

A Guide to Understanding Risk Analysis, School Safety and Security

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*Security Solutions &
Consulting Services*

No task is more important than creating safe learning environments for our children. A safe school is in place when students can learn and teachers can teach in a warm and welcoming environment free of threats, intimidation, violence and fear. A review and assessment of the safety and security at school campuses is critical to providing a safe and effective school.

This booklet contains information on common approaches to school safety and security in today's world. It is not intended to be an absolute answer to all security concerns, but is designed to assist people outside of the security industry understand common types of systems and approaches and why they are done. It also includes informative outlines that you can use as a template to review security measures in place at your school.

INTRODUCTION

This booklet is offered by PRO-TEC America, LLC as a complimentary guide to assist school facilities understand today's approaches to create a safe school environment. It was written to broadly identify the most common practices used in today's schools to protect our children.

While this book is not the cure-all for all safety and security concerns, it is a good tool for people outside of the safety and security industry to form an understanding of what types of measures are being used in a nationwide effort to secure our schools.

At the end of this booklet, you will also find a School Assessment Questionnaire. Feel free to use it to identify where your facility may be lacking adequate safety and security measures. If you would like additional information on how we may be able to assist you and your organization with your security concerns, please contact us and forward your completed questionnaire. We will gladly review it, set up a site visit, meet with you to discuss issues of concern and assist you to increase the level of safety and security at your school.

PRO-TEC America, LLC offers security consulting services as well as electronic security solutions. For a free, no obligation, consultation to see how we may be able to help you achieve your goals, feel to contact us at 412-271-8922 or simply fax the completed form to 412-271-8969 and we will contact you.

At PRO-TEC America, we present you with honest and sound advice so that you can make informed and thoughtful decisions. We don't believe in high pressure sales tactics. We don't advertise for our business, it is strictly referral based. Our advertisements are our satisfied customers. The reason we are successful is that we provide our customers with honest assessments and cost effective solutions. In many instances, mere policy and procedural changes can eliminate the vulnerability without the costs of installing security equipment, and when we think that is the case, that is what you will hear from us.

We offer you years of experience and a wide array of solutions.

- A thorough, professional analysis
- Unique solutions that meet your needs
- **Security. Support. Service. Savings.**

Whatever your decision may be, rest assured that you will have received an honest and more thorough analysis than from just a salesman from an alarm company.

That's the PRO-TEC Advantage!

ABOUT THE CONSULTANT-

This booklet was prepared by Clyde Wilhelm, Vice President of PRO-TEC America, LLC. The information contained herein was gathered from numerous sources as well from systems we've installed and consultations we've performed.

It would be best for you to understand how and where Clyde has come to his conclusions and recommendations. When we do an assessment, we take a comprehensive look into the facility and the situations so that you can benefit from Clyde's experiences and expertise.

Here are some highlights of Clyde's work and life experiences:

- Municipal Police Officer for seven years, three of which were as a supervisor and detective.
- Corporate Loss Control Manager for a Fortune 500 Company for three years.
- Electronic Security Solutions Business for the last nine years, four of which were with the two largest security providers in the world, handling large corporate and sensitive government facilities such as the DOD/ATF/FBI/ PA Attorney General's Offices, etc.
- Founding Partner of PRO-TEC America, LLC.
- For the last three (3) years, Clyde has also been doing consulting work for the Department of Homeland Security, Federal Emergency Management Agency (FEMA) through contract with Parsons Brinkerhoff, a renowned worldwide engineering and consulting firm.
- Active volunteer firefighter for the last 24 years and have held various positions throughout, including board member and assistant fire chief.

As you can see, Clyde's experience in this industry, public safety and loss control gives him a comprehensive back round that is well suited to give you sound advice for your organization.

Should you have any questions regarding this information, feel free to contact Clyde at 412-271-8922 or his cellular at 412-448-1068. He will be happy to help you.

UNDERSTANDING RISK ANALYSIS

Security in any system should be commensurate with its risks. However, the process to determine which security controls are appropriate and cost effective, is quite often a complex and sometimes a subjective matter. One of the prime functions of security risk analysis is to put this process onto a more objective basis.

There are a number of distinct approaches to risk analysis. However, these essentially break down into two types: quantitative and qualitative.

Quantitative Risk Analysis

This approach employs two fundamental elements; the probability of an event occurring and the likely loss should it occur.

Quantitative risk analysis makes use of a single figure produced from these elements. This is called the 'Annual Loss Expectancy (ALE)' or the 'Estimated Annual Cost (EAC)'. This is calculated for an event by simply multiplying the potential loss by the probability.

It is thus theoretically possible to rank events in order of risk (ALE) and to make decisions based upon this.

