

THANK YOU  
to all our First Responders

# ALL HANDS ON DECK

DEFENSE EQUIPMENT COMPANY



Inside this month



“In no other profession are the penalties for



employing untrained personnel so appalling or so irrevocable”



- Douglas MacArthur, 1933.

Kevin Cresswell

## Training for reality

MX908

Elkhart Brass

SERE

1



2



3



YOUR DEFENSE



OUR PRIORITY



DEFENSE EQUIPMENT COMPANY

TRIDENT ONE



**This could be a challenge ...  
...otherwise no problem for  
TRIDENT ONE mass decon**

TridentOne is a turnkey, large capacity water deployment system that quickly and easily delivers a low pressure, high volume water shower to the greatest majority of people possible during a hazmat incident.

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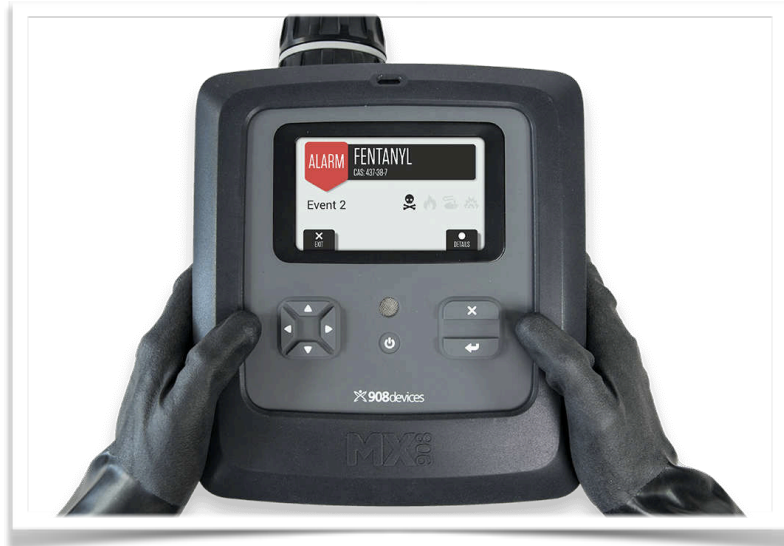


1

## MX908

# Real-time threats. Real-time detection.

Manufacturer: 908 Devices - Distributed by  
*Defense Equipment Company*



The MX908™ is a multi-mission tool utilized by elite responders conducting chemical, explosive, priority drug and HazMat operations around the world. Trace-level threat detection and discriminating selectivity deliver real-time action intelligence in seconds. A spectroscopist in every box.

MX908 does the lab work. Simply choose a sample, scan through all the necessary steps to get easily identifiable results. Trained users can get a refresh whenever they need it using the sample. MX908 instructs you through the necessary steps to get easily identifiable results in minutes. Trained users can get a refresh whenever they need it using the sample.

This is 'future proof'. The threat landscape will always evolve. MX908 is designed to evolve with it. Under the hood algorithms and analytics adapt to future threats like new fentanyl analogs and other novel material concerns on the fly with simple software updates to support the ongoing needs of your mission.

### How low can you go?

MX908 detects compounds at sensitivity levels comparable to ion mobility spectrometry (IMS). It also identifies threats at levels not much else can. The power of high-pressure mass spectrometry™ (HPMS) delivers unparalleled selectivity to accurately discriminate priority threats from the myriad of interference's that lead to false alarms with other technologies.



# ”Coming into contact with dangerous drugs”

- part of the job for first responders!



Kevin Cresswell

In Bartlesville, Oklahoma, one officer had a scary exposure to fentanyl last year. The power of even the smallest touch of fentanyl is clear. Bartlesville police officer, Sgt. Jim Warring, was wearing protective gloves as he packed up drug evidence believed to be laced with fentanyl, when suddenly

he slowly started to collapse. Officers came to the rescue.

"Becoming ill, light-headed, basically passed out and fell," says Warring. "I don't know what would have happened had they not acted so quickly."



Warring says the officers quickly gave him NARCAN® (naloxone HCl) a nasal spray and the first and only FDA-approved nasal form of naloxone

for the emergency treatment of a known or suspected opioid overdose. NARCAN® counteracted the life-threatening effects of an opioid overdose, which is believed to have saved his life.

Since most accidental overdoses occur in a home setting, it was developed for first responders, as well as family, friends, and caregivers—with no medical training required. The department says this



was the first time they've had to deal with something like this and had to give one of their own officers NARCAN.

It's another layer to the opioid epidemic, and an eye-opener to what first responders have to deal with.

