



International Institute of Security & Safety Management



Let's professionalize the professionals...



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The security sense is stronger in the weaker people – it has been said by the wise men! But present word exhibits that stronger the person, stronger is the desire for security. The expenses on security by cash rich companies is matter of board room debates but the need for security by the poor companies which can ill afford it has been professional debate for a long time.

Recent trend globally and more specifically in India indicates that preparing themselves for unforeseen security contingencies has eaten-up major share of corporate budget of well-to-do companies. Whereas the cash starved companies are looking at government to provide safe and secure environment conducive for their productive and profitable business activities. Though this is the sovereign responsibility, alas it has not materialized!

As a result there is boom time for economy but bloom time for security service providers. This paradoxical situation needs mid-course correction and balance needs to be maintained only when security preparedness is in commensuration with the threat perception. Let every security professional take note of this principle and their job will be treated as 'well-done'!

**Capt S B Tyagi, FISM, CSC
For NCR Chapter, IISSM**

Convergence of Physical Security & IT Security

Things are coming together as business and IT needs quickly meld with physical security's mission. For some people, it is the dreaded "C" word. It's convergence. When the concept first hit in the early 2000s, there was fear and loathing as some security leaders saw it as an attack or take-over. Today, many executives with primary responsibility for physical security see



convergence as an opportunity and a partnership in which the operation can ally with enterprise colleagues as well as bond more closely with the organization's business missions.

TERMS MAKE A DIFFERENCE

Long-time consultant John Strauchs commented that "it is unfortunate that our industry appears to have been dubbed as 'physical security' (mostly by the IT folks, I believe) so the term security isn't confused with computer security, or IT security, or network security, or even electronic security. They even co-opted 'intrusion detection.' Physical security only describes one part of our technology -- the smallest part. I would rather our industry be termed building security or perhaps facility security, but I doubt that I will get many converts to my lexicon."

Added Strauchs, "It's important that some - perhaps many -- manufacturers of security systems and equipment have not designed in comparable protection as have the manufacturers of computer and network hardware. Our security systems have been stand-alone systems for decades. Some IT managers are hostile to convergence because they see 'physical security' as a weak link. I have often heard it said that convergence is inevitable. I think that is an understatement. Convergence is here."

COMING TOGETHER

In a general way, however, most security leaders see convergence as the bringing together of physical and logical – or computer – security in ways that primarily emphasize access controls and identity management. Enterprise-impacted regulations also help push Convergence 2.0. "The convergence of physical and traditional IT systems can provide compelling security benefits for an enterprise," said Mark Diodati, identity and privacy strategies senior analyst with Burton Group, which conducted the survey for Honeywell. "Successful compliance initiatives can be enhanced when the organization adopts a holistic approach for managing access to these systems."

INTERACTION HELPS

In a recent survey most respondents indicated increased interaction between their security and IT functions:

63 percent said their security and IT organizations "had a formal coordination mechanism" **10 52 percent** noted their security functions had a formal working relationship with their audit and compliance functions, while

The majority of respondents (**nearly 73 percent**) believe vulnerabilities in either physical or IT security can lead to a breach in the other system:

91 percent of the responding companies showed an increase in security investment

"This reinforces that companies are increasingly concerned with protecting their information assets as well as their physical assets, and they recognize that integrating once-disparate systems can be effective in addressing threats," said Jim Ebzery, senior vice president of identity and security management at Novell. "How they choose to implement convergence



varies on a number of factors including internal roles and overall attitudes about its effectiveness.”

MERGING SUB-CULTURES

EMC Corporation’s Henry Hoyt, CISSP, noted that “Convergence as I have seen it variously used appears to be focused on the intransigence of merging two sub-cultures within a company or corporation and the needed transformation into one operational unit through the use of a common technology (tool kit). I think until organizational behavior (as used here -- a discipline) issues are addressed, the promise of what the technology could bring will be frustrated by two armed camps each defending their sacred ground. “I would point out those words like ‘security’ leave us with a very flat, one-dimensional view of a much richer and diverse work space. The trade-offs between alarm and protection is very different with, say, life safety versus information assurance.”

Because of numerous reasons, presidents and chief executive officers of the most influential businesses better know their security operation, its return on investment and the real need to have professional security using appropriate technology.

