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PPE Primer for Law Enforcement

[Personal Protection for the Protectors]



INTRODUCTION

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Because police officers are usually the first responders on a scene, you never know exactly what situation or type of hazards you will encounter. To assist others effectively, you must first protect yourself with personal protective equipment (PPE). Today, PPE is not just a “firefighters’ thing.” It is necessary to insure the viability of law enforcement.

Given the nature of police work, the hazards you can encounter are endless and often unknown. They include visible and invisible conditions from airborne pathogens carried by people with Hepatitis and TB, bombs, toxic chemical exposure from meth labs, tear gas, chemical/biological warfare agents, sniper attacks, fire and smoke, airborne particulates and silica dust, spills from transportation accidents, combustible gases, toxic gases, oxygen deficiency, confined spaces, falling building materials, radioactivity, explosions, and nuclear warfare.

The wide range of potential dangers and situations that officers and agencies must respond to dictates an understanding and use of a wide range of personal protective equipment and tools. Categories of safety gear include atmospheric (gas) detectors, SCBA (self-contained breathing apparatus), respirators, head protection, eyewear & face shields, thermal imaging cameras, fall protection and rescue devices, ballistic protection, lighting devices, clothing, gloves, boots, first aid, etc.

But before using PPE, wearers MUST be trained in its use and understand it enough to answer questions like: “Is this product appropriate for this use? What are its limitations? What will it do for me—for how long?”

This primer will give you some background information about PPE and explain some products that might be new to you. Readiness for the future requires products with a reliable past. You can count on MSA.

MSA has protected America’s protectors since 1914. Beyond PPE, to support your emergency management operations and dangerous encounters, we can provide YOU solutions, training, technical expertise, and information about government standards, especially Homeland Security.



SOME HISTORY OF PPE IN LAW ENFORCEMENT

When Ernie Batista began his 29-year law enforcement career, the only personal protective equipment that his sheriff's department issued to him and other deputies was several uniforms and a gun belt.

According to Ernie, "We purchased our own handguns, shotguns, and ballistic vests. During civil disturbances, we were issued gas masks, riot helmets, and riot batons. That was the extent of personal protection equipment in 1974, because the threats that officers faced then were very different than today.

"In years past, the only use for gas masks was for temporary protection from inadvertent tear gas exposure while responding to civil disturbances or dislodging suspects from a building.

"Usually, gas masks were military surplus, and fit-testing occurred only during firearms qualifications. We were told to

put on our gas masks, walk into a tear gas-filled room, take the mask off, leave it off for a minute or two, put it back on, and then walk out of the room.

"We would emerge from the room, heaving and tearing the masks off as we raced each other for the water hose or any other source of relief that we could find. That unpopular and unscientific fit-testing exercise and experience would usually suffice for the rest of our law enforcement career, unless we were lucky enough to be assigned to the SWAT team."

Law Enforcement takes on PPE

Today, officers on the job automatically serve as designated first responders. You regularly face increasing threats from terrorism and hazards from sources such as clandestine drug laboratories. To prevent officers from becoming "blue canaries," law enforcement agencies must take responsibility for equipping their officers

MSA HAS PROTECTED THE PROTECTORS FOR ALMOST 100 YEARS



Mine Safety Appliances was incorporated in 1914. MSA's initial impact was improving mine rescue and enlisting the help of Thomas A. Edison to invent a flameless miner's lamp. Making breathing apparatus for World War I soldiers soon followed, and before long, MSA was also protecting industrial workers in their gritty, chemical-laden, hot and dangerous factories and mills.

Our respiratory protection, particularly gas masks, has been worn by millions of soldiers in war after war, until the present day, when technologically advanced, comfortable, and extremely effective gas masks designed by MSA are still the No. 1 choice of U.S. armed forces.



We also provide safety solutions for our local heroes: police, sheriff's deputies, and prison guards. Whether the situation involves civil unrest, the control of violent inmates, or a terrorist act, MSA offers the level of safety needed to protect the protectors.

With annual sales of over \$700 million, MSA encompasses a network of 28 affiliate companies worldwide and over 4400 employees who design, manufacture, market, and sell hundreds of safety products. Headquartered in Pittsburgh, Pa., we are the largest company in the world devoted solely to worker safety. A detailed sales organization, market specialists, a vast network of distributors, and an award-winning customer service



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MSA PROTECTS . . .

department provide information, expertise, and training across the U.S. and Canada. Throughout the company, we have a passion to protect.

Products:

- Respiratory protection (CBRN gas masks, SCBA, half-mask respirators with chemical & filter cartridges)
- Head protection (ballistic helmets, industrial-style hard hats, fire fighting helmets)
- Gas detecting & monitoring instruments (for oxygen, combustible gases, hazardous gases, WMD)
- Area monitors with multiple capabilities
- Thermal imaging cameras
- Fall protection & rescue equipment (tactical harnesses, rescue belts, confined spaces rescue)
- Communications equipment (internal mask-mounted, helmet-mounted, MICH comm systems)
- Eye, face, & hearing protection (safety glasses & goggles, faceshields, ear muffs, ear plugs)

Solutions:

- Training
- Respiratory fit-testing
- Medical testing
- Technical data
- Explanations of government standards
- Information like this PPE primer
- Expert assistance of MSA's representatives and distributors



with the proper PPE and training them how to use it. In fact, today's officers must become experts in an area where historically, they knew little.

This challenge requires a new awareness and education in a wide range of complex issues related to PPE. Law enforcement officers (LEOs) and agencies must:

- Learn how to evaluate, select, use, and purchase new tools and equipment.
- Become familiar with government standards that govern the use of PPE and how government agencies test and evaluate that equipment against various hazards, including chemical, biological, radiological, and nuclear hazards (CBRN).
- Know where and how to obtain federal funding for PPE, in coordination with other regional law enforcement agencies and state government.

- Understand that the use of PPE requires fit-testing, medical evaluations, inventory control, training, a replacement cycle process, and record keeping.

Obviously these requirements place additional responsibilities on the already heavy work load of law enforcement officers and administrators.

Even "natural" disasters such as hurricanes, floods, and earthquakes put LEOs into the center of hazardous environments. When infrastructures are destroyed, electric power lines are down, and gas lines rupture, the public relies on law enforcement for everything from providing for basic human needs to maintaining law and order.

When you become engaged in activities outside the scope of your normal workday, you need to know how to use a handheld gas detector to determine the



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quality and degree of oxygen in the air. You may need to find a gas or chemical leak, or what dangers lurk in the drug lab you're approaching.

You need to know whether you should wear an air-purifying respirator (half mask with chemical/filter cartridges), a CBRN gas mask, or an air-supplied respirator (full-face mask with air tank). You need eye-wear and clothing and gloves, even during recovery and remediation phases of a disaster of any sort. These tools both protect you personally and make you more effective as a law enforcement officer.

Representative comments by law enforcement

Collective action:
The National Institute of Justice, Office of Science and Technology, the International Association of Chiefs of Police (IACP), and the Public Safety and Security Institute for Technology (PSITEC) retained the services of the Center for Technology Commercialization's Public Safety Technology Center (CTC/PSTC), to conduct a research project to:

1. Identify the various missions and functions that law enforcement officers must undertake when responding to Chemical, Biological, Radiological, Nuclear and Explosive incidents; and
2. Identify appropriate Personal Protective Equipment needed by law enforcement officers to fulfill each of the identified missions and functions.

To meet these objectives, the PSTC and IACP arranged two days of presentations featuring best practices and research, as well as several facilitated focus group sessions on January 14 – 15, 2004 at the New York State Police Academy in Albany, New York.

The Focus Group participants spoke for a wide range of law enforcement agencies representing state, local and county organizations. All participants had experience in critical incident management and Personal Protective Equipment.

Note: Material from this document will be referred to in this Primer as "IACP Report."

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Experience in the line of fire:

- MSA's solid history of providing state-of-the-art PPE, instruments, service, and support to first responders during emergencies proved itself after September 11, 2001, when MSA's experts helped supply products, fit-test respirators, and train hundreds of first responders, rescuers, and recovery workers.
- Your MSA experts know that proper equipment selection, training, and coordination are a crucial part of organizing a successful Homeland Security Program.

Affiliations:

AFFNA	ICTOA
FBINAA	National Sheriff's Assoc.
IACP	NTOA

MSA has a history of protecting the protectors, before, during, and after emergencies. Today, with increasing focus on creating the specialized kinds of protection that law enforcement officers need, we have dedicated even more of our excellent, state-of-the-art research and engineering capabilities to creating and improving products designed to protect you. Protecting you is the business of MSA.

What this means for Law Enforcement

Just as other protective equipment for law enforcement officers has evolved over the years, MSA's safety equipment offers cutting-edge advantages that enhance ease of use and reliability. MSA brings new confidence that you are supplying the safest available systems to your officers. Our ergonomically designed products allow for maximum

By the time Ernie Batista retired from his 29-year career in law enforcement, his extensive experience from deputy sheriff to DEA had taught him first-hand the value of PPE. Today, Ernie's role as MSA's manager of homeland security puts him in the best possible position to help us protect you by truly representing your needs and expanding our capabilities in the law enforcement arena.

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MSA PROTECTS . . .

protection while providing a comfortable fit. Ease of use helps encourage worker compliance with department and government safety guidelines.

We look at providing protective equipment as a complete process: helping you to choose the right components to solve your safety problems, supplying the best products on the market, training your personnel, and providing service to your department or agency after the sale. This results in a higher level of safety, more successful tactical results, and economical solutions for your safety needs.