"Even though the officer may not be physically dealing with an individual, all the evidence and things that we handle on a day-to-day basis, that can harm you too," says Warring. Police say another officer was possibly exposed to fentanyl during the incident as well. That officer was sent to a hospital for treatment.



The appearance of fentanyl and other opioids has become a serious problem in law enforcement; there are homeland security implications due to the potentially deadly nature and easy manufacturability of these synthetic opioids. Fentanyl's potent properties make it a strong incapacitation agent - it has been found with other dangerous materials in terrorist labs. The small quantities (micrograms) of

fentanyl needed to cause severe health issues demand a simple, sensitive test that can be used by law enforcement and other first responders. Fentanyl is a synthetic opioid that is 50 to 100 times more potent than morphine. Fentanyl is medicinally used to control pain and some derivatives are used for anesthesia. However, like heroin, it affects opioid receptors that control breathing rate; high doses cause cessation of breathing, leading quickly to death. When used illegally instead of heroin or upon accidental exposure there is high risk of overdose.

Fentanyl and its derivatives are cheap. They are used as a cutting agents for other illicit drugs - heroin, cocaine, etc. Despite restrictions on fentanyl and several related derivatives, illegal manufacturers simply modify the molecules during synthesis to work around the restrictions. Non-regulated analogs of fentanyl are also used in illicit mixtures.

Presumptive drug test kits used in the field to identify illicit drugs, used extensively by law enforcement, are disposable “colorimetric” tests. Colorimetric tests change color upon exposure of the test’s chemicals to the target drug or drugs.

Unfortunately, colorimetric test kits react to classes of molecules, which means they can give the same or similar colors for different illicit drugs, making interpretation difficult. Additionally unfortunate is that colorimetric test kits often require a relatively large amount of the drug for testing; when the suspect drug might be fentanyl or a derivative, the health risk to the officer is serious.

Confusing matters, some makers of colorimetric tests have made what they advertise as a “Fentanyl Test,” a combination of two or three existing color test kits or reagents, all of which give different colors for fentanyl. The idea being that three confirming colors are better than one. The logic here is valid; but, in practice, there is so much variation in color that it’s often really difficult to differentiate them.

Raman spectroscopy is an excellent way to identify drugs. However, it too requires a relatively large amount of drug to analyze. Raman spectroscopy is also library-based, which means that if a particular drug spectrum isn’t in the library, Raman will not identify it. Raman is also relatively expensive as an initial outlay and given typical budgetary restrictions, cannot be procured for all officers.

The market also promotes aptamer-based tests - like pregnancy tests - that can work for fentanyl. They are cheap but many times do not react to similarly potent fentanyl derivatives. These tests have known false positives on other illicit drugs such as methamphetamine.

To overcome the above field testing problems, a test was needed that could meet several criteria:

- detect & identify fentanyl at trace levels
- detect & identify fentanyl derivatives at trace levels
- detects & identify heroin & its derivatives at trace levels
- have an easy to read result
- be pocket-sized and disposable







Defense Equipment company supplies Field Forensics Inc (FFI), Fen-Her™, Model DXC-001, to overcome the field testing problems and to have all of the features first responders need in a test that needs only trace amounts to be used.

Fen-Her™ combines two analytical techniques in one disposable test. In analytical

chemistry and other fields, using two different techniques to identify something is called using “orthogonal techniques”. Using two or more colorimetric tests to identify a substance, for example, would not be using orthogonal techniques.

The two techniques used in Fen-Her™ are thin-layer chromatography (TLC) and colorimetry. TLC does the heavy lifting by separating the various components that might be in the sample. For example, it can separate heroin from fentanyl, or, fentanyl from cocaine and so on. Once the separation is done, then a colorimetric reagent is applied to the separated components so the officer can easily see the result of the test.

People who abuse opioids generally build up a tolerance to them so they have to take greater and greater amounts. Officers and first responders do not have such a tolerance so are more susceptible to overdose.

Fen-Her™ can test down to between 150-200 nano grams of fentanyl or heroin. So, if an officer is confronted with a plastic bag filled with an unknown powder, they can test along the edge of the unopened bag for trace residue, greatly reducing the officer’s risk of accidental exposure.

In the case where fentanyl might be used as a cutting agent in another drug, Fen-Her™ is sensitive enough to pick out the fentanyl without being overwhelmed by the other drug. In practice, it makes sense to use a standard colorimetric screening test, like FFI’s DABIT-001 before using Fen-Her™.