The problems with this type of risk analysis are usually associated with the unreliability and inaccuracy of the data. *Probability can rarely be precise and can, in some cases, promote complacency.* In addition, controls and countermeasures often tackle a number of potential events and the events themselves are frequently interrelated.

Notwithstanding the drawbacks, a number of organizations have successfully adopted quantitative risk analysis. However, this type of analysis is not well suited for your type of facility because several of the factors generally utilized are for businesses and for-profit enterprises.

Qualitative Risk Analysis

This is by far the most widely used approach to risk analysis. Probability data is not required and only estimated potential loss is used.

Most qualitative risk analysis methodologies make use of a number of interrelated elements:

THREATS

These are things that can go wrong or that can 'attack' the facility. Examples might include fire or assault. Threats are ever present for every facility.

Therefore, a *Threat Assessment* identifies potential threats to life and property at a facility. However, this is one of the most difficult parts of a Risk Assessment because the threat can be one in a million and not seem realistic until it actually happens.

VULNERABILITIES

Vulnerabilities are also known as weaknesses. These make a facility more prone to attack by a threat or make an attack more likely to have some success or impact. For example: for fire, a vulnerability would be the presence of combustible materials near a heat source (e.g. paper stored in the boiler room); for assault, a vulnerability would be open or unlocked doors permitting unauthorized persons into the facility.

Therefore, a thorough *Vulnerability Assessment* identifies weaknesses and vulnerabilities that pose risk to an organization or facility, allowing the organization or facility to mitigate potential threats and take corrective actions before they occur.

CONTROLS

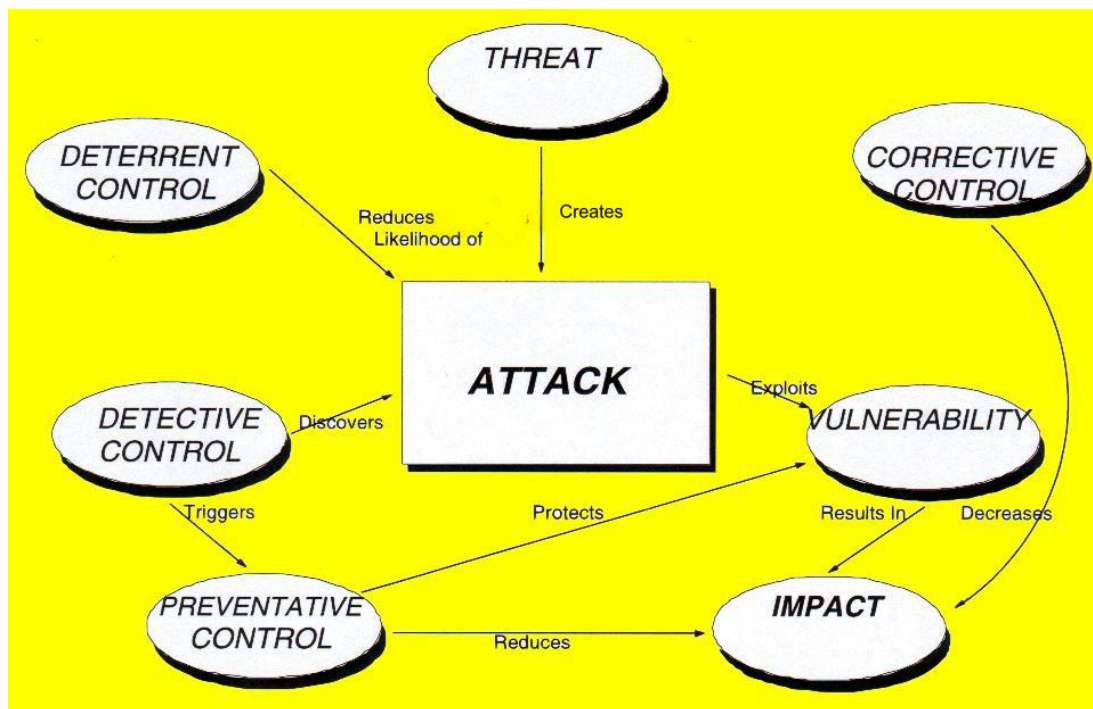
These are the countermeasures for vulnerabilities. There are four types:

- Deterrent controls reduce the likelihood of a deliberate attack
- Preventative controls protect vulnerabilities and make an attack unsuccessful or reduce its impact
- Corrective controls reduce the effect of an attack
- Detective controls discover attacks and trigger preventative or corrective controls

Therefore a *Control Assessment* is identifying what controls may be in place at a facility now. If there is a lack thereof, a recommendation of new controls will follow the initial assessment. These controls can be any variation of the following:

- Policy and procedural changes
- Electronic security devices
- Life-safety devices
- Building upgrades or changes
- Signage and traffic controls.