MSA is a partner to help you achieve your safety goals. We can:

- Help reduce your total cost of ownership of safety equipment
- Work with you to solve challenges in your safety program
- Present valuable solutions for your safety program, including training assistance, explaining government standards, addressing stocking and supply issues, and problem-solving
- Train your officers at their work site on any MSA equipment purchased. This includes proper use, maintenance, and safety aspects of MSA respirators. Training by MSA experts and/or an MSA-authorized distributor can take the form of informal safety meetings, a formal classroom, or field sessions.

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One individual officer:

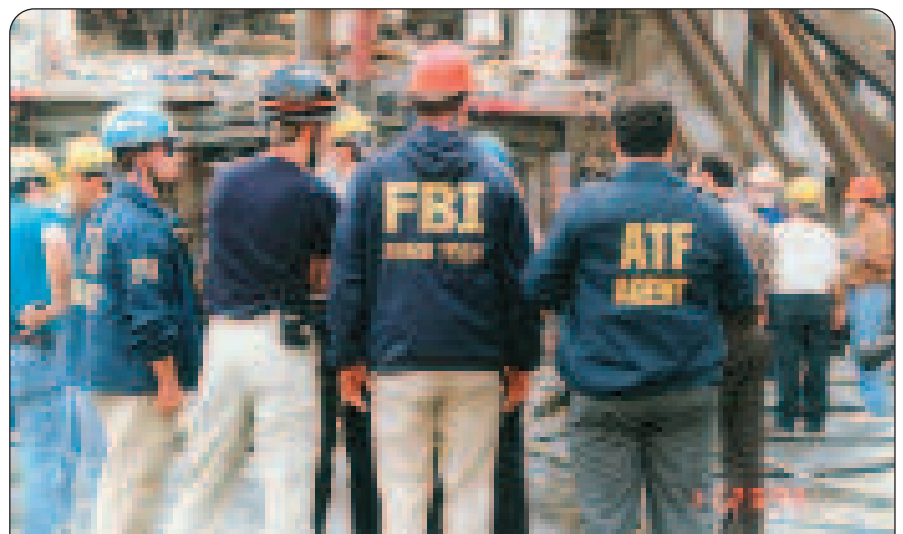
Julie Spada is an HLS officer with the Glendale PD in Arizona, whose responsibilities include establishing strong PPE programs for LE officers. As Julie recently observed:

“Things have changed. The fire service has traditionally handled hazardous materials-type calls, with law enforcement’s primary responsibility being to support the fire service in ways such as securing the scene and traffic control, never entering the hazardous area.

“However, terrorists are now using biological and chemical agents as weapons against the citizens of our communities, so law enforcement agencies must now be a part of the first response to such incidents. We may need to apprehend terrorists or investigate a terrorist-related incident in a chemical or other hazardous environment. Law enforcement must have the correct level of protection for these unknown environments, and to ensure the officers are safe when operating at the scene.”

“Law enforcement agencies have a long way to go. Grassroots operations for Fire Service are hazmat related, so funding streams related to Homeland Security have enhanced their program that already had a strong foundation of PPE, training, and Standard Operating Procedures relating to Hazmat Response (WMD).

“But since HazMat is not grassroots operations for law enforcement, little or no foundation exists for PPE, Training, SOP, etc. Grant funding cannot enhance a program that has never been established, so now, law enforcement agencies face a major challenge when they are given money to buy PPE. They do not have the expertise to know what to buy. Also, while funding exists to buy this equipment, we received no funding to train, plan, and implement the equipment. These costs had to be absorbed into a budget that was already impacted by the growing demand on law enforcement following 9/11 for preventing a terrorist event.”



Facing the facts

- *Officer safety is the number one priority for command level. Officers must be provided with PPE that will allow them to perform their duties and above all, keep them safe.*
- *It's important to recognize that the Fire Service primarily deals with natural acts and accidental events, but law enforcement has to address intentional criminal acts. The equipment, training needs, missions, responsibilities, and operational issues are much different. The selection, use, and application of equipment must evolve from law enforcement, because the Fire Service template does not work for us.*
- *Federal funding gives us an opportunity to build—from the ground up—our capability to prepare and respond to a WMD incident.*
- *It is our duty to protect the citizens of our community against terrorism. In the event that law enforcement is unable to detect, deter, or prevent an incident, we must be prepared to respond and overcome – as quickly and methodically as possible.*
- *Proper equipment and training can only enhance our ability to save lives of the community and our officers. PPE is now OUR responsibility!*

(Julie Spada, HLS officer, Glendale PD, Arizona)



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- We can help you make sure that proper levels of repair parts are maintained and that your personnel are trained in cleaning and repair. There is no charge for these services.
- Work with you to analyze possible hazardous situations your officers may face and determine which protection best suits their needs. We can conduct walk-through inspections of your sites to help you form an inventory of action areas.
- Help you arrange for fit testing your personnel to meet OSHA guidelines.
- Assist with on-line medical certification to help you meet this respiratory protection requirement.
- Finally, MSA and our distributors will make every effort possible to supply law enforcement organizations with expedited shipping in emergency situations.



EXPLANATIONS OF WHAT PPE IS AND WHY YOU NEED IT

The traditional assumption is that most specialized equipment needed at the scene of an accident or incident arrives with the fire service. Their traditional duties of battling fires and responding to other extremely hazardous situations have always demanded extensive training and the best available protection, including tough helmets, turnout coats, and an air tank with breathing mask.

Today's reality is that law enforcement officers require equipment that fits your mission. What is appropriate for firefighters may be a burden or even a danger for police officers. You require customized versions of respiratory protection, helmets, and other PPE, besides specialized tools and equipment. You further benefit from appropriate training and understanding how personal protection and equipment can maxi-

mize your on-the-job efforts. Police need their own customized information about PPE.

At the very least, officers must be trained at a minimum level of awareness about chemical/biological agents and equipped with PPE appropriate for hazards they expect to face, as well as trained in use, limitations, and maintenance of that PPE.

It makes sense to simply commit the time and effort toward establishing a new program which encompasses all aspects of selection, care, use, and maintenance of respiratory protection and other safety products. Otherwise, learning is happenstance and incomplete. Lack of information about PPE is much more burdensome than simply embracing the inevitable. The fact is, if you want the right protection so you can do your job, you welcome the opportunity to

familiarize yourself with its benefits and use.

PPE selections must be based on hazards and risk.

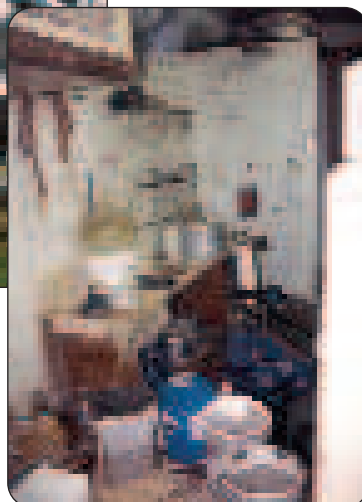
The Office of Homeland Security's Responder Knowledge Base (RKB) is an on-line web site, a knowledge database focused on PPE. To emergency response purchasers and planners, the RKB provides a trusted, integrated, and on-line source of information on products, standards, certification, grants, and other related information.



The concept of operations has been to compile information on PPE equipment to answer the following questions:

- What is out there?
- Has it been tested?

- If tested, to what standards?
- What training is needed?
- How do we pay for it?
- Who can I talk to who has used it?



"[Without a] second thought, you will respond to do what is necessary to rescue individuals wherever they are. . . . We've violated probably every precautionary measure established by NIOSH, etc., [but] . . . people are going to do what their instincts tell them, and that's to save lives. . . . think[ing] about the consequences [is] secondary." (Law enforcement panel member, NIOSH conference: Protecting Emergency Responders, Dec. 2001)

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The RKB system has relied on information from manufacturers, the GSA catalog, the InterAgency Board, NIJ Selection Guide, SEL, and the Office for Domestic Preparedness (ODP) to develop the database. The Responder Knowledge Base went on-line on October 31, 2003, and is nearing the full range of capability.

(Source: Donald O. Hewitt, program manager, The Memorial Institute for the Prevention of Terrorism Responder Knowledge Base)

The site can be accessed at www.rkb.mipt.org

The IACP report generated by the January 2004 meeting in New York offers some guidance in this area on pages 21-25, including the following:

Threats to human beings, with the primary focus on inhalation and dermal areas.

- Inhalation (gases, vapors, and aerosols)
- Dermal (rate of absorption increases with skin damage and warm weather)
- Ingestion (a less common route, such as hand to mouth)
- Injection (explosion and imbedded foreign bodies)

Issues for consideration in the PPE selection process:

- PPE selection must be based on hazards and risks
- Traditional EPA/OSHA Levels A, B & C do not provide minimum protective performance criteria for WMD personal protective ensembles
- The PPE selection process for local/state emergency responders must be simplified!
- The IAB Standard Equipment List (SEL) has developed a simplified process for threat identification, PPE selection and performance specification guidance for acquisition
- NIJ Guide for the Selection of PPE for Emergency Responders (Nov. 2002)
- Responder Knowledge Base – web-based informational tool

Standard Equipment List (SEL) with the 2003 Revision

Objectives:

- Provide additional detail to enable response organizations to make better PPE selection decisions
- Identify standards recommended by the IAB
- Link standards to specific equipment items
- Establish process to list equipment compliant with specified standards
 - NIJ Guide for the Selection of PPE for Emergency Responders
 - Responder Knowledge Base (DHS/ODP/MIPT)



“[In Oklahoma City,] you didn’t have to wear personal protective equipment, but if you didn’t wear PPE, you didn’t work on site.”

(A firefighter on duty on the scene)



INTEROPERABILITY

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The drive for fundamental uniformity

One major LE concern is that equipment should meet the demands of mutual aid and interoperability, so that various law enforcement agencies (and other first responders, if possible) are equipped with the same or similar PPE and tools.