THE INTERNET PUSH

The Internet itself is helping to push Convergence. Strengthening the Internet’s defenses against attack and recovering quickly following a major cyber incident will require IT vendors, end-users and government to accept their shared responsibility and to work together, said Marian Hopkins, Business Roundtable policy director.

“Hardening the Internet is one of the most important security issues facing the business community,” Hopkins said. “So many of the critical systems impacting our security and our economy are being carried on a fragile cyber infrastructure, and we want to strengthen it.”

Companies have improved their cyber security, she said, but cannot stop making improvements to their systems because the threat continues to grow as well. Hopkins said that while end-users have a responsibility to keep their systems secure, CEOs also want better hardware and software that has fewer security flaws. According to Salvatore D’Agostino of IDmachines and a member of the Smart Card Alliance, Federal Information Processing Standard 201 (FIPS 201) is the basis for identity convergence. **“This means adopting public key infrastructure and digital certificates as a common basis for strong authentication across domains.**

BUSINESS CONTINUITY

Emergency and disaster response is another Convergence 2.0 driver. Converged physical security, computer security and wired and wireless communications are at the heart of such responses. Research firm Aberdeen Group has shown that through emerging capabilities in the area of security governance and risk management, best-in-class companies are taking proactive steps to ensure that their investments in security and compliance controls directly



support their objectives for the business. A consistent, enterprise-wide view of security risk – integrating both physical security and IT security – is a sensible element of this strategy. By combining superior security governance and risk management with an integrated approach to logical and physical security, best-in-class organizations set themselves up to compete in the global economy with a distinct advantage: not only with an optimized IT infrastructure, but also with better protection for their digital, physical and human assets.

INTERACTIVITY AND CONVERGENCE

Interactive services will play a role in the evolution of convergence. *The personalized solution integrates security, energy and lighting control, live video, event-driven video clips, pictures and a host of other functions.* “Interactivity will help propel the way homes and businesses are secured and managed,” said Tricia Parks, chief executive officer of Parks Associates, a market research and consulting firm focused on emerging consumer technology and services. “This trend will drive incremental growth in the industry and provide security companies a platform to offer a variety of new services in the future.” *Risk management encourages cooperation and coordination: loss prevention, fraud prevention, business continuity planning, legal/regulatory compliance, and insurance, to name a few.* Bringing together those functions in some business way is part of convergence, too. IP video also is a more recent driver of Convergence 2.0.

SIDEBAR: What’s Web 2.0?

According to the Security Executive Council Web site (www.securityexecutivecouncil.com), Web 2.0 – as embodied in sites like MySpace, YouTube, and Wikipedia -- may seem like a new technology that has exploded in the past few years. In reality it isn’t a technology revolution; it’s a revolution in the way existing technologies are used.



According to Tim O’Reilly, founder and CEO of O’Reilly Media, Inc., who is credited with coining the term Web 2.0 in 2004, Web 2.0 is a category of applications that meet the following seven criteria:

- They use the Web as a platform;
- They harness collective intelligence (they include content from users and other sites through tagging, permalinks, RSS, etc.);
- They are backed by specialized databases (such as Google’s Web crawl and Amazon’s product database);
- They are delivered as services, not products;
- They support lightweight programming models;
- They are not limited to use on a single device;
- They offer rich user experiences.