In accordance with the technical recommendations of the Scientific Working Group for the identification of Seized Drugs (SWGDRUG), Fen-Her™ is a combination Category B (thin layer chromatography) and Category C (color test). In the SWG-DRUG hierarchy of drug identification chemical selectivity, Category C is "Selectivity through General or Class Information" and Category B is "Selectivity through Chemical and Physical Characteristics.”

Color tests are broadly used by police officers for a first level of selectivity because the tests respond to a broader range of chemical characteristics common to seized drugs. Thin layer chromatography (TLC) is used by forensic laboratory chemists - and with FFI's Fen-Her™ test kit, by police officers - because of its improved chemical selectivity. The results appear in zones. The fentanyl zone is indicated by the orange arrow; the heroin zone by the purple arrow. The result of the color step is that fentanyl's appear as an orange color and heroins as a purple color. If an orange color appears outside of the fentanyl zone, it isn't fentanyl. If a purple spot appears outside the heroin zone, it isn't heroin.

Table I: SWGDRUG Categories for Analytical Techniques*		
Category A	Category B	Category C
Infrared Spectroscopy	Capillary Electrophoresis	Color Tests
Mass Spectrometry	Gas Chromatography	Fluorescence Spectroscopy
NMR Spectroscopy	Ion Mobility Spectrometry	Immunoassay
Raman Spectroscopy	Liquid Chromatography	Melting Point
	Microcrystalline Tests	Ultraviolet Spectroscopy
	Pharmaceutical Identifiers	
	Thin Layer Chromatography	
	Cannabis only: Macroscopic Examination Microscopic Examination	
* SWGDRUG – Scientific Working Group for the Analysis of Seized Drugs, Recommendations 3rd Edition		

Undoubtedly, FFI's DXC-001 gives first responders, a new, much safer and much more accurate kit for the presumptive identification of fentanyl, fentanyl derivatives, and heroin. It's safer because the sample pen needs just a trace amount of material - samples can be taken from residues on paraphernalia such as spoons, pipes, and edges of plastic bags, etc. It's more accurate because color appears in different locations on a test card eliminating confusion between heroin, fentanyl and derivatives and it separates common cutting agents and adulterants such as diphenhydramine (Benadryl™) Fen-Her™ to eliminate the possibility of confusing heroin with fentanyl.

**Field Forensics available through Defense Equipment Company, develops threat chemical and identification methods - our kits are simple and designed to be used in harsh conditions. Kits are self contained and disposable and have been in use for years by our first responders and elite special forces.**



# ELKHART BRASS

Pressure-regulating Select-O-Matic® nozzles automatically adjust to fluctuating water flow to maintain effective pressure and a consistent fire stream in all flow ranges.



The patented, completely unobstructed waterway allows more GPM at lower pressures than any competitive brand. All models flush easily without shutting down and provide constant flow on either fog or straight stream, making them ideal for the application of AFFF foam. Corrosion-resistant; no lubrication required.



**Industrial Firefighting**



**Foam Operations**



**Defensive Firefighting**

# DEC & Dejero

## SOLUTIONS FOR FIRE DEPARTMENTS

Deliver mission-critical connectivity and real-time video for improved situational awareness and faster response time

When disasters and emergencies occur, real-time video and data to support mission-critical decisions are vital. Deploying connected command vehicles, drones, smart apparel, and other IoT devices to give responders real-time actionable intelligence requires reliable connectivity.

Field units and the command centre need real-time communication to anticipate, react, and manage emergency situations, while mitigating danger and loss of life.

Where every second counts, Dejero delivers reliable connectivity to support real-time situational awareness to make mission critical decisions—even when commercial and priority networks are congested, damaged, or where there's coverage gaps in urban and remote locations.

Unlike network failover solutions, Dejero's Smart Blending Technology simultaneously blends multiple cellular and satellite connections—including FirstNet—to deliver greater bandwidth, expanded coverage, and enhanced reliability.



### Improve Situational Awareness

Gain real-time incident awareness to help responders make safe and informed decisions during emergency situations, even when operating in poor network conditions. Aggregate live video feeds from:

- Helmet cameras
- Smart apparel
- Drone cameras
- SAR dog cameras
- Tablets and smartphones
- CCTV

### Enable Data-Driven Decision-Making

Leverage artificial intelligence (AI) and cloud-based workflows to interpret and act on real-time data from connected remote devices. The interoperability of Dejero provides device connectivity for:

- Mobile data terminals
- Vehicle fleets
- GPS
- Computer-aided dispatch
- Lidar devices
- Tablets and smartphones