Not only should all responders working in the same area be protected appropriately, no matter what their role, job, position, or organization, but their PPE, training, and communication systems should also be at least somewhat in alignment with each other, to provide optimum operability as they respond to emergency situations in their respective roles.

To this end, MSA has had various levels of involvement with law enforcement and other first responder organizations during their planning process to acquire and augment PPE for Homeland Security.

Because the complexities of the selection process can be overwhelming, law enforcement can benefit by interacting with fire, emergency medical, and HazMat Services in conducting hazard assessment and risk analysis.

Learning from past emergencies

You may already be aware of guidelines and advice offered by a number of organizations with vested interests in the orderly and successful incorporation of increased levels of appropriate PPE for law enforcement.

During the response operations at the World Trade Center and the Pentagon in 2001, responder agencies had trouble managing worker safety. The magnitude and breadth of such an event make following normal safety procedures nearly impossible, so interoperational preparation is essential.

NIOSH-RAND Report

“Safeguarding Emergency Responders During Major Disasters and Terrorist Attacks: The Need for an Integrated Approach” is the title of a useful report prepared by the National Institute for Occupational Safety and Health (NIOSH) and the RAND Corporation. They concluded that “the exceptional complexity and scale of major disasters oblige response organizations to rethink their approach to safety management. Safety should be viewed not as an individual concern . . . but rather as a collective one, where safety is a multiagency function and organizations join forces to keep all responders from harm.”

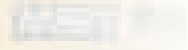
The NIOSH-RAND team developed recommendations you can follow to facilitate each step in the risk-management process during a major disaster:

- Building an integrated safety

“...all responders working in the same environment should have access to appropriate protection [regardless] of their particular role or organizational affiliation.”

(Rand report)





function into the existing structure for managing major response operations. Make safety part of the overall management of a major incident. Manage it as a multi-agency effort, consistent with the National Incident Management System developed by the Department of Homeland Security.

- Using preparedness efforts to plan ways to integrate safety management. Define needed safety assets and expertise, and identify available resources in advance. Establish management processes and ways of ensuring that reinforcements will be able to “plug in” to an ongoing operation.
- Developing a cadre of highly trained “disaster safety managers” to facilitate coordination among agencies. Identify and train key individuals with a broad-based understanding of disaster situations and cross-cutting expertise in safety management to supervise multi-agency safety efforts.
- Incorporating safety and health issues more realistically into joint exercises and training. Make safety training more than just a “footnote” to the operational focus of training exercises. Develop exercises that are more faithful to actual disaster conditions.

- Developing a common terminology for safety issues and procedures. Establish standard terms and definitions to ensure that responders from different agencies have a common understanding of safety matters and can communicate without obstacles.

IACP Report

The Interagency Board (IAB) for Equipment Standardization and Interoperability was started in 1998 as “a user-working group supported by voluntary participation from various local, state, Federal government, and private organizations.” It evolved from a group of emergency responders brought together to discuss a concept for National Guard RAID Teams – Civil Support Teams (CSTs).

IAB’s mission is “to establish and coordinate local, state, and Federal standardization, interoperability, and responder safety to prepare for, respond to, mitigate, and recover from any incident by identifying requirements for Chemical, Biological, Radiological, Nuclear or Explosives (CBRNE) incident response equipment.”

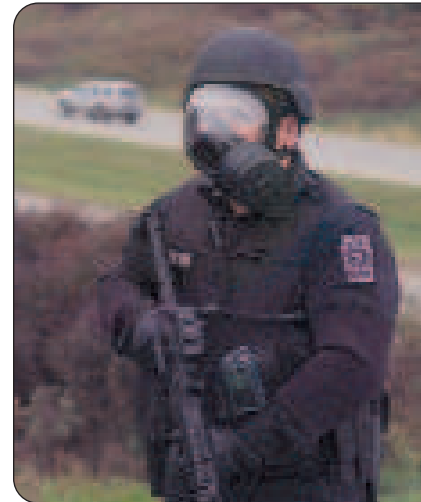
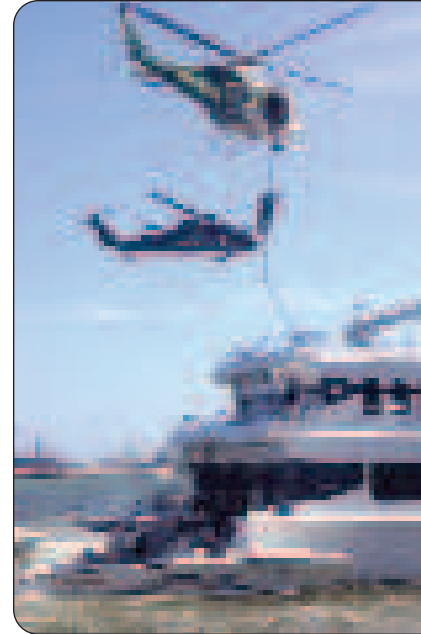
The IAB Standard Equipment List (SEL) provides guidelines to emergency responders regarding acquisition of their WMD response equipment. The SEL proposes interoperability and standardization for local/state emergency responders and Federal/military organizations in the areas of Personal

Protective Equipment (PPE), Operational Equipment (OE), Interoperable Communications and Information Systems, Detection and Decontamination, and Medical Requirements. (IACP report, pages 21-25)

According to the IACP Report, the IAB has noted certain areas that need to be given special consideration by law enforcement because of its diverse mission areas, including the following:

- Some situations involve dismounted personnel.
- There are limitations to the equipment that can be carried. Police officers store and carry most of their equipment in their patrol car trunks.
- Most state-of-the-art detection technologies and equipment are still not small, practical, and accurate.
- What impact does various PPE have on use of weapons and physical senses such as sight, hearing, and communications?
- Tradeoffs needing to be addressed include:
 - Impact of PPE on LE personnel doing LE missions
 - Lower levels of WMD threat protection
 - Use of escape masks
 - Training and awareness for different LE missions (IACP report, pages 21-25)

For the complete IAB Annual Report, see the web site: <http://www.iab.gov>.



THE GUIDING INFLUENCE OF GOVERNMENT AGENCIES AND INDUSTRY STANDARDS



Although certain government agencies may already dictate practices and procedures of various law enforcement individuals and groups, chances are that most law enforcement officers are unfamiliar with how NIOSH and OSHA influence safety and health equipment and behav-

iors in the average American workplace.

Besides mandatory government regulations, voluntary industry standards and independent testing labs assure you that PPE manufacturers will provide reliable protection. You should

ensure that any PPE that you evaluate meets all applicable nationally recognized U.S. government and industry standards, such as NIOSH, OSHA, NFPA, ANSI, etc., and some Canadian and international standards.

Police officers follow the directives and regulations established by their own department. Today, many departments have coordinated their SOPs to respond to emergencies with other agencies. Federal agencies each have their own regulations and guidelines, which align with their core agency such as the Departments of Justice, Homeland Security, etc.

Organization	How it's related to PPE	Website
NIOSH (National Institute for Occupational Safety and Health). Federal gov't agency under the CDC (Centers for Disease Control).	Develops & enforces regulations for workplace safety, research, & education of injury prevention. Certifies respiratory protection devices, including CBRN gas masks.	NIOSH www.cdc.gov/niosh/homepage.html
OSHA (Occupational Safety and Health Administration). Federal gov't agency under the DOL (Department of Labor).	Promulgates & enforces workplace safety regulations. Serves as bottom line to ensure that basic standards are met for PPE.	OSHA www.osha.gov
EPA (Environmental Protection Agency). Independent agency in the executive branch of gov't.	Sets national standards for states to legislate issues that impact the environment, including how hazardous substances are handled.	EPA www.epa.gov
DEA (Drug Enforcement Agency). Federal gov't agency in the Department of Justice.	Enforces U.S. controlled substance laws & regulations.	DEA www.usdoj.gov/dea
NIJ (National Institute of Justice). Federal gov't agency in the Department of Justice.	Researches crime control & justice issues. Also certifies ballistic protection.	NIJ www.ojp.usdoj.gov/nij
ANSI (American National Standards Institute). A private, non-profit organization.	Develops U.S. voluntary standardization & conformity assessments & systems for many products & processes, including safety products. Voluntary standards-setting committees include MSA & other manufacturers & safety professionals.	ANSI www.ansi.org
NFPA (National Fire Protection Association). An international, non-profit organization (accredited by ANSI).	Provides science-based codes & voluntary standards for fire prevention. Developed the 5 PPE standards for first responders which were adopted by the Homeland Security agency.	NFPA www.nfpa.org
SEI (Safety Equipment Institute), private, non-profit organization (accredited by ANSI)	Offers third-party laboratory testing for PPE such as industrial hard hats, eyewear, & hearing protection.	SEI www.seinet.org

Approach to the Scene

The actions of the first law enforcement officer on the scene set the stage for the remainder of the response including the safety of all responding officers. The first priority must be self-protection. The following list outlines actions that are necessary to gain initial control of the response effort:

1. *Notify dispatch, request supervisor, additional units, and other necessary assistance (e.g., fire department, HazMat, bomb squad, etc.).*
2. *Protect self.*
3. *Approach from upwind.*
4. *Maintain distance (minimum of 200 meters up wind until further advised by the Incident Commander).*
5. *Wear protective equipment:*
 - *Level C provides adequate protection for on the perimeter where live victims exist.*
 - *Full-face respirator necessary for respiratory protection.*
 - *Chemical protective gloves.*
 - *Chemical protective suit.*
 - *Foot covers.*
 - *Know the limits of the protective clothing.*
 - *Do not enter enclosed areas (i.e., buildings) or areas without live victims with Level C protection.*



- 6. Avoid liquid contamination.
- 7. Decontaminate immediately if exposed to liquid contamination.
- 8. Officers inside of the hazard area should exit and be decontaminated as soon as possible.

