

A REINTERPRETATION OF THE 2002 ATTEMPTED WATER TERROR ATTACK ON THE U.S. ROME EMBASSY. DON'T UNDERESTIMATE THE ENEMY.

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Abstract

The incident of attempted terrorist activity directed at the water supply of the US embassy in Rome that occurred in February 2002 has been well documented. The popular consensus is that this is just another example of terrorist ineptitude when dealing with chem-bio attacks. The author's conjecture is that this simplistic interpretation of the attempted attack is not correct and tends to underestimate the terrorists capabilities. An argument is presented that the terrorists were in fact not inept but were highly skilled and were in fact conducting an experiment to verify hydraulic models of the distribution system before the actual attack was launched. It is dangerous to underestimate the capabilities of terrorists as it can lead to complacency

Keywords

Terrorist, attack, water, Rome Embassy

1. THE ATTACK?

On February 20, 2002 at 3:39 PM the Associated Press released a story with the following headline, "4 arrested with cyanide and Rome water supply maps." The article detailed a raid on an apartment and the arrest of four Moroccan terrorists. They were part of the Salafist Group for Call and Combat, an Algerian organization with ties to Ossama bin Laden and the al Qaeda network. According to the article, they were in possession of a common cyanide based industrial chemical later identified as Potassium Ferricyanide, false documents, and detailed maps of the area surrounding the US Embassy. The maps found in the apartment included details of the city's water system. The U.S. Embassy was circled on the maps. Investigators believed the suspects planned to contaminate the water supplies in the capital, including the commercial area around Via Veneto where the U.S. Embassy is located.(BBC News 2002)

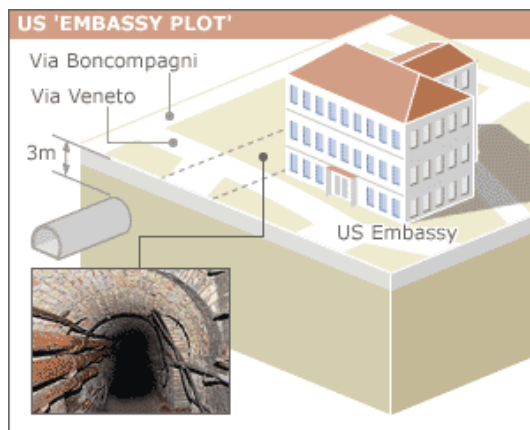


Fig. 1. Diagram showing the location of the US embassy and the utility tunnel used to gain access to the water pipes.

2. THE REACTION:

After this story became public, most people in the water and security business breathed a sigh of relief. The typical reaction was, “*Thank goodness we were dealing with such inept terrorists. They were trying to poison a water system with a compound that isn’t even really poisonous.*” The LD-50 (the amount needed to kill 50% of those exposed) for Potassium Ferricyanide is 2970 mg/kg of body weight while that of Sodium Cyanide is 6.4 mg/kg. Therefore, if you were attempting to poison someone with Ferricyanide you would need 464x the amount of Sodium Cyanide it would require. It would take over 200 grams of Ferricyanide to kill the average adult male. This represents almost a full cup of the bright orange material. Even the most unobservant victim would most likely notice someone trying to slip this into their water. In fact, the toxicity of Potassium Ferricyanide is so low that it isn’t much more toxic than common table salt, Sodium Chloride. The LD-50 for Sodium Chloride is 3750 mg/kg of body weight. (Merk 1989)



Fig. 2 Represented are the volumes of material that it would take to kill 50% of adult males exposed with a U.S. quarter for size reference. Table salt would be an effective a poison as Potassium Ferricyanide.

“Wow! It is a darned good thing that these guys don’t know what they are doing.”

3. PROBLEMS WITH THE INITIAL ANALYSIS AND AN ALTERNATIVE EXPLANATION:

But upon further reflection, this interpretation of the events doesn’t make any sense. From all reports these terrorists did know what they were doing. They had chosen the perfect location to orchestrate such an attack on the embassy. The pipes were chosen and accessed correctly. There was also a large municipal water tank located nearby that served the surrounding Via Veneto area which contains many hotels and is popular with upscale tourists. A successful attack would have reached the embassy compound and also resulted in many casualties from the surrounding area. So why did they make such a huge mistake as to choose the wrong chemical? Five minutes on the Internet and a high school education would have pointed out the mistake. A search on www.google.com yields over 80,000 hits for Ferricyanide.

Documents captured in Afghanistan, Iraq and locations within the US that deal with chemical attacks demonstrate that the terrorist's knowledge of toxicology is not lacking. They seem to have a sophisticated knowledge of what is required to cause harm. It is extremely unlikely that they would make a mistake such as using Ferricyanide rather than a toxic Cyanide compound. Especially when toxicological data for these and a huge variety of other readily available compounds is so easily obtained in the public literature.

Rather, it is more likely that the use of Ferricyanide was intentional. Why would they use a non-toxic chemical? There is one answer to this question that makes sense. While it is easy to determine what chemicals you could use to poison a water system through a simple internet search and a rudimentary understanding of chemistry, the ability to target a specific site, such as the embassy, by introducing a toxicant into the water distribution system through a backflow event is more difficult. The labyrinth of pipes that compose a water distribution system is very complex and flow patterns are often difficult to map. Many system operators that have years of experience with a given system do not always have the detailed knowledge it would take to direct a contaminant to a specific site.

To garner more knowledge about the flows in their systems, operators often perform what are called tracer studies. This is when they inject a benign, easily analyzed for, compound into a system and track its movement over time. A good guess as to the would be terrorist's motives in the case of the Ferricyanide is not a dismal failure in understanding toxicology, but rather a dry run of the attack scenario to determine if they had correctly mapped the hydraulics of the system.

