



## MA TF-1 US&R Canine Decontamination Drill Station July 21, 2007



MA TF-1 held a decontamination drill that included three main stations: Personal Protective Equipment Review, WMD Decontamination Corridor Set-Up, and Canine Decontamination. There was one canine for each of the three drill squads formed to rotate through each station.

Because the weather conditions were mild, with intermittent sun and clouds, temperatures in the 70°-80° F range, and light winds throughout the day, decon procedures using the water directly from the hose was deemed appropriate. No dryers, heated water, and/or a heated tent were necessary to avoid hypothermia.

The MA TF-1 Canine Decon Box was opened and set up near the station. The initial canine decon corridor consisted of a 45"x 45" TVI pool with a drain port along the bottom placed facing the downhill aspect of the ground. Next to this was a plastic wading pool. Placed at the start of the TVI pool were the following items: Dawn® liquid detergent, disposable leashes, basket muzzle, and surgical scrub brushes. A hose was connected to the building 4 spout and the extended spray wand at the other end placed by the pool as well. Between the two pools more disposable leashes and a bucket for collection of contaminated items (leash, collar, and scrub brushes) was placed. At the end of the corridor were more leashes and some towels.



Canine Decon Box



Items at start



Initial Corridor

The first canine (Bacco) was contaminated with Glo-Germ®, a non-toxic product used to test efficiency of hand-washing in pre-school children. It is not visible in regular light. Both the oil-based liquid and powder forms were placed on the ground and the dog walked over the 'contaminated' area. Confirmation of contamination was achieved by checking the paws under a black light. The handler and two other team members were then placed in a level B suit to give them the experience of having to don this level of personal protection, as well as get the dogs used to interacting with people in them.



Liquid Glo-Germ®



Powder Glo-Germ®



Contamination Walk

The handler (Gail) then proceeded to the first pool, where the two decon team members first exchanged the 'dirty' collar & leash for another, then began washing down and shampooing the dog. A contaminated collar and leash could be exchanged here. Special care was taken to use the surgical scrub brushes on the foot pads, where at prior team drills much of the contaminant was found to remain. The handler had the option of standing in the pool with the canine (a potential option if they needed to be decontaminated as well), or alongside.



Leash and Collar Exchange



Initial Wash



Initial Shampoo



Surgical Scrub Brush to Paws



First Rinse



Eye Protection!

After an initial rinse the handler and canine proceeded to the second pool for more thorough rinsing, and another collar/leash exchange if deemed necessary. Baby hand wipes were used to cleanse the face and inner aspect of the ears. Then handler and canine stepped out onto the 'clean' area to towel dry the dog and for the handler to remove the level B suit. The canine was rechecked with a black light to assess the level of decontamination, especially around the paws.



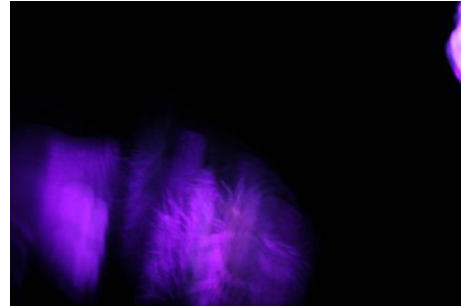
Rinsing Pool



Towel Drying



Paw Contamination Before Decon



Paw Contamination After Decon

Issues brought up by the first squad with this initial set-up were as follows:

1. The canine (and handler) end up standing in some level of contaminated water, even with the drain hose that exists in the TVI pool
2. Team members were kneeling down on the ground for better access to the dog's paws, which they are not to do as this may compromise the protection of the suit
3. Bending over to get the underside and paws of the canine was back-stressful, and may lessen the efficiency of the decon in a more hazardous situation
4. Bacco, the first squad's canine, started drinking the dirty water in the TVI pool. The basket muzzles will not prevent this either, as dogs can lap water through them.
5. When the level of paw decontamination was assessed, although subjectively improved over previous drills there was still 25-50% of the contaminant present
6. We have no muzzling protocol, and need to discuss general guidelines regarding various situations that may occur, especially if the handler is not present

To address these concerns it was suggested that we place an elevated platform in the pools. Rick Covino from HAZMAT recommended a scaffolding system and kindly went home and got his Home Depot plastic shelving to set up in the pools. This brought the canine up approximately 2'6" off the ground level. Additionally, the shelving in each pool was connected by a ramp at the same level. Tim Lynch suggested placing rope along the sides between the pools to act as a visible barrier to decrease slipping off the edge of the scaffolding set-up, so I grabbed some leashes to tie around the posts. Should the contaminant be of a more serious nature, a third smaller pool filled with a 0.5% sodium hypochlorite (1 part 5% stock Clorox® to 9 parts water) solution can be placed as the final step before entering the clean zone. Thirty seconds in this solution should be sufficient to neutralize 99% of anything that did not get washed off the paws.