(Source: Section V: Initial Response in DEA rules)

The NIOSH-RAND focus group recommended that OSHA, EPA, and other appropriate information be put into a database providing for guidance to the appropriate equipment for these reasons:

- Law enforcement job functions have changed and evolved
- Regulations should be assessed against the law enforcement mission
- Applicable national standards should be reviewed as a checks and balances system
- An analysis should be conducted to determine issues and performance gaps
- IACP should be the driving force with resolving these issues

Well-trained law enforcement personnel should know how to wear and use the appropriate levels of PPE, in accordance with OSHA standards. You should also be able to describe OSHA-compliant PPE, cross-referenced by type of hazard.



Regulations regarding respirator use

OSHA rules

The proper use of respirators is mandated by OSHA. Private companies and government agencies can be fined for failing to implement and enforce a respiratory protection program. The guidelines are spelled out in government code 29 CFR 1910.134. These regulations are available on the internet or your local OSHA office.

(MSA's education bulletin 1000-61 is available to help you understand "Key Elements of a Sound Respiratory Protection Program.")

The regulations call for a written respiratory protection program, often written and disseminated by higher administrative offices of your organization, which must include the following:

- Hazard assessment
- Selection of protective equipment
- Medical evaluations
- Fit testing
- Training
- Respirator use (proper usage guidelines)
- Cleaning and maintenance
- Program evaluation
- Record keeping

NIOSH certification

OSHA mandates that respirators used by your officers be NIOSH-approved. NIOSH tests respirators and filter media to make sure they meet certain minimum guidelines. NIOSH also is responsible for current and future testing and regulations for respirators for protection from CBRN hazards. MSA has published a Primer that can help you understand the regulations currently in effect for CBRN Gas Masks and SCBA. Ask for a copy of Bulletin No. 5555-180, "CBRN Primer."

Some police departments currently use surplus respirators that don't have NIOSH approval and may not meet the modern guidelines. For instance, a department using M17 (military) respirators is not compliant with OSHA guidelines, as this equipment is not NIOSH-approved. Furthermore, users of surplus equipment are often trusting that decades-old filter media will still be effective.

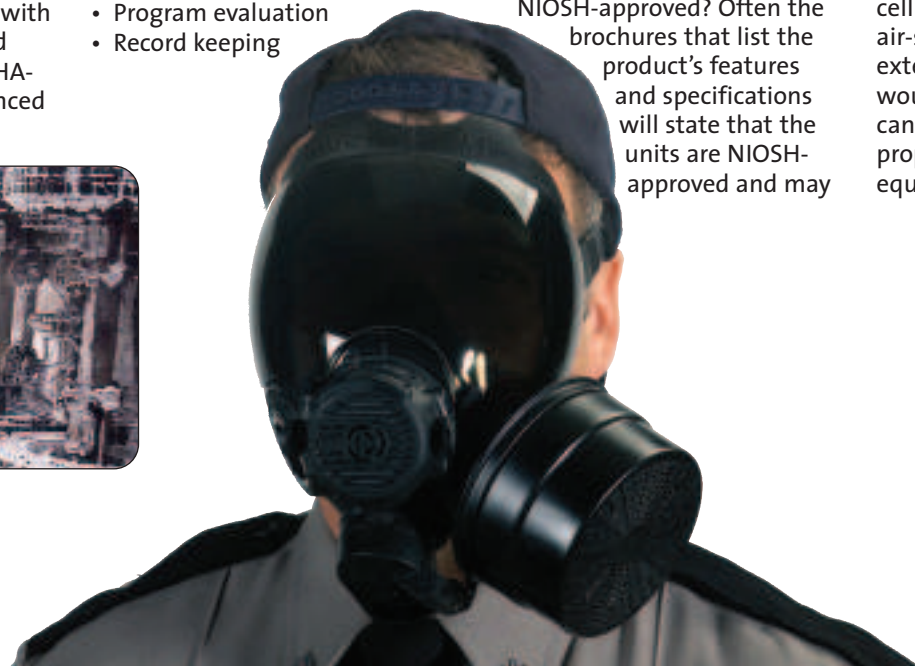
How can you tell if the respirator you are considering is NIOSH-approved? Often the brochures that list the product's features and specifications will state that the units are NIOSH-approved and may

list the approval numbers. All new MSA respirators meet these standards. MSA understands that the safety of your officers is Number 1. Our high standards will help you meet your protection goals.



Respirator and cartridge effectiveness

Note: These masks may not be appropriate for use in some situations. Because air-purifying respirators (APRs) like gas masks do not add oxygen to the user's breathing air, they are not effective in oxygen-deficient atmospheres. Most APRs are not effective against carbon monoxide. A situation in which there are burning materials, for instance, when an inmate has caused a cell block fire, would call for an air-supplied respirator. MSA's extensive line of SCBA units would meet these needs. We can help you in ascertaining the proper uses and limits of MSA equipment.



MSA PRODUCTS FOR POLICE PROTECTION

Respiratory Protection

Air-Purifying Respirators (APRs)

If the hazard is known and does NOT require supplied-air respirators, you will get suitable protection from half-mask and full-face air-purifying respirators (APRs). (Gas masks are a type of APR.)

MILLENNIUM® CBRN GAS MASK

In 2004, thanks to our outstanding research and engineering experts, MSA produced the **Millennium® CBRN Gas Mask**, the first APR to receive NIOSH certification as “compliant against CBRN.”

The Millennium mask, already chosen by thousands of law enforcement officers nationwide, is a Hycar (rubber) version of the standard-issue gas mask for the U.S. Air Force and Navy. It combines high performance, exceptional fit, comfort, and cost efficiency.

Features include:

- A flexible, 1-piece polyurethane lens with wide field of vision, bonded to durable Hycar facepiece
- A dual-canister mount (NATO 40mm thread) to allow weapon sighting from either shoulder
- A drinking tube connection for fluid ingestion during extended operations
- A fully elastic, 6-point head harness for easy on-off and adjustment, no hair pulling
- An internal nose cup with 2 check valves to deflect air from the lens and reduce fogging
- A CBRN canister containing chemical sorbents and a P100 filter to attract and retain contaminants
- A standard mechanical speaking diaphragm, or add MSA's optional ESP® II Communications System
- An optional butyl-coated nylon hood for total head protection
- The NIOSH approval (No. TC-14G-0270) for protection at a CBRN Cap 1 rating



Police officers tested and reviewed MSA's Millennium CBRN Gas Mask with MSA's ESP II Voice Amplifier and awarded it an overall score of 4.42 points out of 5 possible points in 13 categories. Here are some of their comments about both products.



Feature	Specific comments
Design	[Both] are very well made and are highly recommended. I liked the unit for its simple operation and ease of attachment. Even with the amplifier on, my voice was heard loud and clear over the radio. [Both] functioned well and could be used effectively for any operator on a team. [The] voice emitter . . . does make for easier communication than other masks. Everyone within 6 to 10 feet could clearly hear everything that was said. . . a very nice enhancement for any tactical team.
Performance	Internally, the . . . check valves greatly reduced fogging. The field of view is excellent due to the one-piece face shield. The internal drinking tube is an added benefit. If the wearer is wearing a Camelbak with the correct adapter, getting fresh water while wearing the mask can make all the difference on a hot day. The ESP II Voice Amplifier is a very handy attachment that every team should have.
Ease of Use, Convenience	Donning the mask is quick and easy. The head strap is designed for rapid donning.
Quality	The mask itself is very well made and extremely pliable.
Durability	The soft facepiece is covered with a hard clear plastic protector that functions both to protect the soft lens and as additional eye protection for me.
Versatility	Conversion of the filter on either side of the mask to accommodate right or left hand shooters is quickly accomplished. The filter port uses a standard 40mm NATO thread and can accept a wide variety of filters. The . . . drinking tube will adapt to any U.S. canteen.
Application	Breathing is comfortable, even under heavy exertion. The mask allowed an MP5 to be shouldered successfully and did not distort my Aimpoint.
Comfort	It is very comfortable and conforms to the face well. It is without doubt the most comfortable mask I have ever worn.
Cleaning & Maintenance	The instruction books for both were easy to read and well written.





The **Advantage® 1000 RCA Gas Mask (Riot-Control Agent)** has a flexible, single polyurethane lens with wide field of vision, bonded to a durable Hycar rubber facepiece. A polycarbonate lens outsert, tinted or clear, can be added. A dual canister mount allows for weapon sighting from either shoulder, and a fully elastic, 6-point head harness makes on-off adjustment easy. A standard mechanical speaking diaphragm is included.



MSA's **Response™ Escape Hood** is made of high-performance laminate material for protection, fit, and ease of use when escaping from nuclear, chemical, and biological agents. The elastomeric neck seal conforms to fit most wearers, and a nose cup reduces lens fogging and aids communication. The large lens and translucent hood promote good visibility and face recognition, and help reduce claustrophobia.



When protection from CBRN and riot-control substances is not needed, MSA's **Advantage® Respirators** may be your best bet for comfort, light weight, stability, and low maintenance. The thermoplastic rubber facepiece seal conforms to each wearer's face, while delivering exceptional stability, so it will not collapse during wear. Multigas GME and GME-P100 cartridges are only two of a complete line of particulate, chemical, and combination cartridges for lightweight, low-profile performance.



Powered air-purifying respirators (PAPRs) filter contaminants from ambient air while providing a constant air flow to a facepiece. The **OptimAir® 6A PAPR** has a belt-mounted motor/blower with breathing hose to the full-mask facepiece and a maintenance-free lithium battery. It is used with a family of filters and cartridges for protection against particulates and/or toxic gases and vapors. Optional equipment includes a Tyvek hood (with HEPA filters only) and a rechargeable NiCd battery.