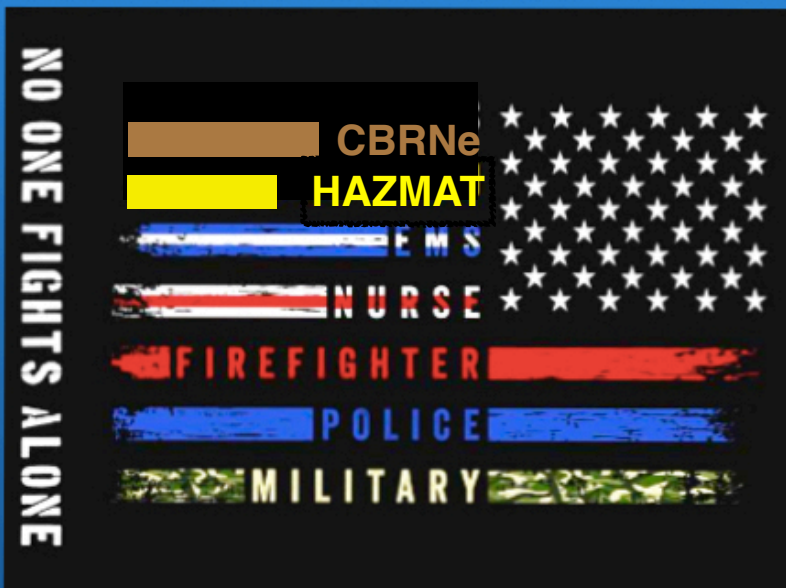


# HAZMAT NATION

TRAINING, BLOG,  
NEWS, COMMUNITY



**DEFENSE EQUIPMENT COMPANY**



“Your Defense is our Priority!”

# Dejero

[Sales@defeqp.com](mailto:Sales@defeqp.com)



**FIELD FORENSICS**

“Detect, Analyze, Defeat”

Field Forensics (supplied by DEC) BioScreener™ -

Screening Kit for Bio-Weapons Agents

Finally, first responders have a quick and easy way to determine whether a suspicious powder is a likely bio-weapons agent, or not.

Individual disposable presumptive tests that identify potential threat-agents such as suspicious powders – within 30 seconds, identify whether a substance is a probable bio-weapons agent or an innocuous powder. Collect the sample by simply dabbing the sample tip on the suspect material; analyze the sample by cracking the built-in ampoules and watching for the specified color change. BioScreener™ can eliminate the threat posed by a suspicious powder in seconds. Instead of shutting down an area for hours or days pending results of an analysis, first responders can identify a suspicious powder as a non bio-agent in seconds.

3

## SERE

**The OM27 available from Defense Equipment Company, uses scientific disciplines to integrate human performance, ergonomics and biomechanics**



**into the solutions to ensure operational enhancement.**

The SERE tools unique modular design allows optional adaptability through a combination of

materials, & crypsis coloration, for concealment or illumination. Its modular disruptive coloration patterns can be formulated for operator advantage in multiple environments.

The OM27-S and AMAST Shovel were born out of personal experiences and 11 years of research, empirical testing, and engineering that continues to present day. Modern Investment Casting in SAE Aerospace 17-4 stainless steel, Precipitation Heat Treatment and is rated at 72,000 LBS. per sq. inch strength. Heat to 925° F ± 10 (496° C ± 6), hold at heat for not less than 90 minutes, and cool in air Hardness: HRC 40 minimum. All 17-4 materials are treated with Black Oxide Treatment in non-reflective SAE Standard finishes. The OS100 SERE bar has high strength poly-carbon non-slip over-mold RTP 2800 B Thermoplastic Sub-zero (-60 to 160 degrees F) Available RTP Over-mold Colors: \* Multiple Options. Overall performance starting weight 7.7 LBS., – Replacing over 100 plus LBS., of tools having equivalent functionality. Manufactured to US Mil Specification capability AS7003, AS9100D, ISO 9001:2015, NADCAP certified or compliant, ITAR Registered M23502. On Stainless Steel, the black oxide coatings successfully withstand 260 hours of salt spray exposure in accordance