SIDEBAR: Many Employees Undermine Traditional Data Breach Prevention Strategies



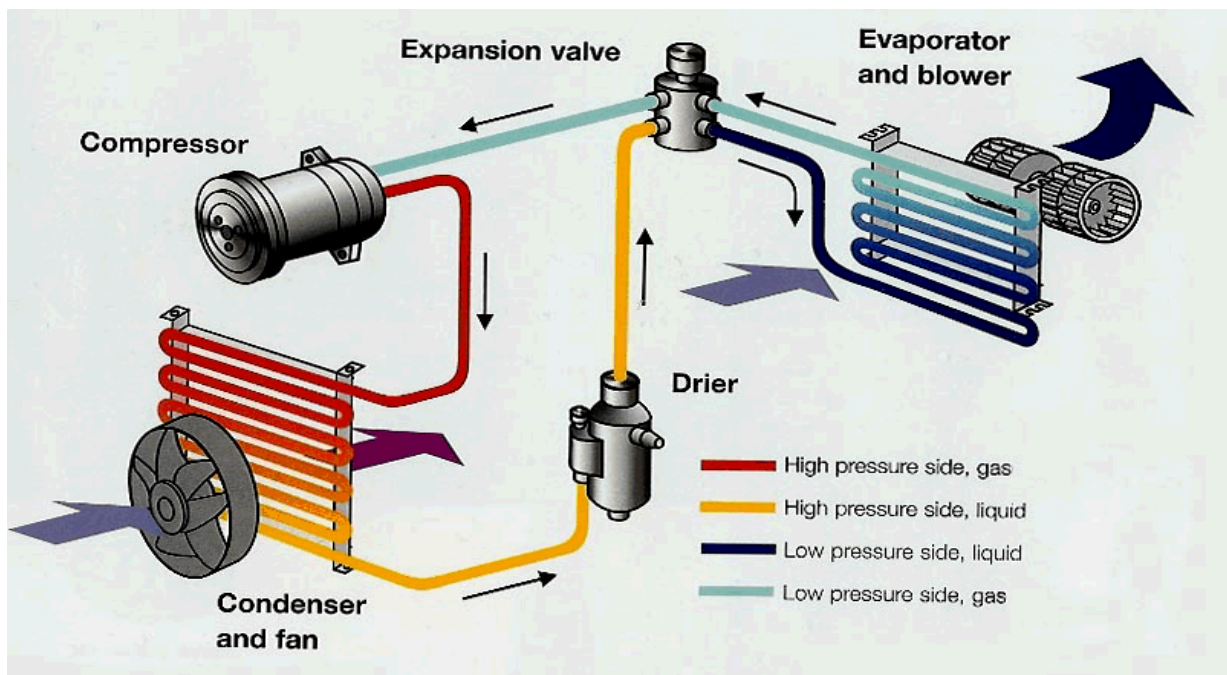
Key findings include:

92 percent of IT security practitioners report that someone in their organization has had a laptop lost or stolen and 71 percent report that it resulted in a data breach; 56 percent of business managers have disengaged their laptop's encryption; only 45 percent of IT security practitioners report that their organization was able to prove the contents of missing laptops were encrypted; Only 52 percent of business managers – employees most likely to have access to the most sensitive data (personally identifiable information and/or intellectual property) – have employer-provided encryption; 57 percent of business managers either keep a written record of their encryption password, or share it with others in case they forget it; 61 percent of business managers share their passwords, compared to only 4 percent of IT managers; and,

“The security profession can only benefit from continued collaboration and integration with other business functions and the emerging requirement of enterprise reporting. Simply put, enterprise risk management will only increase the net value of security profession.”

Do not turn on A/C immediately as soon

Compiled by: S. P. Garg, DGM (F&S) - HSE, Corporate HSE Department, GAIL

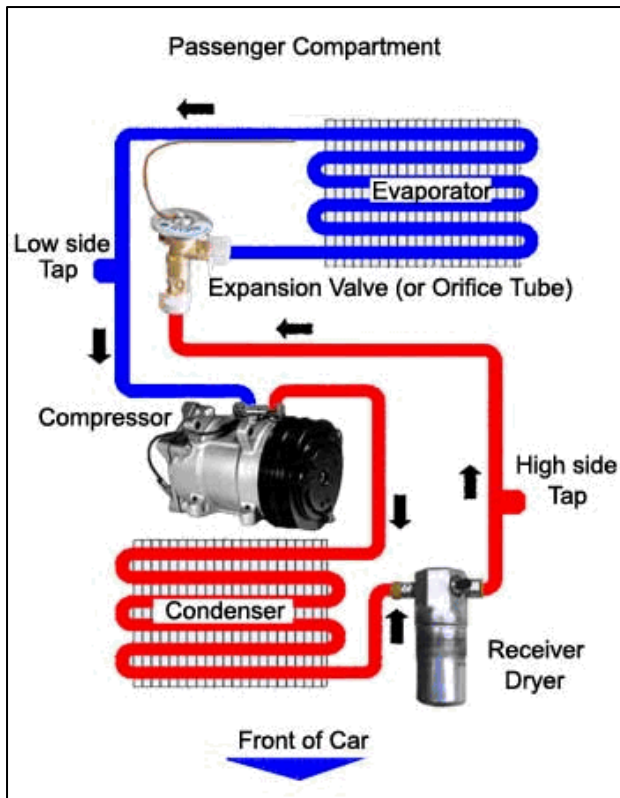


Please open the windows after you enter your car and do not turn 'On' the air-conditioning immediately.