The OptimAir 6HC was designed with the needs of responders in mind by incorporating an impervious Tychem hood and canister which incorporates military grade carbon and a high efficiency particulate filter to allow extended storage and immediate deployment even after that.

Supplied-Air Respirators (SARs)

No first responder should ever approach unknown or IDLH (Immediately Dangerous to Life or Health) atmospheres without wearing self-contained breathing apparatus (SCBA). NFPA-compliant SCBA is your best bet.

In the past, police departments have called upon fire companies to assist them with equipment needs when a response required SCBA. Recently, however, departments surveyed have identified a need for more SCBA equipment, due to terrorist threats of WMD.

Use of SCBA by law enforcement is limited to bomb squads, SWAT teams, and drug enforcement officers in municipal police departments. Traditionally, correctional facilities have been the primary users of SCBAs, during incidents of fire or when tear gas is deployed during riots. You can use an APR adapter to switch your SCBA from a positive-pressure facepiece to a negative-pressure APR when working in non-IDLH recovery and remediation atmospheres.

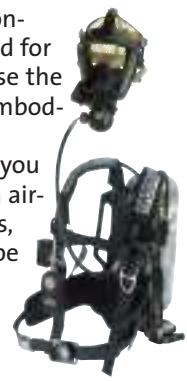
The **BlackHawk™ Tactical Air Mask** is black, sleek, and silent. It combines MSA SCBA's finest features with special modifications to eliminate reflections and audible sounds that would compromise concealment. Features include a mask-mounted regulator, sized facepieces, choice of cylinders, and air refill and air-line options.



The BlackHawk SCBA with rappel belt has been tested and recommended by members of the National Tactical Officers Association.



In cases where MSA's premier self-contained breathing apparatus is needed for use in fire and CBRN incidents, choose the **CBRN FireHawk™ Air Mask**, which embodies safety, simplicity, and reliability. Special accessory equipment allows you to replenish air supplies, adapt to an air-line capability inside confined spaces, or even unfurl a **Rescue Belt** to escape from dangerous heights.



MSA PRODUCTS FOR POLICE PROTECTION

Communications Systems

One of the most significant “lessons learned” by first responders to Sept. 11 events was the crucial importance of having widespread and effective communication systems. Solve this necessity by adding one of MSA’s several types of communications systems that integrate with your respiratory or head protection.

MICH COMMUNICATION SYSTEM

MSA’s new **MICH Communication System** is lightweight, comfortable, easy to use, and reliable. It uses an unobtrusive microphone/sound transmission system to interface with radio transceivers and intercom systems. MICH can be worn alone or under MSA’s ballistic Advanced Combat Helmet (ACH) shell.



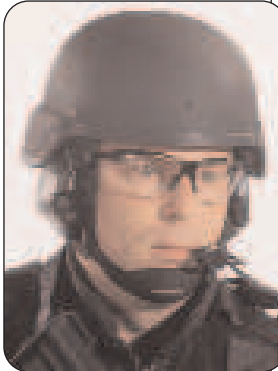
The single-communication system facilitates hands-free use of the radio. The dual-communication system allows the user to hear two radio communications or one radio and one intercom system. Both systems are compatible with various radio communication systems and have been field-tested and proven under strenuous military combat conditions.



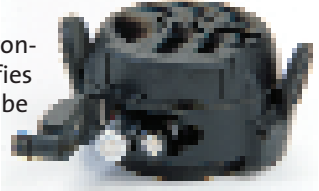
System components:

- One high-noise headset with bone-conduction microphone and quick-disconnect communication-box connector
- One PTT (push-to-talk) communication box with connecting cable
- Protective box pocket with Velcro closure

The low-noise headset is used for environments such as long-range patrolling in which a minimal profile headset is required. The high-noise headset, for areas where weapons may be fired, provides hearing protection above 82 dB (an NRR of 22), and amplification of ambient noise below 82 dB. (See page 20 for details about the ACH.)



Add MSA’s optional compact, battery-operated **ESP® II Communications System to your gas mask.** This self-contained electronic speech projection device clearly amplifies and projects the wearer’s voice, so it can be heard clearly, even in areas with high ambient noise.



Add the **ClearCommand® RI Communications System to SCBA** (amplifier with or without radio interface). An internally mounted microphone and large 50mm-diameter amplifier speaker give optimal clarity and more than twice the volume of a facepiece alone. The “shared-use” feature means that individual issue is not required.

MSA’s exclusive **ClearCommand® HCS Helmet Communications System** is a state-of-the-art radio interface device which easily snaps onto your helmet’s ratchet suspension. The 5.3-oz. helmet-mounted microphone and ear speaker assembly connects to a lapel microphone or optional stand-alone PTT (push-to-talk) unit, which can be used under HazMat suits.

The “noise-eliminating” bone conduction voice transmitter virtually eliminates high ambient noise levels. The soft silicone bone-conduction microphone has no pressure points, and the direct-to-ear speaker can be positioned on either ear.



“I am rapidly becoming impressed with MSA for continuing to excel in their product research for law enforcement and the rest of the first responder profession. This is an excellent product, and I would recommend it to anyone who asks.” –Police officer who formally tested the Millennium CBRN Gas Mask with ESP II Voice Amplifier

Thermal Imaging Cameras (TICs)

Law enforcement agencies use Thermal Imaging Cameras (TICs) to make difficult tasks easier to solve and enhance officers' safety. Search and rescue teams, helicopter units, patrol units, and narcotic units who use TICs as "visual" tools can save hours, even days of search time.

Advanced infrared imaging technology allows you to see through dark, chaotic, or smoky environments, so you can maneuver the scene quickly and as safely as possible. TIC sensors react to infrared energy from all surrounding objects and convert the "thermal signature" to visible images of victims and suspects, heat sources, and impediments in your environment.

Because TICs measure the heat emitted by an object rather than the light reflected by it, TICs can do some things that image intensifiers cannot, with no need for supplemental illumination. TICs are not subject to image "blooming" when subjected to exposure of bright lights, in the way that image-enhancing equipment is in well-lit urban areas. (In a recent survey of police departments, 15% reported that sodium vapor lights used in the city prevent them from using night-vision systems.)

MSA's **Evolution® family of thermal imaging cameras** provides high-resolution, quality images for clear, crisp definition of objects in the scene. They are known for their rugged performance, outstanding durability, consistent reliability, and best-in-class technology.

MSA's **Evolution® 5000 TIC**, tethered to your belt, is hands-free until you need to put it into immediate action, with its one-button operation. Immediate start-up, easy integration, and ergonomic design keep the Evolution 5000 always available and ready to work when you are.



High-impact construction and an internally housed battery system protect the camera's crucial components. A wide field of view and highly functional Heat Seeker and Quick-Temp options provide the most comprehensive display of information in high- and low-temperature environments.

With input from law enforcement officers, MSA's research and engineering teams are working to develop customized TIC designs even better suited to LE use.

Everyday uses for a TIC

While thermal imaging cameras are undoubtedly useful tools for locating unseen energy hazards in response to HazMat spills, transportation accidents, bomb threats, confined space searches, and collapsed buildings, they also can help you complete your routine assignments. Here are some suggestions.

For patrol officers and Tactical Teams (SWAT):

- Use TICs during nighttime operations, to determine the number of suspects and monitor their activities in and around targeted buildings, dark warehouse-type areas, parking lots, etc., before conducting arrest or search operations.
- Scan alleys, neighborhoods, and wooded areas without alerting suspects of your presence.
- Find vehicles with warm engines and tires in total darkness, such as large parking lots at night.
- Pursue suspects through fog and foliage in wooded areas.
- Detect fresh prints in cool night temperatures and body impressions on car seats of recently abandoned vehicles.
- Employ your TIC when entering buildings to search for armed suspects. You'll have the advantage of entering in a stealth mode, without flashlights, remaining unseen, while seeing your suspects.
- Supplement your canine team use during solitary building entry with a TIC for added safety and stealth and the advantage of seeing the suspect first.
- Respond to burglary calls, peeping toms, assaults, disturbances, etc., and search for suspects fleeing on foot with your TIC instead of sweeping a spotlight or flashlight over the area to tip off the suspect.
- Operate your TIC during night vehicle stops, to detect heat signatures of suspects who may have fled the vehicle.

For narcotic units, drug agents, and border patrol officers:

- Conduct your nighttime surveillances in and around clandestine drug labs with a TIC to monitor actions of suspects, especially in rural areas, so you can see suspects coming outside to smoke, moving equipment, etc. (Note: a search warrant may be needed to use the TIC under these circumstances.)
- Detect the significant heat signatures of indoor marijuana-growing operations and methamphetamine clandestine labs.
- Conduct your routine and targeted surveillances of suspects at marinas, small airports, clandestine airfields, secluded or well-populated roadways, and businesses, and along the U.S./Mexican border.
- Meet suspected drug smugglers, especially at night, with your TIC aimed at aircraft, boats, vehicles, or border crossings.

For search & rescue operations, and crime scenes:

- Carry your TIC to give you time-saving and cost-effective advantages in nighttime search and rescue situations.
- Increase the efficiency of manpower and canine use with a TIC to search for suspects or children in wooded areas.
- Enhance crime scene or HAZMAT investigations by detecting evidence such as liquids, blood splatters, etc., with your TIC.