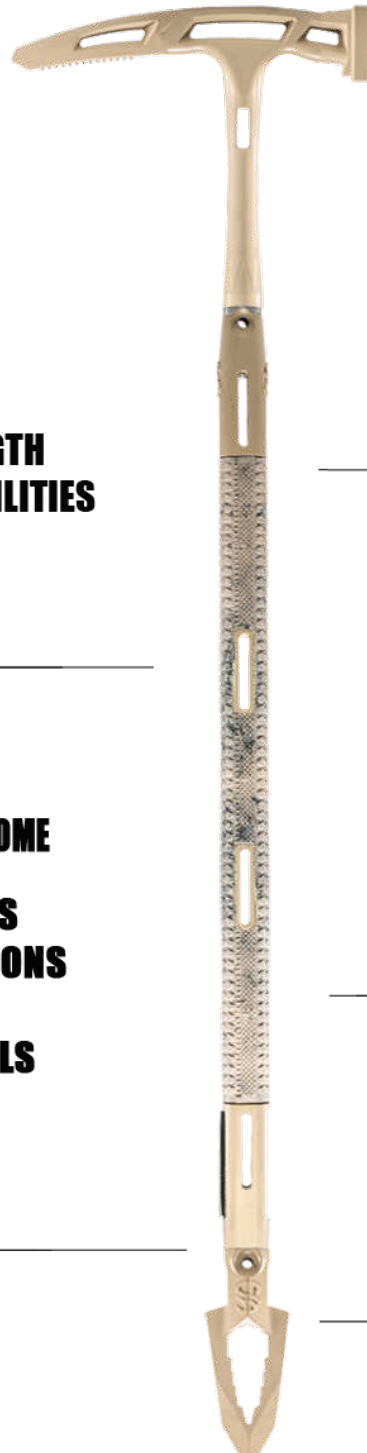




# SERE OM27-S™

## OPERATIONAL MULTIPURPOSE TOOL

- Terrain Spike
- Demolition Adze
- Rock Pick
- Grappling Hook
- Modular Trenching Tool
- Tanto Tip Punch
- Pry Bar



- 17-4 Hammer
- Shovel Handle
- Spanner Wrench 1" & 2 1/2"
- Torque Wrench
- Hand Drill
- Tourniquet Key Retention Strap Slot
- Hex & Torx 3/8" Socket Drive

**5.916 LBS.**

**550 LBS. OF YIELD STRENGTH  
PROVIDING OVER 100 CAPABILITIES**

- Mono Pod /Shooters Pole
- Breaching Tool
- Orienteering Tool
- Deadman Anchor
- Trekking Pole
- Rigging Shackle Anchor

- Tactical Operator Belt Recess 1 3/4"
- Mechanism for Splinting
- 550 Cord Bivi / Shelter Brace
- Rapid Assaulter Ladder
- First Responder Support
- EMS Field Traction Devise
- Ranging / Rescue Marker
- Support Truss
- 15" Measurement Guide
- RTP Climate Resilient Overmold

**"EVERY POUND COUNTS"  
DOING MORE WITH LESS**

**IMPROVISE .. ADAPT .. OVERCOME**

**S. SURVIVAL SOLUTIONS  
E. EMERGENCY OPERATIONS  
R. RESCUE RESPONSE  
E. EXPEDIENT ESSENTIALS**

- Chisel
- EMS Paddle / Oar Pole
- Tac Light Adapter
- Excavation Tool
- Ventilator
- 3X Knife Sharpener  
Fine Medium Coarse

- Modular Med Evac Link
- Leverage Bar
- Survival System
- Fishing Implement
- Canopy Extension
- Kinetic Exercise Platform

- 6 X Adjustable Slip Wrench  
5/8, 1/2, 6/16, 3/8, 5/16
- Plum Level
- Rigging Block
- Wire Cutter
- EMS Piton
- Sun Dial
- Tactical Entry Door Jam



with specification ASTM B117-90 ASTM B117-90. (Mil spec DTL13924 class 4).  
Maneuver Centers of Excellence at Fort Benning (MCoE) Sponsored NSN  
5180016774210 .



# Cover Story - **Training For Reality!**

**Kevin Cresswell**



“In no other profession are the penalties for employing untrained personnel so appalling or so irrevocable”

– Douglas MacArthur, 1933.

An assessment team jump starts the exercise by entering a suspected contaminated area to detect possible chemical agents, assess and report damage to critical infrastructure, and identify any possible chemical casualties who needed first aid and then extract them from the area. The areas contaminated were indicated by post it notes with the name of the substance on them. Next, an engineer team donned personal protective equipment and entered the area with prepared structural

equipment to stabilize the infrastructure to protect response personnel and casualties for further rescue efforts. An umpire standing by shouted the changing environmental conditions and wind direction. A training exercise with some value but it could have been worth a whole lot more!