According to a research done, the car dashboard, sofa, air freshener emits Benzene, a Cancer causing toxin (carcinogen- take note of the heated plastic smell in your car).

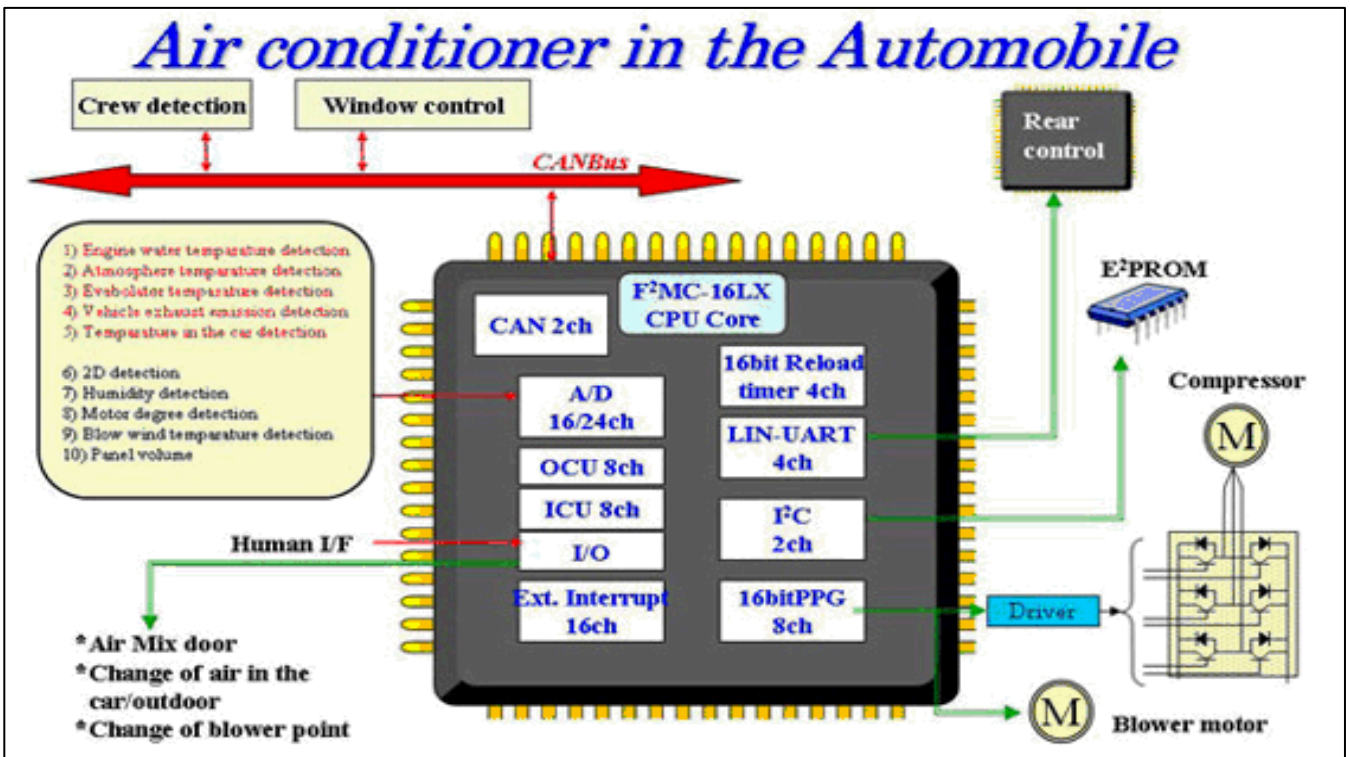


In addition to causing cancer, it poisons your bones, causes anemia, and reduces white blood cells. Prolonged exposure will cause Leukemia, increasing the risk of cancer may also cause miscarriage.