MSA PRODUCTS FOR POLICE PROTECTION

Gas detection and monitoring instruments

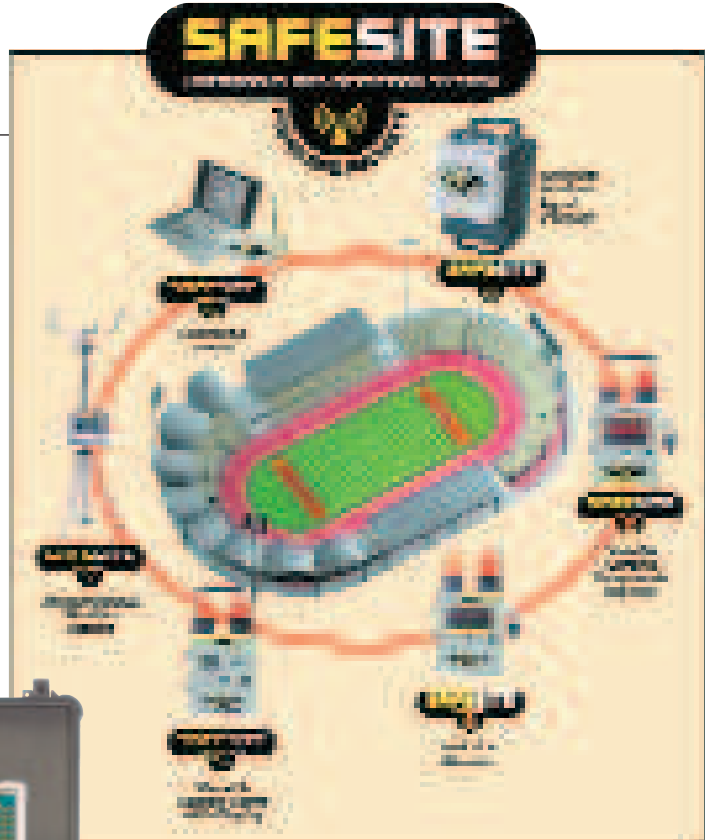
Gas detection and monitoring instruments from MSA are reliable, durable, versatile, and easy to use.

SAFESITE™ HAZARDOUS GAS DETECTION SYSTEM

The **SafeSite™ Hazardous Gas Detection System** from MSA detects and communicates the presence of Chemical Warfare Agents (CWAs) such as nerve and blister agents, volatile organic compounds (VOCs), and numerous toxic industrial chemicals such as chlorine, ammonia, hydrogen cyanide, and hydrogen chloride, within a wireless network. The system can be transported and operated in a temporary location or integrated permanently into buildings or mass transportation systems.

The SafeSite System's ability to detect chemical threats effectively helps you reduce the risk of chemical exposure and facilitate consequence management. By communicating live readings to the SafeSite's SafeCOM Command Center via wireless communication, the SafeSite System provides superior preventative- and counter-measure solutions for homeland security.

The wide coverage afforded by the SafeSite System makes it ideal for use at major national and international events, and indeed, SafeSite Systems were employed at the 2004 Kentucky Derby, NFL games, and the 2004 Summer Olympic Games. For more information, see www.ii-vi.com.



POLICE LINE

MSA POLICE LINE

MSA POLICE LINE

MSA POLICE LINE

The portable **Sirius™ PID and Multigas Detector** provides outstanding multi-functional capabilities by integrating a high-performance PID (Photoionization Detector) in a 4-gas detector. Users can simultaneously monitor for volatile organic compounds (VOCs) with low vapor pressures while measuring for combustible, toxic, and oxygen-deficient atmospheres.

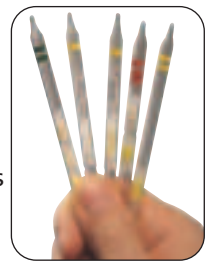
MSA's proprietary PID sensor design gives users excellent PID performance, with resistance to humidity, stable zero readings, and fast response and clear times, making this tool an asset during surveillance of clandestine drug labs.



The **Solaris™ Multigas Detector** is an affordable handheld instrument that detects the presence of O₂, H₂S, CO, and combustible gas. It withstands rough handling in harsh environments while delivering MSA's commitment to quality.



MSA's **CWA (Chemical Warfare Agent) Detector Tubes** detect a wide range of nerve, blister, blood, and choking agents. These and other Detector Tubes are quick and simple to use with MSA's pumps to detect dozens of harmful toxic substances and chemicals. The Kwik-Draw® Pump offers one-hand operation and consistent delivery of a sample draw volume of 100 ml.



MSA's handheld **HAZMATCAD™ and HAZMATCAD™ Plus Hazardous Material and Chemical Agent Detectors** are ruggedly constructed, compact, lightweight, and extremely easy to use, requiring no prior training. A single key press begins automatic sampling and analysis.

They use Surface Acoustic Wave (SAW) technology to detect and classify trace amounts of CWAs, including nerve and blister agents, with no false positives. The HAZMATCAD can also be configured to detect phosgene or hydrogen cyanide. The HAZMATCAD Plus combines SAW technology with electrochemical sensors for simultaneous detection of 6 discrete threats: nerve and blister agents, hydrogen cyanide, phosgene, hydride, and halogen gases.



MSA's **Pulsar™ Single-Gas Detector** provides maintenance-free, 24-month monitoring for detection of CO, H₂S, or O₂. With triple alarms, it can be worn on a pocket, belt, or helmet. Water- and dust-tight, it's designed to survive a 6-foot drop and meet an environmental protection rating of IP54.



Calibration kits, cylinders, accessories, and a squirt gas bump test kit can help assure you of accurate monitoring. Your MSA distributor or customer service representative will help you choose the correct equipment for your needs.



MSA PRODUCTS FOR POLICE PROTECTION

Head, Eye, Face, & Hearing Protection

ADVANCED COMBAT HELMET (ACH)

The **MSA Advanced Combat Helmet (ACH)** provides state-of-the-art ballistic and impact protection, as well as comfort for long-term use. The helmet features a low-profile design to reduce the risk of interference in target acquisition and ensure compatibility with NVGs, CBRN Gas Masks, and communications devices.

The MSA ACH was developed for the US Military Special Operations Command. The US Army was so impressed that MSA's ACH was adopted as the standard of issue for all troops deploying to the Iraq/Afghanistan Operations Theatre. It has been credited with "taking the bullet" and saving several soldiers' lives during combat. Now this same ballistic helmet, currently being used by the Special Forces and US Army, is available for use by law enforcement.

An innovative suspension system of movable visco-elastic pads, which are attached by Velcro strips to the inside of the helmet, provide customized sizing and superior comfort. The sized pads conform to the shape of your head to distribute the helmet's weight evenly and comfortably. Simply adjust and move the absorbent pads for a flexible, personalized fit.

More key features:

- Non-reflective helmet shell is made of resin-impregnated ballistic-grade Kevlar, processed to maximize the protection factors of the Kevlar. Two sizes in black or green.
- Ballistic protection exceeds the NIJ 0106.01 standard with a Level IIIa protection.
- Impact protection of less than 150 g at a speed of 3 m/s (10 fps).
- Stability comes from the combined use of adjustable helmet pads, 4-point chin strap, and comfortable, supportive neck pad. A firm yet comfortable fit, even during extreme maneuvers.
- Optional NVG support brackets attach to the ACH via mount holes.
- Accessories include goggle retainers, fragment- and bullet-proof faceshield, and helmet covers.
- The optional MICH™ Communication System offers superior communications capabilities. (See page 16 for details.)

Sgt. Colin Rich shows MSA president Bill Lambert where the bullet struck his ACH in Afghanistan.



Comfortable, lightweight, and sized **V-Gard®**

Protective Caps and Hats

consist of a polyethylene shell and suspension system for top impact protection. Dozens of accessories add protection, versatility, function, and identification. They include faceshield frames and visors, ear muffs, welding shields, helmet lights, chinstraps, winter liners, and customized logo imprinting.

Search and rescue: A special V-Gard Cap for search & rescue, with optional cap lamp bracket & cord holder.

CERT cap (Community Emergency Response Team): V-Gard Caps may be worn by all members of your team for both protection and identification.

Patriotic pride: Freedom helmets are decorated with the stars & stripes, flags, or eagles, or a simple "United We Stand" imprint.

Helmet illumination: Add a simple but intrinsically safe, non-incendive **Stealthlite™ Helmet Light**, a flashlight-type device which attaches to slotted caps via a helmet adapter.



The lightweight polypropylene **Defender®+ Faceshield Frame** for slotted caps features easy-in, easy-out visor replacement; front drop-edge splash protection; lockdown clip; unlimited lift positions; long-lasting O-ring pivot-joint design; and a snap-in ear muff option. No hardhat is required for the Defender Headgear Faceshield Frame with Sparkgard and ratchet suspension.



Visors, which should always be worn with primary eye protection, are available in various materials, such as polycarbonate, acetate, propionate, and wire screen, to shield the face from many hazards.



For exceptional brilliance, choose the state-of-the-art **Ultralight™ Cap Lamp System**. This complete, low-maintenance, high-performance personal lighting system features the brightest pre-focused spotlight available (tungsten halogen) and a long-life, low-maintenance Luminator battery and charging system.

Since 1836, MSA's **Cairns® Helmets** have been worn by generations of firefighters. Police officers may also find use for today's brimless **HP3 Commando** and full-brimmed **660C Metro modern style** fire helmets. They are NFPA-approved, durable fiberglass composite helmets whose low profile allows easy access to confined spaces. A ClearCommand® Helmet Communications System can be added for enhanced communications.



Lightweight, comfortable, stylish **Sedona™ Protective Eyewear** provides excellent side- and front-impact protection, vertical and horizontal temple adjustments, a padded brow guard, soft flexible nose pads, and optional anti-fog lens. Choose from clear, gray, or indoor/outdoor gold-tinted lenses.



Arctic™ Elite Protective Eyewear provides excellent side- and front-impact protection from impact hazards and/or flying particles, dust, sparks, and glare. This comfortable cat's-eye style offers a Tuff-Stuff™ scratch-resistant clear or gray-tinted lens.