Realism has always been something I have been a proponent of throughout my career. Whether it's realistic interrogations in conduct after capture training for military air crew, use of petrol bombs and

missiles in riot control training, real knives and guns in self defense for law enforcement or testing 'home made' explosive with colorimetric test kits – whenever I have been in the role of trainer I have always trained for reality! Training is the instruction and applied exercises for acquiring and retaining knowledge, skills, abilities, and attitudes (KSAAs) necessary to complete



specific tasks. It's not practice that makes a first responder or service personnel perfect, it is perfect practice and to achieve that you have to be as realistic as possible and push the envelope as far as measured risk will allow.

Training must continually be forward-thinking, innovative, and aggressive, both in understanding how your role is evolving and in adapting the training to meet those challenges. Training is one of the key functions of the military or first responders. It is training that wraps all of the functions of an organization together to create and maintain effective performance when it counts.

Training with the right resources allowing for that element of realism is critical. It prevents a loss of appetite. In sport this 'staleness syndrome' is well documented and recognized. The athlete falls short of all expectations. This staleness is common among elite athletes, affecting more than 60 percent of top long-distance runners at least once in their career.



Avoidance of this syndrome simply comes down to how you train, where you train, what you train with and injecting the right amount of organized chaos to increase the operators stress upon decision



making. Having the technical ability is not the same as operational experience or realistic training as close to live incidents as you can immerse the student in.

Generally speaking, all training is divided into two broad categories: individual and collective and then within that you can have simulated or live training. When we're dealing with the HAZMAT or CBRNe world these are some of the most challenging circumstances in which anyone must operate. It is so challenging and unique that it simply cannot be completely replicated outside of reality itself. Thus, to be truly effective, organizations must train under conditions that are as realistic as possible and come as close as possible to placing the individual, the team, the unit, and the crew in the environment and situations they will face on the ground. This training realism is one of the key measures of training effectiveness. How can military and first responders realistically train with toxic substances? Live-agent training is expensive and difficult to organize.



Much of the design and innovation in training is aimed at generating realism. Training design generally has three components:

- The task itself—the thing an individual or the element is expected to accomplish.
- The conditions—the set of circumstances in which the task is expected to be performed.
- The standards—the level of competence and effectiveness at which the task is expected to be accomplished. Standards might include the speed at which the task is to be performed, the accuracy or the percentage of operational systems that are ready and available.



Identifying the tasks, conditions, and standards drives training realism. As first responders or CBRNe military units the goal is “to have been there before” so that they know they can fight, win, and survive. This approach is not often consistent with the need to use real chemical, biological and radiation sources. On occasion different sources are used making the exercise less than realistic with the agent under the control of an umpire or instructor nearby, limiting the training value. The use of simulant is better than a ‘post it note’ – but we can go one better than this.

Realistic training requires individuals to train as they would respond – with the same protective gear and equipment they would use in a real-world situation where they could be exposed to dangerous CBRN and Hazmat agents. If you're detecting a gas leak your instrumentation needs to show that, not some 'post it note' stuck on a worktop.

In the Hazmat /CBRNe world, there will inevitably be a multi agency response achieving a level of competence across the board is challenging. Many agencies or in the case of military operations overseas, allied or host nations, do not have the same equipment, knowledge or capabilities. It's not practice that makes perfect; rather, it's perfect practice that makes perfect. It is, after all, the seemingly small disciplines and commitment to high standards that makes us who we are and binds us together and prepares units to detect chemical agents, conduct decontamination procedures and provide first aid to exposed people, while operating in rigorous CBRN or Hazmat conditions. The CBRN exercise should be realistic and dynamic, based on a simulated real-time threat allowing for the fourth dimension of all training – flexibility.

To keep students interested and engaged, it has to be relevant and engaging. Repetitive actions are often necessary but they lead to complacency. You cannot run the same scenario multiple times and

expect the student to maintain proficiency and competence. Breaking up monotony with challenging new scenarios, locations and most of all being able to put a responder in full PPE, send them into unfamiliar territory building, and then the instructor sending real-time data on their detection system such as the HazSim Pro 2.0 device allows testing of



knowledge, stress and reaction in as near realistic setting as possible. The flexibility and versatility of the HazSim system allows for training on multiple agents, chemicals, radiation or gaseous environments without requiring a switchover of equipment.

It allows the trainer to detach themselves from the scenario so the student is effectively operating in isolation -but is still interactive, the instructor knowing the level of each student and able to send



questions related to evolution in real time. The student then answers questions via the touch screen on HazSim.

