

Industrial Chemicals as WMD:

The following is shared, as received, from Tim Gablehouse, President of the National Association of SARA Title III Program Officials (NASTTPO); visit their website at www.nasttpo.org . Article addresses 2010 Soccer World Cup planning in South Africa but is pertinent worldwide.

The detection of industrial chemicals in the atmosphere is a generally straightforward proposition, especially if you are looking at chemicals with a high degree of toxicity, like chlorine or anhydrous ammonia. Commercial detectors are readily available and it would take relatively little effort to link a series of such detectors into a system to protect the perimeter of even a large sporting or political event. The effectiveness of such a system lies in the response plan.

Response to a Large Scale Chlorine Attack at a Sports Stadium

To achieve a mass casualty effect at such a venue a large amount of chlorine would be required, like a tank truck or rail car's worth. Leaving aside for the moment the difficulty in getting such a large amount of chlorine close to a high-risk venue like a World Cup Soccer match, let's assume the worst case:

- o A tank truck (40,000 lbs) of chlorine is driven to the upwind side of a packed sports stadium. The contents are released by the placement of an explosive device at the bottom center of the tank. The cloud of chlorine gas drifts toward the stadium.

The security force's attention is directed to the tanker by the explosion and the potential problem is quickly confirmed by the chemical agent detection system around the security perimeter. Announcements are made to evacuate the stadium and panic ensues. Some people are killed or injured by the chlorine gas, but fights or being trampled in the efforts to evacuate causes most of the casualties. Most of the chemical casualties would be outside of the stadium, closer to the site of the actual attack.

There are only three effective means of dealing with a chemical attack once it has started, evacuation, neutralization or personal protective equipment. Providing enough PPE for a large venue like a sports stadium is not practical; forget the training requirements for proper use. Evacuation is not much more effective once the attack has begun. Neutralization is the only remaining option.

Fortunately, there is one neutralization procedure that is somewhat effective for most TIH industrial chemicals; water fogs. While not actually a neutralization technique, it acts to wash the chemical out of the air. The runoff is still toxic, but the effects on the people in the stadium would be greatly reduced. The authorities would only have to deal with the panic effects of such an attack; still a large problem.

The only effective way of dealing with such an attack is to prevent the chemical agent from getting close enough to be a problem. Fortunately, tank wagons and railcars are fairly easy to detect and the size of the perimeter is easily calculable. It is a relatively easy task for security forces to clear the danger area before the event and to prevent these mobile weapons from entering the perimeter during the event.

Response to a Medium Scale Chlorine Attack at a Sports Stadium

If the terrorist is not looking to cause a mass casualty event, but rather wants to just cause panic, a large volume of toxic gas is not required. A smaller portable tank would provide enough of a chlorine cloud to set off detectors around the security perimeter and cause panic during the resulting evacuation. Again, let's look at the scenario:

- In the weeks leading up to the event a one-ton chlorine cylinder is moved into a garage or warehouse upwind of the event site. It is placed near an exterior wall. An explosive device is set to blow out the wall and open the cylinder in a single operation. The resulting cloud drifts towards the stadium.

Once again the explosion and chemical alarms alert the security personnel. The water fog is more effective in this case, due to the smaller amount of the chemical involved. This means that the evacuation of the stadium is less urgent and less prone to panic. Again, there would be some chemical casualties in the general vicinity of the tank detonation. The event is disrupted and this would still be a successful terrorist attack.

Again, prevention is the best defense. A one-ton chlorine cylinder is more difficult to detect than a tank wagon or rail car, but it is still something that a security sweep should be able to detect in the days leading up to an event. The size of the area of the sweep is smaller due to the reduced volume of the chemical involved.

Response to a Small Scale Chlorine Attack at a Sports Stadium

A much easier chemical attack to carry out would be one that did not attempt to cause a mass casualty event, but had panic and event disruption as the modus operandi. Such an attack would use small amounts of chlorine gas set to trigger the chemical alarm system. Again, let's look at the scenario:

- A number of small-pressurized containers of chlorine are pre-positioned around the event site perimeter. The size of the containers would be determined by how close they could be placed to the chemical detectors; closer means smaller containers. The largest containers would be 150-lb cylinders. Each container would be equipped with an automated valve to release the contents, either on command or at a pre-set time. The valves would operate silently and release small clouds of chlorine gas that would drift towards the detection system.

The first notice of an attack would be the chemical alarms going off. Depending on the sophistication of the detection system, the security forces may be able to tell that the cloud is essentially harmless. The fogging system would effectively eliminate any chemical risk. An evacuation would probably still be ordered, as a precaution, but the chances for an orderly evacuation would be increased. A less sophisticated detection system would not allow for the orderly evacuation of the venue. There would be a small number of chemical casualties outside the venue in the immediate vicinity of the larger containers. The event is disrupted and this would still be a successful terrorist attack.

Prevention would have to rely on infiltration of the terrorist group and breaking up the plot before it was put into operation. There would not any way to detect all of the smaller containers before the valves were opened.

Conclusion

A successful terrorist chemical attack against a large venue such as a sports or political event would not require large amounts of industrial chemicals. If the terrorists knew that the authorities were using chemical agent detection systems and appropriate chemical defenses, an attack aimed at spoofing the detection system could be adequate to cause panic and disruption. This would have the added benefit of making the authorities look foolish and ineffective. Certainly this would have to be considered an effective terrorist attack.