

## MOBILE VENTILATION UNIT (MVU™) JUSTIFICATION

Justification for the unique applications of the MVU, a relatively low cost piece of equipment compared to its benefits, are described below in order of its contributions to Safety, Security and Capacity.

- **Safety**
- **Security**
- **Capacity**

### 1. SAFETY.

The utilization of the MVU in aircraft incidents can be dramatic. The unit can provide rapid evacuation of smoke from an aircraft, without needing to be physically hooked up to the aircraft. The self-contained Fan Unit can be raised and aimed to align itself with an opening on the aircraft. The rapid evacuation of smoke from within the aircraft will aid rescue personnel to more quickly rescue or recover passengers and help isolate any sources of smoke that may hamper the aircraft incident management and recovery.

The MVU additionally has a misting capability that can provide various levels of Decontamination, biological (i.e. Ebola), chemical (fuel, hydraulic fluids) on site. The mutual aid responding hospitals do not have the capability for decontaminating 300 passengers. The onsite decontamination ability of the MVU will significantly speed up the aircraft recovery and the return of the airport to normal operations.

Additionally, the capability of the MVU to direct its' misting stream will aid fire fighters accessing the aircraft for rescue operations.

### 2. SECURITY.

The security aspects of the MVU are substantial. In the event of a biological or chemical agent release in and around the terminal area, the MVU can quickly clear the contaminated areas. The evacuation of all or part of a terminal building can be costly and dramatic to airlines and airport operations. The ability to isolate the affected area and provide a quicker restoration of the affected terminal building will be a substantial operational plus for TSA. In the case of DFW, where three terminal buildings are connected by connection walkway bridges, this could mean the evacuation of all three terminal buildings, resulting in a substantial security incident management and passenger re-screening. **Because of the previous DFW incidents and the MVU capability, the TSA has provided the FAA a written endorsement for the MVU as a significant contribution to safety and security in accordance with 49 USC Section 47102.** Currently, the Positive Pressure Ventilation devices normally populated on Fire Trucks, do not provide enough volume to clear an affected area in a timely manner. The DFW real experiences, provided below, help expand on this justification.

### 3. CAPACITY.

If the release of a biological agent or smoke in a terminal building required the evacuation of the terminal building, aircraft operations at the gates would be impacted. If the event lasted for a significant period of time, landing aircraft would be required to hold on the aprons, inbound aircraft may be required to divert to another airport and aircraft at another airport bound for DFW would be required to gate hold. The cumulative effect of such incidents/accidents have shown to have as much as a 15% negative impact to the National Airspace system!

The Texas Airports Development Office, has reviewed the additional justification for the Mobile Ventilation Unit and believes it meets the minimum criteria intent of Under 49 USC 47102 by “contributing significantly to, the safety or security of individuals and property at the airport”.

I have forwarded electronically, three video clips of the MVU in action. It is hope that these videos will help provide additional background information for your determination on the MVU AIP eligibility.

Sincerely,

Senior Program Manger  
Texas Airports Development Office

**MOBILE VENTILATION UNIT PHOTOS**



## DFW ACTUAL EXPERIENCES

The following list of actual experiences at DFW International Airport and how the MVU could have made a significant difference, are included for your review.

The MVU also has application in **aircraft firefighting and rescue**. The MVU can be positioned at the door of large aircraft like the 747 to purge the aircraft of smoke in the event of an aircraft fire. Several demonstrations of this usage have been documented including one at the DPS Training Facility. The rapid ventilation of an aircraft would have a very beneficial effect for the passengers and crew by removing smoke and gases from the aircraft. The manufacturer has developed a video showing this direct aircraft capability.

The portable PPV fans available to fire rescue personnel now cannot be positioned at the level of the doors of an aircraft to make their use effective.

In case of a fire or **release of biological or toxic gases in the terminals**, the atmosphere must be cleared quickly to aid in the rescue of victims. This increases survivability for injured or trapped victims by clearing the air and supplying fresh oxygen to the area. The smoke from carpeted areas alone, while obscuring vision would also produce poisonous gases such as phosgene and hydrogen cyanide. Firefighters and passengers in the terminal will benefit from the rapid removal of these hazards using the MVU. Visibility and a tenable atmosphere would be returned sooner.

**On February 6, 2001, four gates at Terminal E were shut down** due to a fuel leak on the ramp. A heavy odor of jet fuel permeated the gates near the spill. The gate areas were evacuated due to the fumes making passengers ill and the danger of fire. It is a common understanding that a single terminal gate closure will cost the airlines a minimum of \$100,000 per hour. The gates at this incident were closed for four hours for a total potential cost of \$1,600,000.

**A hazardous release and its odor on March 31, 2001**, necessitated the **closure of a total of ten gates** at Terminal B for a period of four hours. Fire Rescue Division (FRD) responded to the hazardous materials incident at Terminal B, gate B4. A large plume of white smoke was seen emanating outside the terminal. It was determined that maintenance personnel improperly mixed an epoxy compound causing the smoke and obnoxious odor. The smoke and odor entered the terminal and caused the affected airline to evacuate and abandon operations of gates B2 - B5. FRD personnel deployed two positive pressure ventilation (PPV) fans on level 2 at the B5 area to try and push the smoke and odor out the south end of the terminal. FRD personnel also took control of the HVAC system to control the air movement in that portion of the terminal.

Although the smoke dissipated, the odor still remained and continued to spread throughout the terminal. Eventually the Airport Train Station (Stinger Building) and the A-B Sky-bridge were evacuated and operations ceased. It was noted that **the two PPV fans were not sufficient to move the volume of air needed to be effective in the terminal concourse area**. The odor continued to spread and began to impact operations at gates B6 through B10.

Eventually the affected airline decided to shutdown all flight operations at Terminal B, gates B2 - B10. **It took approximately four hours to ventilate the odor and return the south side of Terminal B to an operational state.**

## **49 USC Sec. 47102. - Definitions**

**(3)**

**"airport development" means the following activities, if undertaken by the sponsor, owner, or operator of a public-use airport:**

**(B)**

**acquiring for, or installing at, a public-use airport -**

**(i)**

a navigation aid or another aid (including a precision approach system) used by aircraft for landing at or taking off from the airport, including preparing the site as required by the acquisition or installation;

**(ii)**

safety or security equipment, including explosive detection devices and universal access systems, the Secretary requires by regulation for, or approves as **contributing significantly to, the safety or security of individuals and property at the airport;**