Training needs to test on multiple perishable skills that need to be regularly exercised in the event the unit is deployed to deal with a live scenario and reflects the effectiveness of the unit's response procedures and flexibility to adapt under any condition, you train to be able to manage the situation... no matter what the circumstances dictate and that's why the 'post it note' style of training falls short! This is where having realistic training equipment, like the HazSim system, can improve the capabilities and effectiveness of the individual and the team immensely and remember – you don't have to take students out of the classroom to still obtain realistic conditions for kinesthetic teaching.

“Take full advantage of these years when the wisdom of the world is placed at your disposal, but do not spend too much time buckling on your armour in the tent. The battle is going on in every walk and sphere of life.”

– Winston Churchill, 1929.



# NCT USA 2021

The leading CBRNe event series in the USA

MAY, 2021  
ABERDEEN PROVING GROUND | EDGEWOOD (MD)



**DEFENSE EQUIPMENT COMPANY**



COMING ON 09-02-20

## THERE IS A DIFFERENCE OF COURSE!

**Hazmat Incidents** typically comprise unplanned, smaller scale accidental and non-weaponized events, whereas **CBRNe missions** respond to the deliberate use of warfare agents often within the context of planned operations, in a pre-determined battle-space.

**BUT....**

**Crossover** occurs in many areas; same vendors, use of equipment, methods of response, detection, decontamination and of course in a terrorist incident - mutual aid post a domestic attack scenario. It makes *absolute sense* then that operators, professionals, commercial organizations and interested parties share and learn from each other with this command bond and understanding.

Defense Equipment Company is proud to affiliate with the hugely successful **Hazmat Nation** is now joining forces with the new **CBRNe Nation** to provide **DUAL** nationality to the two disciplines! Dual nationals owe allegiance to two Nations. "They are required to obey the laws of both countries, and either country has the right to enforce its laws."



Become a Citizen of both nations - *NO Passport required and NO Travel restrictions during Covid-19!* Look out for our FREE App.  
Launching September 2nd 2020.  
**VIP Citizens only area**



For more information visit: [www.hazmatnation.com](http://www.hazmatnation.com)

*"Fraternal association requires not only the growing friendship and mutual understanding between our two vast but kindred systems of society, but the continuance of the intimate relationship between our advisers, leading to common study of potential dangers, the similarity of weapons and manuals of instructions, and to the interchange of officers and cadets at technical colleges .....it is a special relationship inconsistent ....., it is probably the only means by which we will achieve its full stature and strength". Sir Winston Churchill. 1946.*

Sponsored by [www.HazSim.com](http://www.HazSim.com) - available through Defense Equipment Company



# DEFENSE EQUIPMENT COMPANY

Proud Partner of -

## CBNW CHEMICAL, BIOLOGICAL & NUCLEAR WARFARE

## CBNW XPLOSIVE

### DETECTION

Commercially available detection equipment should allow fast responders, whether they be police, fire, hazmat, military or EMS units, to detect the presence or absence of chemical or biological threats. Today's equipment is available, reasonably priced, and will detect a wide array of chemical agents. It's taken us over 10,000 years to get here!

**Fast or spectroscopy**  
Five years after the Great War, changes were made in the wavelength of light when a beam of light traverses a dust-free, transparent sample of a chemical compound. A small fraction of that energy is scattered other than that of the incident (i.e. coming from the Raman spectrum) was discovered in India by Dr. Raman, who later won the Nobel Prize. However, because the intensity of the scattered light is very weak, there was no practical light source for his Raman spectroscopy until the invention of the laser in the 1960s.

**Standby detection**  
While the chemical was innocuously released in the Tokyo train attack in December 1995, they were an excellent example of the type of incident expected from chemical terrorism. The Sarin from the Tokyo incident was first recognized because a medic suspected nerve agent poisoning shortly after the attack. The first identification made in Tokyo was accurate, and it was not until three hours post-incident that accurate

**Law testing**  
Testing and detection methods continued in the US. Billings Edwards was one of 60,000 enlisted soldiers enrolled in a

course (officially in 1971) and (officially declassified in 1975) the first mustard gas and other chemical test mustard gas. As an African American, Edwards was used for the program to assess the effect of gases on black skin.

On 6 May 1993, 20-year-old British soldier Ronald Maddison agreed to participate in a medical experiment at the Porton Down military research facility to assist in the detection and treatment of agents. What a package he was offered: a three-day pass and 19 shillings, which he decided to use to buy an engagement ring for his girlfriend. Sounded too good to be true — and it was.

Some 200 milligrams of pure cyanide as a piece of flannel was attached to Maddison's left forearm. Within half an hour the volunteer was detached in great pain and had lost his hearing. He then fell unconscious. All this proved the ambulance driver described the symptoms. "I saw his leg rise up and started spreading up his leg. It was like watching somebody being a blue liquid into a glass. It just began filling up."

