



Report on MVU Demo at Ontario (CA) Airport Thursday, May 24, 2001

Dan Lindsay, Chief at Ontario International Airport arranged a demonstration of the MVU at the airport facility. He arranged for us to have two aircraft and three warehouse/hangars for us to smoke up and ventilate. He also had a water tender available for demonstrating the misting ring.

Los Angeles World Airports is the organization that owns and operates Ontario International Airport. They also own and operate Los Angeles International (LAX), Burbank Airport, and Van Nuys Airport. Chief Lindsay invited his counterparts from these airports as well as his superiors from L.A. World Airports. He also invited people from the RAND Corporation's Urban Warfare Group who are interested in the capabilities of the MVU for terrorist response and mass decontamination.

We began with a briefing at 9:00am in the training room. We gave a brief background of Positive Pressure Ventilation and the impact it has had on structural fire fighting. We also gave a brief history of Tempest and our involvement in the growth and acceptance of PPV. We showed the MVU video and had a few minutes for questions and answers. From the beginning of the presentation, it was clear that there was a high level of interest in the MVU and its possible applications for aircraft fire fighting and terrorist response. Of particular interest was the misting system.

Demo 1, Atlas Air 747

At 9:30am, we headed out to the runway where we had an Atlas Air 747 cargo jet smoked up with two Shadow 2 machines. We went through the control systems of the MVU and demonstrated the various hydraulic movements.

A stair truck was driven up to the front passenger door and the MVU was parked behind the cargo truck, about thirty feet from the entrance. We had a cross wind of about 15-20 mph which did not pose any problems. Our exhaust opening was the rear cargo door of the jet.

We were able to completely clear the fuselage in about one minute. We smoked the jet up two more times and allowed people to stand inside while it was ventilated. They were clearly impressed with how quickly the MVU cleared the aircraft. They also like the fact that the MVU could be located so far away from the opening allowing access by fire fighting personnel.

Demo 2, Converted Hangar

The second demonstration was at a converted hangar, formerly occupied by Lockheed. Offices had been built inside the hangar and the configuration of hallways and rooms made for an interesting demonstration. Four hallways ran to the four corners of the hangar in a square pattern with a center hallway dividing the building. Each hallway was about 150 feet long. We place a smoke machine in the center hallway and located the MVU in front of a double door. Once the center hallway was filled, smoke poured into the adjacent hallways.

We started the MVU and cleared the main hallway in about thirty seconds. However, the smoke that was cleared did not exit the building at our intended exhaust opening. Instead, the smoke was forced into the ceiling of the hangar, above the offices. Apparently, the second floor offices and ceiling had openings that acted as our low pressure point. We did not have the dramatic exhausting of smoke that we expect with a PPV demo but we did clear the inside of the building.

Demo 3, Misting System

The third demonstration consisted of pumping water through the misting ring to show the volume and distance that the MVU was capable of producing. When attached to the water tender and a pressure of 200psi, we were able to throw water about 100 feet. By using the rotational controls, we could spread water over a very large area in a short amount of time. The spectators were impressed with the minimal amount of water used, noting that they would have used hundreds of gallons of water to cover the same area with a traditional nozzle.

There is a lot of interest in the capabilities of the MVU for distributing foam and wetting agents. The people from the terrorist response and urban warfare groups are interested in using the MVU for distribution of neutralizing agents and chemical weapons. By installing different types of misting systems, the air pattern of the MVU can be used to deliver a variety of products.

At 12:00 noon we met back at the fire station for lunch and a discussion of the mornings events. There was good discussion about the MVU and there was clearly a high level of interest. There were many questions about the cost of the MVU and the various configurations that were available.

Demo 4, Converted Hangar

The first demo of the afternoon session was at another former Lockheed warehouse. This demo was to show how a passenger terminal could be ventilated in case of fire, gas attack, or smoke. The warehouse was approximately 60,000 square feet, had a 20 foot wide roll-up door at one end and two standard man doors at the other end. The roll up door was our entrance opening but the entrance was blocked by equipment that could not be moved. We had to aim the MVU at a 45-degree angle to achieve a door seal. This was an excellent demonstration of the fact that you do not have to approach an opening from head-on to achieve a proper seal.

As we ventilated, we had very good flow out of the man door. Unfortunately, this was too small an exhaust opening and we were not able to remove the smoke as quickly as we wanted. However, this was an excellent demonstration of the need to have an exhaust opening at least as large as the entrance opening. The people in attendance were able to clearly see that PPV works and gained a better understand of how to set up their entrance and exhaust openings.

Demo 5, UPS 747

The second demo of the afternoon was with a UPS, 747 cargo jet. The configuration of cargo doors was identical to the Atlas Air 747. We filled the jet three times to measure the speed with which we could clear the fuselage. Our best time was 40 seconds to have good visibility from nose to tail and two minutes to completely clear the cargo hold. There was clear enthusiasm for this. One fire fighter said, "That is AWESOME! This is going to save a lot of lives!"

In talking with Chief Lindsay and his boss after the demo, we learned that they deal with a lot of small fires on aircraft that turn to big fires because they can not find the fire quickly. By the time they find it, it has spread and does major damage. They also have to tear the interior of the aircraft apart looking for the fire. By having the ability to clear the passenger area and cargo areas of smoke in less than a minute, they can quickly find the source and extinguish it.

The consistent theme through all of our discussions was multiple uses of the MVU. In order for fire departments to justify the expense of an MVU, they need to be able to show the many uses and benefits to their funding groups. Aircraft fire fighting, terminal ventilation, warehouse ventilation, and terrorist response were some of the major themes. The use of the misting ring for foam and mass decontamination were also discussed at length.



MVU Positioned in Front of Dooway Behind Stair Truck



MVU Exhausting Smoke Through Rear Cargo Door of 747



MVU Misting System for Cooling and Knockdown of Suspended Gases



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