Clearvue® 200 Goggles with fog-free lens have an integrated frame and flexible, rolled-in cushion at the temples to provide comfort without tension or pressure points.



The Apex™ 30 Muff (NRR = 30 dB) is lightweight, compact, foldable hearing protection for high noise levels.



The **Sound Blocker™ 26 Muff** (NRR = 26 dB) offers a snug, pivoting headband that easily integrates with slotted caps and faceshield frames.



FormFit™ Ear Plugs (NRR = 29 dB) are compress-and-insert disposable foam earplugs, with and without cords, packaged individually in dispenser boxes of 200 pairs.



MSA PRODUCTS FOR POLICE PROTECTION

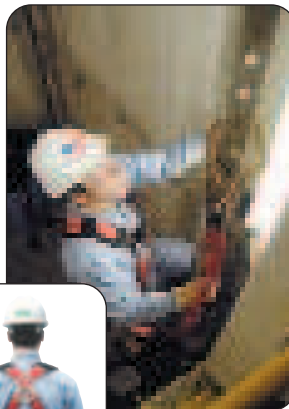
Fall Protection and Rescue Equipment

Rescue Equipment and descent devices are needed for fall arrest, work positioning, rescue retrieval, and evacuation during various response and rescue and confined space situations.

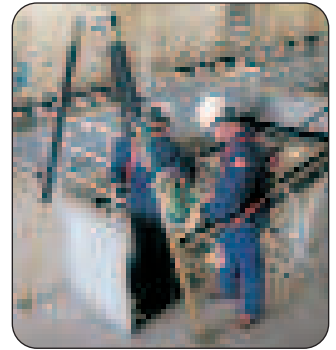
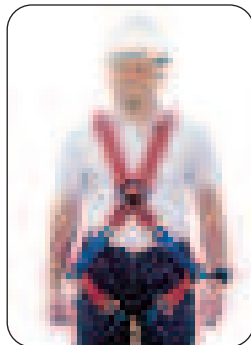
MSA's **Tactical Harness** features easy donning and doffing, snug adjustments yet great comfort, wide sub-pelvic support for comfortable suspension, tongue-buckle leg straps, and a waist-level rescue loop for controlled upright and inverted descents. The Tactical Harness is made with black webbing to decrease visibility and vinyl-coated hardware to deaden sound.



The Curvilinear Comfort System of MSA's exclusive **TechnaCurv™ Full-Body Harness** curves the webbing around the neck to prevent chafing and discomfort and allows for complete adjustment of the back D-ring for customized fit. Specially designed shoulder padding, buckles, shoulder and sub-pelvic pads, webbing, etc., combine to provide you with the most comfortable, flexible, versatile, and adjustable harness available today. Order exactly the options you want.



The multipurpose full-body **Reflective Gravity™ Cross-over Harness** allows for adjustment of both back and front D-rings. It is suitable for controlled descent, positioning, ladder-climbing, rescue, and fall arrest.



SITUATIONS & SAFETY SOLUTIONS

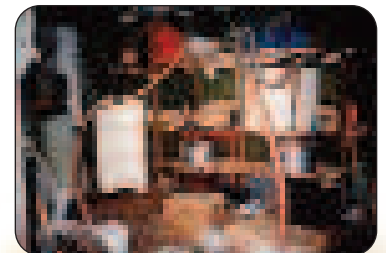


Situation or Hazard	Types of protection & equipment you'll need	Suggested MSA products
Homeland Security (WMD), terrorist attacks	CBRN detection instruments, NIOSH-approved CBRN gas mask or SCBA, Head-Eye-Face protection, Communication system, Total encapsulating suit	Millennium CBRN Gas Mask, HAZMATCAD instruments, ClearCommand HCS, ACH with MICH System
Clandestine drug labs (methylamphetamine-type)	SCBA, PAPR, Gas detector with ammonia & phosphine sensors, Communication systems, Ballistic helmet, Plus suits, boots, gloves	Sirius gas detector with ammonia & phosphine sensors OptimAir PAPRs, Advantage 1000 Respirator with GME-P100 multigas cartridge, ACH with MICH System
Civil unrest, riot control, school violence	Riot-Control Agent gas mask, Ballistic helmet, Eyewear, Hearing protection, Communication system	Millennium Gas Mask with RCA canister, Advantage 1000 RCA, Respirator, Sedona & Arctic Elite Eyewear, Sound Blocker 26 Ear Muff, ACH with MICH System
Bomb threat or response to an explosion	Specialized body protection, TIC, Communication systems, Ballistic helmet, Plus boots, gloves	Evolution 5000 TIC ACH with MICH System
Serious accidents, such as Hazmat incidents, transportation disasters, chemical plant fires, building collapses, rescue situations	SCBA, Air-purifying respirator, TIC, Communication system, Head-Eye-Face-Hearing protection, rescue equipment	Millennium CBRN Gas Mask, Advantage Respirator with GME-P100 cartridge, V-Gard Cap with faceshield, Sedona eyewear, Evolution 5000 TIC, MICH System, rescue equipment
Search & rescue or recovery Natural disasters, rescue & recovery (earthquakes, floods, tornadoes, hurricanes, etc.)	Air-purifying respirator, Air-line respirator, TIC, Low-profile fire helmet or industrial helmet, Communication system, Head-Eye-Face-Hearing protection, Fall protection, Rescue equipment	Advantage Respirator with GME-P100 cartridge, Evolution 5000 TIC, Reflective Gravity Cross-over Harness, TechnaCurv Full-Body Harness w/ shoulder D-rings, fully loaded, Suretyman Rescue Utility System, HP3 Commando & Metro 660 Cairns Helmets, MICH Comm System
Confined spaces	Instruments, Low-profile fire helmet or industrial helmet, Eyewear, ALR w egress cylinder, SCBA, TIC, Communication system, Recue equipment	HAZMATCAD & detector tubes, Evolution 5000 TIC, Sirius & Solaris instruments, Lynx™ Tripod Confined Space Entry Kit #3, Sedona eyewear, HP3 Commando & Metro 660C helmets, MICH System
Hostage incidents	TIC, Communication system, Helmet, Fall protection	Evolution 5000 TIC, ACH with MICH, Tactical Harness
Firearms training	Hearing Protection, Eyewear	Sedona, Apex 30 Muff

Drug Labs

Clandestine methamphetamine manufacture is a deadly business. This process of combining multiple chemicals creates hazardous conditions, including fire, explosions, and airborne toxic gases, besides considerable hazardous chemical waste, all of which pose a threat to both law enforcement and the public.

Some common chemicals used are: Acetone, Toluene, Methanol or Methyl Alcohol, Denatured Alcohol, Ether, Anhydrous Ammonia, Lithium, Red Phosphorous, Iodine or Iodine Crystals, Muriatic Acid, Sulfuric Acid, Lye, Hydrochloric Acid, and Hypophosphorous Acid.



SERVICES & SOLUTIONS: FROM FIT-TESTING TO TRAINING

Total Solutions On-Site & On-Line Services for: Quantitative Fit Testing, Pulmonary Function Testing, and Medical Clearance

Notes:

- All MSA products meet all applicable nationally recognized US government regulations and industry standards, such as NIOSH, OSHA, NFPA, ANSI, etc., and some Canadian and international standards.
- Most MSA PPE and instruments can be assembled to your exact needs via our ATO (Assemble-to-Order) System. Some popular configurations have assigned part numbers.
- Your MSA distributor can help you select additional appropriate gear like clothing, gloves, boots, first aid, etc., that may be necessary for your protection.
- Coming soon from MSA are more ballistic PPE and hearing protection with integrated communications systems. If you have any suggestions about how MSA can improve our products to serve you better, please let us know.

Because MSA's product and sales specialists are multi-talented, you can count on our assistance before and after you buy MSA PPE. MSA's assistance extends to additional professional providers who can help you with necessary but unfamiliar procedures.

Whenever respirators are to be worn on the job, OSHA requires that a sound respiratory protection program be followed, including certain practices to ensure that personnel are protected effectively. One of the most obvious is that each person is tested for proper fit of the respirator.

MSA's Total Solutions services will reduce your organization's concerns with logistics, consistency, time, effectiveness, and recordkeeping factors so you can meet OSHA's crucial requirements for **Quantitative Fit Testing, Pulmonary Function Testing, and Medical Clearance.**

Total Solutions services will help you comply with OSHA's respiratory protection requirements

before, during, and after the sale of MSA respiratory protection. These professional services on-line and/or at your location will make testing and training as easy, consistent, and effective as possible.

Quantitative Fit Testing

MSA can deliver mobile Quantitative Fit Testing and Medical Clearance services to test any size work force at your location quickly, accurately, and cost-effectively. You benefit from a mobile turnkey operation with trained, experienced staff. Also provided are probed test respirators & adaptors, all consumable supplies, the OSHA-mandated questionnaire, and physicians with licensure in every state in which we operate.

For high-volume onsite quantitative respirator fit testing, industry-exclusive Respiratory Compliance Manager™ (RCM) software and TSI PortaCount 8020® make testing fast and accurate. RCM records exact measurements of leakage into the breathing zone of the respi-

rator facepiece. On-line physicians certify documentation and test results in real time, usually less than 45 minutes.

Quantitative fit-testing documentation includes a wallet card with name, respirator make and model, and fit factor achieved.

Also available is training in the care and use of supplied-air and air-purifying respirators.

Pulmonary Function Testing

The service of Pulmonary Function Testing meets or exceeds OSHA requirements and provides fast, accurate testing. All technicians who perform pulmonary function testing have successfully completed a NIOSH certification course. Physicians review Pulmonary Function test results and issue Respiratory Clearance Letters immediately. All test results are kept in strict confidence.