His highest breaths reached to cover up the death and the request held extra on grounds of national security.

### DETECTION

detection of cyanide was made and the information disseminated. Emergency responders must have faith in the ability to detect and identify a medical presence, detection equipment may include rapid, non-invasive or non-invasive clinical assays for various chemical agents or the effects of the individual. Without the ability to recognize symptoms and hospital personnel attempting to care for essential parts of both medical crisis and consequence management. Current R&D in chemical agent detector technology is focused on



# CBNW + XPLOSIVE

[CBNW.co.uk](http://CBNW.co.uk)

# HAZSIM<sup>®</sup> TRAINING SIMULATION SYSTEM

The world's most innovative and effective hazmat training system is now better than ever! With intuitive and scalable new features for growing teams, now is a great time to enhance your hazmat training with the HazSim Pro 2.0.

## INTERACTIVE LEARNING FOR GROWING TEAMS



**NEW**

### HAZSIM HANDHELD METER

- Ruggedized housing - 13.2"x8.6"x.7", 3.6 lbs.
- Super responsive touch screen and large external buttons
- Loud audible alarms
- Confined space probe with tubing included

### HAZSIM INSTRUCTOR SERVER

- Convertible laptop tablet with full keyboard and case
- Group meters (if using more than one handheld) can be synced or controlled separately
- Ability to create custom meters

### INTERACTIVE LEARNING

- Instructor can send questions in real time
- Students answer questions via HazSim handheld
- Use HazSim's preloaded questions or create your own
- Customizable alarms for your team's specific needs

### METERS

- Multi-gas - 4, 5, or 6 gas meters
- Radiation - alpha, beta, gamma
- WMD meter (bar graph)

### PLUS

- Pelican Case for safe transport
- Standard one year warranty, with option to extend



HazSim GO

### INCLUDED

- UNLIMITED METERS AND VARIATIONS INCLUDING CHEMICAL, RADIATION AND WMD
- EXTENDED RANGE LAN, UP TO 1000' WITH OPTION TO EXTEND
- SCALABLE PLATFORM FOR ADDITIONAL HAZSIM METERS
- LARGER TOUCH SCREEN AND LONGER BATTERY LIFE
- EXTERNAL BUTTONS ALLOW QUESTIONS TO BE ANSWERED EASILY WITH GLOVED HANDS
- TAG FUNCTION ALLOWS INSTRUCTORS TO MAKE NOTES IN EVOLUTION

FEATURES	HAZSIM GO	HAZSIM PRO 2.0
Single Gas	Y	Y
4 gas / 5 gas / 6 gas	Y / Y / Y	Y / Y / Y
Rad (alpha, beta, gamma)	Y	Y
WMD meter (bar graph)	N	Y
Custom Skins	N	Y
Custom Alarms	Y	Y
Question & Answer Feature	Y	Y
Log of Training Evolution with Instructor Notes	N	Y
Control Multiple Handhelds Individually	Y	Y



**DEFENSE EQUIPMENT COMPANY**

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# DECONTAMINATION



## DEFENSE EQUIPMENT COMPANY

### CHEMICAL & BIOLOGICAL DECONTAMINATION EQUIPMENT

M2DCON's team brings 35+ years of experience to the development of chemical/biological decontamination and other aseptic technologies in the form of consumable products and capital equipment. With 25 patents and extensive collaborative research with government laboratories, including U.S. Army CBC (formerly known as ECBC), U.S. Air Force AFRL, Dugway, etc., M2DCON has proven experience developing and manufacturing state-of-the-art decontamination equipment, chemistries and consumables to meet the most challenging requirements.

Decon PLUS is the commercial equivalent to the U.S. DoD Joint General Purpose Decontaminant (M333). It's three-part system is a complete decontamination kit for use against chemical and biological contamination.

Each Decon PLUS kit includes three pouches of unique chemistry packaged laminated foil pouches. The decontaminant is stored as dry powders which are mixed at point of use with locally available water (fresh, brackish or salt water).

Decon PLUS is easy to use. Simply mix with available water, apply to completely wet contaminated surfaces, then allow to dry completely. Once mixed, Decon PLUS can be applied to surfaces or equipment manually or using spray systems.



# Be a part of our professional community!

We welcome comments, contributions and opinion from current and former first responders and military, academia, the commercial sector or any interested individuals. Please contact us at: [Sales@defeqp.com](mailto:Sales@defeqp.com)

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