they are removing snow. But there is no similar guidance for airports to be proactive about the localizer signal.

Mr. Wardwell observed that at times it seems the ACs for winter operations are tailored more to the larger 30 airports than they are to smaller airports which can be a challenge. He offered for example clearance times and snowfall rates (1.5 hour clearance but snow falling 1 inch per hour).

He stated that if the outcome of this event is the FAA expecting airports to remove snow in the localizer area the airports will need more snow removal capacity (equipment and personnel). Right now they're focused on clearing the runway and associated surfaces and have personnel and equipment for that. However, he said that right now today the FAA cannot tell him exactly how large an area is necessary to be kept clear. They defined areas after the accident substantially larger than the localizer critical area. He said that his understanding of the particular challenge for the localizer (based on conversations with Kevin Bittinger at the FAA) is that the localizer antenna is tuned for a particular location to account for the topography. Snow can change the profile in front of the antenna such that it is no longer tuned correctly, especially if it drifts or blows or has layers of water.

He said in his opinion what needs to happen to eliminate this issue was to move away from ILS as a technology and embrace WAAS/LPV approaches. Operational requirements for landing from a Cat I ILS have kept this event from happening before when the localizer signal is not correct and those requirements may not have been effective in this case.

Mr. Wardwell stated that January was the snowiest on record in Presque Isle and it only missed the snowiest month ever by a fraction of an inch. He said it was a very difficult winter in terms of snowfall. He noted the runway and taxiway edge lights are on 30-inch stanchions.

INTERVIEW SUMMARY

Interviewee: Russell Clark
Position: Airport Maintenance Foreman
Northern Maine Regional Airport at Presque Isle (PQI)
Date/Time: March 15, 2019/1230 est
Location: Via telephone
Representation: Declined
Present: Byrne (NTSB)

During the interview Mr. Clark² stated the following information:

Mr. Clark has worked at PQI for about 30 years and in his duties as airport maintenance foreman he is responsible for maintaining everything inside the fence to make sure it complies with FAA regulations. This includes signs lights and markings, pavement, and snow removal operations. He also works on equipment. He has one full time person that works year-round, and during the winter months 3 part time employees report to him for snow removal.

Mr. Clark recalled what he remembered the day of the flight 4933 accident. He was out plowing snow earlier in the day and they had the airport in a closed with 10 minutes prior permission required status when snow removal was underway. When flight 4933 made its first approach he was walking out of the shop after taking delivery of some new equipment, Brian McQuaid was monitoring the CTAF for him while this was going on. When Mr. Clark came out of the shop, he saw the airplane on its first approach and he estimated it was about 15-20 feet above the runway and just past taxiway C. From his perspective outside the shop it looked like it was either a takeoff or a touch and go. He got into his pickup and asked Brian on the radio whether they were doing a touch and go, and heard the airplane talk with approach stating that they had conducted a missed approach. Mr. Clark drove his pickup to taxiway C behind the hold position line. The pilot asked on the radio to verify that the lights were on. He turned the lights on to high intensity and relayed that to the flight. About 10 minutes later he again activated the lights to ensure they would be on when the airplane came back. He did not hear anything more from the airplane. While looking at a computer in his truck that he uses to issue NOTAMs, he saw the airplane to his left just after it had touched down in the snow. The airplane was headed toward him. He drove onto the runway to get away and turned left onto the runway and saw the airplane pitch up in the snow and then when he turned around it had stopped about 150-200 feet from where he had been parked.

Mr. Clark got on the radio and said that they needed the fire department as a plane went down. He closed the airport immediately and called the airport manager and stated that he didn't have time to talk the airplane had crashed. He went back to the shop building to get the "green machine" (a large John Deere tractor with a 16-foot blade) which he used to plow out a "road" to the airplane from the runway. He got the road plowed out to help first responders and the people on the airplane get out. Afterwards he drove the tractor back to the shop.

² This summary was reviewed and incorporates comments provided by Mr. Clark on April 19, 2019.

Mr. Clark described runway conditions about the time of the event. He said they had continued plowing that morning and maintaining no more than ¼ inch dry snow (3-3-3). He said that they had just plowed it about 10 minutes before flight 4933's first approach so he estimated it was 1/8 inch on the runway by the time they arrived. The snow wasn't over the entire runway at the time of the accident as there were spots of blacktop visible due to some heat coming off the runway in March – he estimated to be about 20-25 percent. The accident happened about 30 minutes after they had last plowed.

He remembers hearing ½ mile visibility on the AWOS after the first approach but did not recall the ceiling. He described it as a typical snowstorm with light snow throughout the day and by about 2200-2300 it may have snowed about 4-5 inches (with only about 1-2 inches having fallen that morning before the accident). At the time of the event he estimated the visibility to be about ½ mile based on what he could see from the pickup truck.

They had been plowing 1-19 that day with 3 20-foot plows and a blower and at some point in the day after the event they started plowing 10-28 (which had not been plowed) after the airport manager talked with the FAA and they eventually opened that runway and issued applicable NOTAMs.