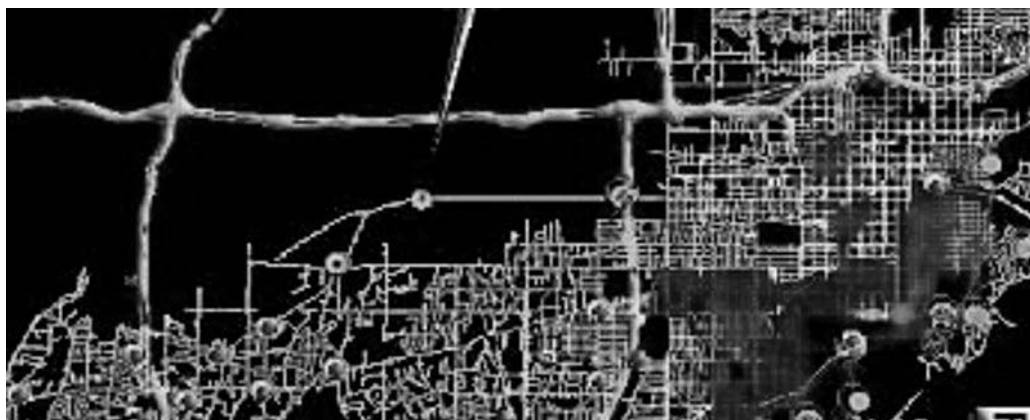


Fig. 3. System hydraulics can be very complicated. The choice of where to introduce a chemical to influence a specific site can be a daunting task.

To be a good candidate as a tracer, a compound should have certain characteristics. It should have solubility properties and flow characteristics close to the actual compound of interest. It should be relatively nontoxic and easy to work with. It should be easily detectable through simple analytical measurement and, it should be easy to obtain and inexpensive.

While Ferricyanide is not toxic, it does have many similar characteristics to other cyanide compounds such as Sodium and Potassium Cyanide, which are very toxic. Its solubility and flow characteristics in water would closely mimic those of the other cyanide compounds. It is easy to obtain and inexpensive. Also, solutions of Ferricyanide are a highly colored yellow. Solutions with as little as 1 mg/l present can be detected with the naked eye. (HHST 2004) Best of all, the color is so light at this level that, unless you are looking for it, it would most likely not be noticeable or would be interpreted as a slight amount of rust in the water. The terrorists could inject a small amount of the Ferricyanide into the system and then send a cohort into the embassy on legitimate business and while they are there observe the drinking or restroom water for traces of the telltale yellow color. All it would take would be a legitimate trip to use the restroom and casual observation as to the color of the water to see if the attack

scenario would work to hit the intended target. Once the hydraulics are verified, the real attack with a different cyanide compound could commence. (Kroll 2006)

4. CONCLUSIONS:

When looking at the newspaper articles in this light, the results are not so reassuring. Public sources of information do not always present the full picture of terrorist capabilities. Making assumptions about the operational effectiveness of terrorist organizations from the publicly available literature is a mistake that others have fallen into in the past.

According to David Kay, in a chapter entitled the WMD Threat. Hype or Reality. in the book *“The Terrorism Threat and U.S. Government Response: Operational and Organizational Factors”* academic analysts made this mistake concerning the PLO and IRA. After an in-depth study of the statistics, the analysts concluded that the IRA and PLO could not be as technically skilled as the government asserted because they were frequently blowing themselves up as they produced and deployed their bombs. What the analysts didn't know was that the government at that time was involved in preventative measures that made sure that a stream of defective bomb making material was entering the terrorists supply chain funnel. They were also deploying special techniques around vulnerable areas to prematurely detonate devices while they were being placed. The statistics in the public records were wrong so, the conclusions were wrong. (Kay 2001) As private citizens we are not privy to the full spectrum of intelligence information that exists. That is why it is prudent for us to take a cautious stance in our interpretation of the data that we do have available. It is far better to err on the side of caution and interpret things in a dark light than it is to have a false sense of security in our imagining that our enemies are not as clever or as resourceful as they in fact are.

In my opinion, the interpretation of the Rome incident that I have detailed above is much more likely than the scenario of a stupid terrorist. It never pays to underestimate your enemy and I fear in this instance many people have done just that. The assault on the Rome embassy was not a bungled attempt by amateurs, but rather a sophisticated experiment that was luckily interrupted before its deadly conclusion. Lord Acton whom is famous for his quote *“Power corrupts, and absolute power corrupts absolutely,”* also had another saying that while less famous is very pertinent to the subject at hand *“Do not overlook the strength of the bad cause, or the weakness of the good..”* (Acton 1895)

On April 28th, 2004, after a two-year trial, an Italian Court acquitted all 12 of the defendants (9 Moroccans, 1 Pakistani, 1 Tunisian, 1 Algerian) that were charged with complicity in the plot. The accused denied any knowledge of the chemicals or documents saying many people passed through the apartment in which they were discovered. The defendant's lawyers also emphasized in their defense that the cyanide compound was not a dangerous substance, and might, at worst, have been used to help forge identification documents. Only one defendant was found guilty of the minor charge of receiving license plates from a stolen scooter and was sentenced to a six-month jail term and fined 100 euros, or about \$119. (Balmer 2004) Perhaps if the court had been made aware of the potential of the Ferricyanide being used as a tracer the verdict may have been different.

It is my hope, that by this point, I have been able to convince you that water is in fact a target of terrorist activity. Such attacks have occurred in the past and continue to occur today. The fact that these attacks have met with little or limited success should not decrease our sense of urgency in addressing this vulnerability. The enemy will learn by their mistakes and so should we. We face a skilled and determined foe that has as their goal the infliction of damage and massive casualties by any means at their disposal. It behooves us to counter their intentions with any means at our disposal.

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