Acceptable Benzene level indoors is 50 mg per sq. ft. A car parked indoors with the windows closed will contain 400-800 mg of Benzene. If parked outdoors under the sun at a temperature above 60 degrees F, the Benzene level goes up to 2000-4000 mg, 40 times the acceptable level ... & the people inside the car will inevitably inhale an excess amount of the toxins.

It is recommended that you open the windows and door to give time for the interior to air out before you enter. Benzene is a toxin that affects your kidney and liver, and is very difficult for your body to expel this toxic stuff.





CCTV Cameras

Courtesy: Capt G. Nagaraj, CSP (Source- STAM CCTV Training)

A camera is the starting point of any CCTV system. Along with the camera, it is the lens that serves as the eyes of any CCTV system; it takes pictures on a continuous basis irrespective of the hour of the day when the surveillance is being done.

Now, let us have a look at the factors affecting lens quality and the different elements of a zoom lens.

DIFFERENT GLASS GROUPS IN A LENS: Many people are under the impression that the zoom lens consists of a single lens. This is not true. Besides glass pieces required for correcting chromatic aberration, additional glass is also required for the following purposes:

- To focus the lens on objects at different distances – When the focus moves from one object at a particular distance to another at a different distance, or when it follows a moving object, there is a repositioning of the lens elements, that is, the focal point changes and the picture thus always remain clear. On the other hand, interestingly, although the human eye faces this problem, it gets around the situation very easily by varying the thickness of the lens. Clearly, technology has to go a long way before it catches up with this technology!
- To achieve different focal lengths in a zoom lens – The glass pieces move in relation to each other so as to achieve different magnification of the object, resulting in different focal lengths in a zoom lens.

FACTORS AFFECTING THE QUALITY OF THE LENS:

During construction, the following factors will determine the quality of the lens.

1. **Number of glass pieces used:** The more the number of glass pieces combined together in a lens, the less the chromatic error and better the focusing capacity. However, when there are many glass pieces, light absorption will be greater, resulting in less light available to the camera. There is a trade off between accuracy and absorption.
2. **Absorption factor of the glass:** Glass of Poor quality will absorb more light, again making less light available to the camera. Obviously, glass with lower absorption factor will cost more.
3. **Coating and polishing:** The quality of the glass coating and polishing of the glass can improve lens quality.
4. **Mechanism:** The precision and reliability of the mechanism that moves the glass pieces within the lens are important. Poor quality mechanisms can lead to inaccurate settings that may not be consistent.



DIFFERENT ELEMENTS OF A ZOOM LENS:

1. **Zoom lens** is a lens that can be changed in focal length continuously without losing focus. Magnification of a scene can be changed with a single lens, but every time the position shifts, the lens must be refocused. If two lenses are combined, it would be possible to change the magnification without disturbing the focus. A zoom lens is made of the following groups: **Focusing lens group:** The focusing lens group brings an object into focus. It moves irrespective of the zoom ratio or the current focal length.
2. **Variator lens group:** The variator lens group changes the size or magnification of the image.
3. **Compensator lens group:** When moved in relation to the variator group, the compensator lens group corrects the shift in focus. Lens groups 1 to 3 are the core of the zoom lens, and are together called the zoom unit.
4. **Relay lens:** Since the zoom unit does not cause convergence of light, the relay lens group is placed behind it to focus the object on to the CCD chip. Zoom lens is designed in such a way that it requires extensive optical path tracing and continues self-correcting performance evaluation effort. It also involves the use of powerful computers and specialist software.

GLOSSARY

Angle of refraction: This is the angle of bending of light when it travels from one medium into another.

Angle of view: This represents the area of the scene (maximum horizontal and vertical angle) that can be seen through a lens. It is measured in degrees.

Auto iris: This is a diaphragm that is inbuilt in a lens designed to automatically control the amount of light falling on the chip. The tiny motors in the lens open or close the diaphragm, depending upon the amplitude of the video signal.

Back focus: This is a fine mechanical adjustment in the camera, which moves the CCD chip or the lens mount (depending upon camera brand) to ensure that the chip is placed at the exact focal point of the lens.

War"

The object of war is not to die for your country, but to make the other bastard die for his."