On-Line Medical Clearance

MSA's On-Line Medical Clearance service is a web-based interactive medical clear-



ance system that saves you time and money. After log-on with an account number and password, applicants go through the OSHA questionnaire and review their answers before submitting them. After the questionnaire is complete, the system prompts passing applicants to print a clearance certificate on the spot. The system automatically refers non-passing applicants to a physician and provides OSHA-required hard copies to the sponsoring agency.

Large and somewhat dispersed organizations will find this on-line training a valuable option. With 24/7 availability, all each applicant needs is internet access and a printer to meet OSHA requirements efficiently and cost-effectively—in less than 10 minutes.

Ordering Total Solutions

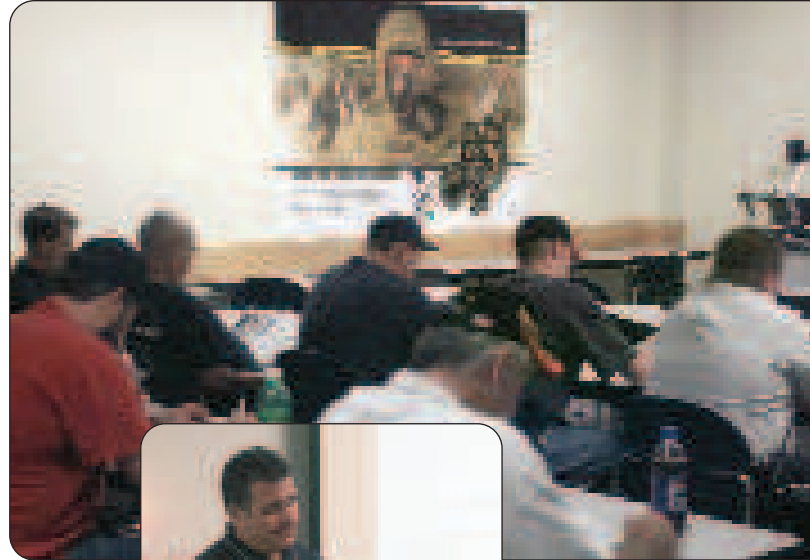
Law enforcement organizations purchasing through the GSA 1122 Program may buy these services directly from MSA. All

other agencies must purchase these services through an MSA-authorized distributor. Each service or group of services has a part number for easy ordering. Your MSA representative can demonstrate on-line services to you at no charge.

Gaining access to On-line Medical Clearance and Millennium Gas Mask Training

Because a recordkeeping function is built into the program, it is important that you obtain a log-on for your organization. After purchasing the service(s), you will receive the log-on, and your officers can gain access to those functions for which they have registered. You will also need to assign an authorized administrator to review your organization’s registrations and print out a report for your files.

Make MSA’s Total Solutions services part of your respiratory protection program. MSA plans to expand this training medium to include other MSA respiratory products in the future.



Part Number	Total Solution Service Description	Delivery of Service
10056983	QNFT (Quantitative Fit Testing)	On-site via VOHS (Vallen Occupational Health Services)
10056984	On-site Medical + PFT (Pulmonary Function Test)	On-site services via VOHS
10056985	QNFT + On-site Medical + PFT	On-site services via VOHS
10056323	On-line Medical Clearance	On-line via MSA Training on Demand website
10056324	On-line Training – Millennium® Gas Mask	On-line via MSA Training on Demand website

SERVICES & SOLUTIONS

You can count on MSA's Commercial Government Sales Team

Members of MSA's Commercial Government Sales Team are well versed in the situations you face daily and in emergencies. Many of them learned about WMD at Ground Zero, beside police officers, firefighters, and EMS teams, so you can rely on their on-site experience to help you outfit yourselves for possible terrorist incidents.



For example, many New York City first responders know Tom Jeramaz, who worked with New York City's Finest at Ground Zero for months. Steve Schmidt worked with first responders near the Pentagon. See MSA's Bulletin No. 5555-174 for more details.)

Countless knowledgeable experts from MSA, including our Federal Government experts led

by Russ Suchy, have devoted years of service to meeting the PPE needs of people like you. The product, sales, and market expertise of a legendary PPE and instrument manufacturer begins with understanding the raw materials and continues through ongoing customer communication and field testing.

Some of MSA's Finest helped fit-test and train hundreds of first responders, rescuers, and recovery workers after the events of Sept. 11, 2001. Now they help first responders like you prepare for both emergency and everyday events when you'll need PPE.

Similarly, hundreds of MSA's authorized distributors invest time in hands-on MSA training, truly understand our products, and can assist you in countless ways. Your MSA distributor may be the same distributor you already rely on to supply other products you need on the job.

For MSA's Commercial Government expert or distributor near you, please contact MSA's Customer Service Center at our special toll-free number for Law Enforcement **1-888-MSA-0018**.

REFERENCES AND ADDITIONAL INFORMATION

As you probably know, law enforcement organizations can benefit from research and guidelines prepared by numerous groups and agencies to face the extraordinary nature of terrorist attacks and other major disasters. Here are just a few that address both general procedures and specific recommendations.

Responder Knowledge Database website (Third-party verification of equipment, standards, and certifications), www.rkb.mipt.org

"*IACP Personal Protective Equipment; WMD Missions and Functions*," prepared for the International Association of Chiefs of Police, in collaboration with the Department of Justice, National Institute of Justice, Office of Science and Technology, and the New York State Police. The Center for Technology Commercialization, Inc., Public Safety Technology Center, Westborough, MA 01581. April 28, 2004.

RAND Reports on Safety Management in Disaster and Terrorism Response 1 and 3 "*Protecting Emergency Responders, Volume 3 — Safety Management in Disaster and Terrorism Response*." <http://www.rand.org/publications/MG/MG170/MG170.pdf>

Guide for Responding to Chemical Terrorist Incidents, prepared by the U.S. Army Soldier and Biological Chemical Command's Improved Response Program for the Department of Justice, Office of Justice Programs, January 2003 http://www.mipt.org/pdf/leoffice_rsguideChemicalIncidents.pdf

U.S. Army Soldier and Biological Chemical Command, (2001), *Guidelines for Use of Personal Protective Equipment by Law Enforcement Personnel During a Terrorist Chemical Agent Incident*. <http://hld.sbcom.army.mil>

U.S. Army Soldier and Biological Chemical Command, (2000), *Chemical Weapons Improved Response Program (CWIRP) Playbook*. <http://hld.sbcom.army.mil>

U.S. Army Soldier and Biological Chemical Command, (1999), *Chemical Protective Clothing for Law Enforcement Patrol Officers and Emergency Medical Services when Responding to Terrorism with Chemical Weapons*. <http://hld.sbcom.army.mil>

Director of Central Intelligence, Interagency Intelligence Committee on Terrorism, Community Counter-terrorism Board, (1998), *Chemical/Biological/Radiological Incident Handbook*. <http://fas.org/irp/threat/cbw>

National Domestic Preparedness Office, (1999), *On-Scene Commander's Guide for Responding to Biological/Chemical Threats*.

POLICE LINE MSA POLICE LINE MSA POLICE LINE MSA POLICE LINE

U.S. Department of Transportation, (2000), *Emergency Response Guidebook*.

“Safeguarding Emergency Responders During Major Disasters and Terrorist Attacks: The Need for an Integrated Approach” NIOSH and RAND report

Here are some useful web sites:

- FEMA <http://fema.gov>
- Guide for All-Hazard Emergency Operations Planning: State and Local Guide <http://www.fema.com/pte/gaheop.htm>
- Preparedness www.fema.gov/pte/prep.htm
- Emergency Managers <http://www.fema.gov/emanagers/>
- Terrorism www.fema.gov/library/terrorf.htm
- Centers for Disease Control and Prevention www.bt.cdc.gov
- American Red Cross (how to create an emergency communications plan) www.redcross.org/disasterrelief
- Disaster Relief www.disasterrelief.org

FEMA’s Guide for All-Hazard Emergency Operations Planning: State and Local Guide (101) was published in September 1996. And Chapter 6 (Attachment G—Terrorism) was added in April 2001. (See <http://www.fema.com/pte/gaheop.htm>)

Sources, resources, photo credits for this bulletin:

The U.S. Federal Emergency Management Agency (FEMA), US Customs and Border Patrol, the Drug Enforcement Agency (DEA), the Allegheny County (Pa.) Police SWAT team, several state police organizations, The Salvation Army, and the American Red Cross.

Literature from MSA

For more details about specific products, procedures, and services, you can order literature (free of charge, of course). Product training tapes are also available. Just copy this FAX-READY form at right, with your name and mailing address, so we can send it to you.

Order Literature from MSA. Copy this form, fill it out, and FAX it to MSA’s Customer Service Center at 1-412-967-3451

Literature	Order no.	Quantity
Key Elements of Respiratory Program	1000-61	
OSHA Fit Test Std	1000-49	
OSHA Respiratory Medical Form	1000-47	
First Responder Guide to WMD	5555-185	
Pre-Medical Certification Check List		
Millennium Poster (for training)	0517-05	
MSA’s Responds to Sept. 11, 2001	5555-174	
Millennium product bulletin	0517-06	
CBRN Primer (NIOSH Respiratory Protection Standards)	5555-180	
Gas Masks for Law Enforcement	5555-166	
Testing of HAZMATCAD Detectors against CWA: Summary report of SBCCOM evaluation	0815-31	
HAZMATCAD product bulletins	0815-25 0815-26	
Detector Tube Kit for CWA	0815-24	
GSA catalog for law enforcement		
Ask about CD for Advantage APR Respirator training and videotapes for training		

Send to:

Name, job

Organization

Street Address

City, state/province, zip/postal code, country

Email address (if you want MSA to send you pertinent PPE announcements)



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Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



ID 5555-229-MC /Nov. 2004
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