Home Depot Shelving



Scaffold Set-Up



Scaffold Set-Up

Sammy, the second squad's canine, got to test out the new design with Sara in tow. She did great, but slipped off the edge in the TVI pool, so additional leashes were tied to the posts to act as sight barriers. There was still room for the handler to step into the pool if needed. Sammy was not standing in any contaminated water, nor could she reach it to drink. The decon team had better access to the underbelly, limbs, and paws without having to strain their backs, so could do a more thorough job. And Sammy had no problem jumping onto and off of the shelf scaffolding (a testament to the training these dogs receive).



Shampoo on Scaffolding



Side Ropes Added

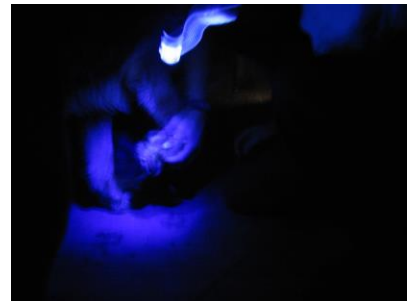


Surgical Brush to Paw

After finishing and towelng off, the canine lower limbs and paws were reassessed for level of contamination.

Issues brought up by the second squad with this elevated set-up:

1. The surface of the shelving may get slippery when wet
2. Reassessment of the paws revealed that 20-40% of the contaminant was still present



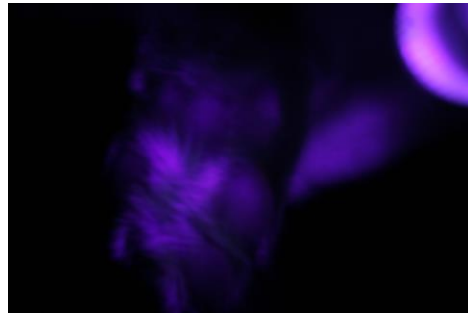
Better, still some contaminant left

The second squad recommended getting rubber mats to place on top of the shelving, and some shower mats were purchased to do so. Scott Ames suggested that since the contaminant was oil based, perhaps dissolving it in some mineral oil would help break it up before applying the detergent. The theory is that like dissolves like, and since mineral oil is a part of our canine decon box a bottle was placed at the beginning of the decon corridor for the third squad to test out.

Janet took Adler, our final canine tester, through decon with the third squad. The rubber mats helped prevent any slipping, the leash rope barriers were sufficient to keep him on the shelving. Everything went very smoothly. When the paws were checked for level of decontamination, 90-95% of the Glo-Germ® had been removed! So at least for an oil-based contaminant, pre-treatment with mineral oil may significantly increase the efficiency of the decontamination.



Paw Contamination Before Decon

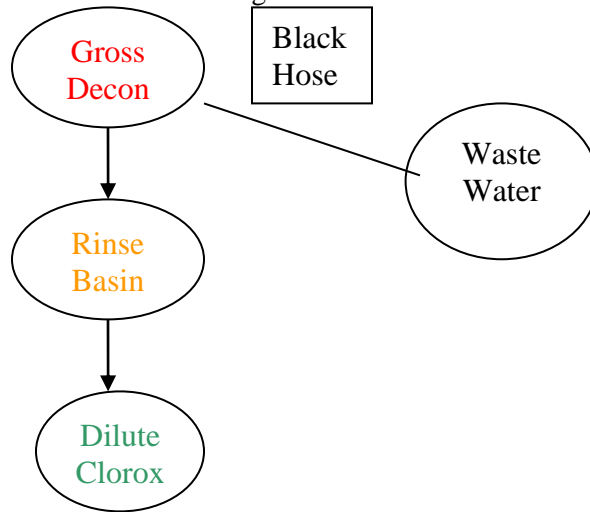


No Evidence of Contamination  
After Mineral Oil, then Shampoo Decon

Thank you all for helping to test and improve our canine decontamination set-up and protocols. This system is adaptable to almost any level of decontamination needed. Two TVI pools have been ordered. They are light weight, durable, and easy to set up and store.



Our plan for a canine decon corridor is very adaptable. From a simple hose and patch of ground to a proposed corridor as seen below, and anything in between, we will be able to address a variety of contamination issues. The 0.05% diluted Clorox basin can be added to destroy biological contamination without harming the canine tissue.



Additional equipment to handle decon in cold weather is also being addressed. A warm water heater and commercial dryer are recommended, and if need be a warming tent or shelter of some kind can be used to protect wet dogs from the cold and wind.