- General George Patton (1885-1945)



Searching and Examining a Major Case Crime Scene

The Initial Death Scene Examination

The crime scene examination and subsequent search should be done in a careful and methodical manner. After talking to the officer(s) who were the first ones on the scene and learning from them of any changes that might have been made to the scene since their arrival, **such as turning lights on or off or opening doors or windows, start the examination by working your way into the body using great care to avoid disturbing or destroying any evidence as you do.** Carefully observe the floor or ground surrounding the body. Pay close attention to everything as you approach the body! **Do not dismiss anything until its evidentiary value can be determined.** Has the body been moved? If so, by whom and for what reason?

Never move or alter the positioning of the body! Make close visual examinations of the body and the area immediately around it. Look between the arms and legs without moving them. Look at the arms, hands and fingers. Take careful notes of the external appearance of the body and the clothing or lack of clothing. Look at or for lividity, decomposition, direction of blood flow patterns, remember the law of gravity. Is the blood flow consistent with it? Make **detailed** notes. Describe the clothing, and especially the condition of the clothing. Do folds or rolls indicate the body had been dragged? If so in what direction?

Describe the location and appearance of wounds, bruises, etc. Make careful and detailed observations. Describe not only what you see, but also what you do not see! Forget about what you think you see! **Never Assume!** Examine the scene for the presence and absence of blood. Photograph it using a scale and always taking the pictures from a 90 degree angle. At this time, you should be making a sketch of the scene. It can be a rough, freehand sketch drawn on a blank piece of paper or in your notebook. You should include in the sketch things like the location of all doors, windows, furniture, the victim and anything else you feel it is necessary to document

Photographs

The investigator should have the photographer, if one is available, or, if not that lucky, then the investigator himself should ensure that;

- Overall photos of the scene are taken to show the approach to the area, street signs, street light locations in relation to the actual scene, street addresses and identifying objects at the scene.
- Photograph the scene in a clockwise pattern before altering the body's position or any other evidence within the scene. Photograph the scene from at least 2 opposite corners, but from all four corners is even better
- Photograph the body and the immediate vicinity around the body. Keep a photo log.



Once the photos are taken, the investigator should now make a detailed examination of the victim. Are the eyes and/or mouth open or closed, what is the color of skin, of the nails and hands or lips. The presence or absence of blood, saliva, vomit, lung purge, their direction and flow! The best idea is to begin at the head and work down to the feet. **Do not attempt to learn the victim's identity by going through the pockets of the victims clothing. Identification photos and finger and palm prints should be taken at the Medical Examiners office too.**

Notifying the Medical Examiner

The crime scene investigator, the detective or the supervisor on the scene should notify the medical examiner of the type of death case they are investigating. Since the determination of cause and manner of death often depends on the evidence recovered at the scene, the Medical Examiner may elect to respond to the scene personally or send one of his forensic investigators in his place.

Continuing the Search

Search the immediate area around the body (divide the room into a grid and work outward from the body). Have another investigator retrace your steps and recheck the grids for any missed evidence. **Remember, all scenes are three dimensional, never forget too look up too!** Do not touch areas or articles which have the possibility of being processed for latent fingerprints.

Fingerprint Evidence

Latent prints are left by the contact of the palmar surfaces of the hands and/or bare feet of a person are probably the most valuable piece of evidence at any crime scene. The term "latent" means hidden, not visible.

Visible or Patent Prints are those prints which have been made by transferring a foreign substance, such as ink, blood, grease or dust from the crests of the papillary ridges to the surface of the object touched. The most common type is the dust print.

Molded or Plastic Prints are those prints that occur when the finger touches or presses against a soft pliable surface such as putty, wax, an adhesive, grease, drying paint, blood or soap. Impressions in the skin of a deceased victim have also been observed. A negative or reversed impression of the friction ridge pattern is thereby produced as a molded or plastic print. Such a print may also be found in paint or recently painted objects or surfaces.

Latent Prints are those prints made by natural skin secretions such as perspiration, sebaceous oils and dirt being deposited on an object touched from the details in the friction ridge patterns. Latent prints are usually found on objects with smooth, polished surfaces or on paper.

Photographing Prints found at the scene should always be photographed prior to attempting to lift them. This is recommended since it is much easier to introduce print evidence into court if it has been recorded.



Prints from sources other than fingers are also obtained at crime scenes. While it is usually true that more fingerprints are obtained in investigations than prints from any other papillary skin surface, it should be mentioned that any palmar (palm, wrist) or plantar (foot, toe) skin designs can also serve to positively identify the suspect. In some cases, lip and ear prints have also been recovered.