When Mr. Clark got to taxiway C in his pickup truck after the first approach the runway lights were not on. They have a time delay of 15 minutes and he couldn't tell whether they had been turned on by the pilots before the approach or not. In his truck he has a two-way radio for communicating on CTAF and a scanner tuned to the approach frequency (Boston Center).

When the accident happened, he thought two plows were working on the GA ramp, one was up by taxiway E and the snow blower was on taxiway A.

There was no fire after the airplane came to a stop in the snow. The snow blower tried to cut in a road to the airplane from the runway but it couldn't get through the snow bank which was like concrete. The green machine tractor could get through that snow bank. Firemen tried to make contact with the crew by radio to ask if everyone was OK but there was no response from them (he heard they were shutting the master off). When Mr. Clark started plowing the road to the airplane in the tractor the fireman (Ryan) was there in the crash rescue truck and had walked to the airplane. Mr. Clark was clearing snow to and around the airplane as first responders came and boarded the airplane. They waited for the plowing of the access road to the airplane to take people out.

Mr. Clark trains personnel on how to conduct snow removal operations. Scott Wardwell does the ground training. Training is conducted each year – full time employees get the ground training in the spring and the part time employees get the training right before they start (mid-December this year).

Mr. Clark said they don't have any storage or stockpile location for the snow they remove. When they plow the runway they go with the wind to blow the snow. They move the snow from the lights to the west and then blow snow over the lights into the field. They try to get the snow 80-100 feet out from the main runway to ensure it is farther than the FAA-allowable snow profile, but as winter goes on it closes in to about 70 feet. They run plows on either side of the lights and blow the snow past that. As far as the localizer is concerned, they have no instructions from anyone about how much snow can or cannot be there. In contrast the glide slope has an 18-inch depth criteria and he monitors that (tries to get in after 4-5 inches to get it cleared). When they do get exceedances, he calls the AOCC and tells them they have more than 18 inches and the FAA makes the decision on whether to shut down the glideslope or send someone from Bangor.

Mr. Clark stated that they have 30-inch high lights and the signs are about 2.5 feet. He uses those as visual references to judge the depth of snow when adhering to the FAA snow profile. He stated that some of the maximum depth requirements for the snow profile don't make sense, but they concentrate on keeping the runway clean and moving the snow away from the runway sides and never let the snow get past the depth where the aircraft could be in danger.

Mr. Clark described the snow in the area around the localizer antenna before the accident. He estimated there was possibly 5-6 feet of snow through that area from the antenna. However, from the approach end of runway 19 to the REIL it was all plowed down to grass and there would be a windrow of snow there. The REIL lights are cleared and snow is all ramped up at an angle. They've plowed that way at PQI for years and banks that were visible after the accident in that area and along taxiway E have been there before and have been a lot higher too.

After the accident and before the flight check they went into the area in front of the localizer with 3 bulldozers and cleared snow for about 15-16 hours. They also did that around the glideslope antenna too. FAA did not know exactly how much snow to remove or where they needed to move it. The FAA wanted PQI to move snow in front of the localizer beyond the width they normally plowed the runway (and area behind the lights). In the end the airport cleared snow about 250 feet either side of the centerline in front of the localizer and also cleared the runway and behind the lights as usual so it was clear of snow about 350-400 foot width down runway 1-19.

In the past when they've had to go in and move snow after a localizer problem was reported, they typically moved it the width they plowed the runway (350-400 feet) and tried to take the snow that far out. It would almost line up with the localizer building up in that area. But after the accident they cleared snow wider than that.

Mr. Clark said the only way they know something goes wrong with the localizer is if FAA people tell us. There's no requirement for snow depth for the localizer and no way for them to monitor. He said in the past there were FAA technical personnel at the airport, but now they come to do quarterly checks and to address reported problems. He thought the last quarterly check of the localizer was November or December 2018. Technicians are 2.5 to 3 hours away.

When they have had problems with the localizer signal at PQI in the past it has happened when it is starting to warm up and you get some rain. He said it appears to have something to do with the melting underneath the snow. Years ago they moved the localizer back from 500 feet to where it is now, and for a couple years they had no problems. When it happens it doesn't seem to depend on the depth of snow. One year it happened and they got in and plowed what could have been about 4 feet of snow to fix the problem. Then it happened later that year with only about 12 inches of snow. It is frustrating for the airport as there is no way for them to know they don't have guidance. He said that when the FAA was there after the accident, they didn't know the answer. They don't know how much snow needs to be there, where to go with it, how wide it needs to be plowed. But he said if they have to start routinely clearing snow from that area, they don't have enough machinery or manpower at this time.

Mr. Clark said there were no changes in the way they did snow removal operations at PQI this year compared to years past. They have had a little bit more snow this year than in the past and may not have gotten it as far out as they would have in a normal year as they've been spending time clearing the snow instead of getting it tapered.

Mr. Clark said although guidance on how to clear snow around the localizer area would be helpful, if they add that requirement PQI does not have enough people and equipment to do that in a timely fashion. Without adding more something would suffer as the clearance time can be hard to meet under some conditions with the personnel and equipment they have. They have to fight hard for equipment that they do have with respect to qualifying for AIP money the same way that an airport down south who doesn't get anywhere as much snow as PQI does.