Expanding the Search

Once the investigators have completed their examination and the body has been removed, the investigators should take time to systematically check the remainder of the house, business, vehicle or location and carefully note items of evidence or conditions which may shed any additional light on the investigation. These can include;

- Doors - are they locked or bolted (from the inside or outside), are there marks of forced entry, does the doorbell work, is there a doorknocker, are there scratches around the keyhole, etc.
- Newspapers and mail - is the mail unopened or read or not? Check the postmarks on envelopes and the dates of newspapers.
- Smells - do you or did the first responding officer notice the smell of gas, tobacco, alcohol, perfume, gun powder or anything else unusual.
- Kitchens, was food being prepared, if so, what kind (it may or may not correspond with the victims stomach contents). Is there food that was partially eaten, utensils, glasses or plates. Is the stove warm or still on? Are there signs of attempts to burn or wash away evidence. Are there signs of clean up attempts?
- Heating / Air Conditioners, what type is it, is it vented or unvented (carbon monoxide can kill). What is the thermostat setting?
- Are there signs of a party, such as empty bottles (note the labels, brands, types of liquor, etc.) are there cups, glasses and what is their contents, how many are there, is lipstick on any of them, how many places are set at the table.
- Shootings, how many bullets were fired, account for all of them if possible, find cartridge cases (number and location found) if there are any bullet holes (number and location), was the weapon left at the scene. There may be expended cartridge casings found laying on the floor, rug or on furniture. It is recommended to mark these items, after photographing them first, with numbered markers to prevent their being moved, altered or damaged. If necessary, they may be protected by placing water glasses over them.
- Presence of items that do not belong there, many suspects, in the heat of the moment, will leave items of great evidential value, don't overlook this possibility.



Personal Information

Is the victim married or in a relationship? Determine as much about the state of the marriage or relationship as possible, for example, abuse, infidelity on partner's part, drug or alcohol abuse, monetary problems. Is there a suicide note, if so does it appear genuine or staged? Process for prints, get handwriting samples from the other occupants of the location! Has the victim threatened suicide recently, has he/she been despondent, what has happened recently to prompt or preclude such actions? Check the victim's computer.

Curious Onlookers at the Scene

Many additional problems are caused by curious onlookers at the scene when a body is discovered. The major concern is, of course, to protect the scene from destruction or contamination by onlookers and curious police officers. The latter group usually presents the most problems. Police Officers are naturally curious and generally have to see things for themselves. Detailed follow-up investigations of many crimes have revealed that various items initially thought to be of great evidential value were actually left by curious police officers. **It will never be known how much valuable time has been wasted and how much evidence has been destroyed by the mere presence of policemen. Just standing around or leaning against a doorway may grind evidence into the ground or smear a good fingerprint.**

Populated areas, usually consist of streets, sidewalks, communities, etc. and requires the presence of officers to protect the scene. If not, physical barriers such as crime scene tape, vehicles or sawhorses may be needed. In some cases, a detailed search of an entire area may be necessary. This can be done most effectively by cordoning off the area and dividing it into manageable sections to be searched individually.

In Rural Settings, many problems will present themselves that are found in urban settings. These are handled in the same manner as an urban investigation. However, there can be significant differences in a rural setting, these could include, Accessibility or the lack of it. Are 4 wheel drive vehicles needed? Can it only be reached by boat or helicopter? Do you need to pack all your equipment in with you? Length of time a body has been there prior to discovery. Use care not to disturb the ground that may have footprints or tire marks imbedded in it. Employ aerial photography. It will provide information about routes or egress and exit to the area, traffic patterns and location of homes, etc. This is true in both rural and urban settings.

Evidence

As a rule, in the absence of a crime scene investigator, the removal and submission of evidence should be restricted to the lead investigator or lead uniform officer. When evidence is discovered by persons other than the investigator, these items should be, if possible, pointed out to the investigator for his collection and removal to avoid a long list of witnesses or links in the ever growing chain of custody needed for court at a later date. Remember if the scene is being worked by a crime scene investigator that is his/her scene. They are in command of the scene itself. All other law enforcement personnel present are there to assist that investigator.