These elements can be illustrated by a simple relational model:



As you can see in the above model, much can be done to impact safety and loss potential when an evaluation is made utilizing the various subject headings listed and they are all inter-related on the effects of the potential loss or threat. By systematically addressing these subjects, you can significantly reduce the likelihood of the loss or threat.

RISK ANALYSIS AND SCHOOL FACILITIES

While it is acknowledged that no two schools are identical and that the design of the buildings and the lay out of the site will differ from school to school, many of the issues revolving around safety and security are generic. The following sections give you an idea of what the common template for school security looks like.

Good security management is about being proactive rather than reactive. The larger emphasis should be on prevention rather than detection. This should be borne in mind when planning your school's security.

Common safety and security concerns include:

- Personal safety of staff, pupils and visitors to school premises
- Intruders and Unauthorized Visitors on school premises
- Kidnapping / Abductions / Custody Issues
- Assault / Sexual Assault
- Fire
- Burglary and Theft
- Vandalism

School security is ever changing and needs to be kept under constant review. Vulnerable areas need to be identified and remedial actions implemented to address them. One of the main objectives of this assessment is to bring the issue of safety and security within the school environment to the forefront and allow you to understand why it is such an important task.

School Safety and Security Risk Assessment - The Approach:

Security of your school should start at the perimeter (site boundary) and then work your way in (internal security), recognizing areas of concern and identifying potential measures that could be implemented to address these. This is known as the “onion peeling approach”. The layout of this assessment follows this line.

Efficient access control measures should be prioritized for daytime security of the school and the personal safety of all users. Such control displays that of a well-managed and maintained environment in which security is a significant consideration in the day to day running of the school e.g.

- Effective signage, directional signs indicating the location of and the route visitors should follow to the school reception /office.
- One entrance to the school building via the school office/reception area
- Doors leading into the school building incorporating a suitable access control system such as a remote electronic lock or perhaps a card reader type system.

Designing out Crime and other anti-social behavior from the school environment will require a much more holistic approach, combining both physical and electronic measures.

Risk Management Team or Committee

The risks to schools are dynamic and need to be kept under constant review. A **Risk Management Team (RMT)** should be established and meet on a monthly basis to discuss safety and security issues and take the necessary steps to implement remedial actions to address any concerns. Its membership should include representatives from all levels of the school, teaching and non-teaching, as well as the site supervisor. This would provide for a balanced view from all those responsible for the secure well being of the school. Limited funding from within school budgets should be allocated, while at the same time members of the **RMT** should be tasked with identifying and applying for funding from outside agencies for school security. (*i.e. sponsorships, foundation grants, etc.*)

Safety and Security Risk Management Policy:

All schools should have appropriate security measures in place. Security is not just about choosing the right control measures; it is an attitude of mind. To ensure the support of staff, they should be involved in the planning of security measures. All school staff, teaching and non-teaching should be familiar with security procedures. Please remember, security is everyone's responsibility. Security and personal safety should be dealt with from a **Risk Management** point of view (*i.e.* taking steps to reduce the likelihood of loss or damage to the school or injury to staff and pupils). It could be included within a combined **Safety and Security Plan/Policy** for the school and be an agenda item for **School's Board and P.T.A. meetings**, even if it is not intended to discuss specific security issues.

External Environment - Recommendations

Perimeter Fencing

The main vehicular and pedestrian approaches should ideally be overlooked by the school office/reception, if not directly, by video surveillance equipment. Separate secondary entrances around the perimeter for pedestrians are commonplace, but to increase security they should be opened only at peak arrival and departure times. Appropriately worded signs should be displayed indicating opening times and directing visitors and parents to the school office at all other times. It is important that the public knows the extent of the school grounds.

Signage:

The effectiveness of your “***School Security Strategy***” can be enhanced with the prominent display of:

- Directional signs indicating the location of and the route visitors should follow to the school reception point.
- Appropriately worded warning signs regarding trespassing, the presence of an alarm system, monitored CCTV, and the fact that all property of value on the school premises is properly marked.

The implementation of such measures will have a deterrent value far outweighing the expenditure involved. The best results can be achieved by first considering the size, layout, warning message, and coloring. Optimum coloring for such signs would be red and white or similar contrasting colors.

Security Lighting:

To be fully effective, security lighting must be reliable and provide adequate levels of illumination. In addition, those areas lit must be under regular surveillance from one or more of the following, otherwise any benefits provided could be compromised

- Neighboring property or passing traffic;
- CCTV
- Random/regular security patrols.

Lighting units are prone to vandalism and will need to be suitably protected. Experience has shown that illuminated areas that do not benefit from additional perimeter protection or surveillance can, and do, become informal, floodlit play areas.

Most acts of vandalism and burglary on school sites take place out of hours and at a time when the intruder can work on effecting entry unobserved. Consequently the presence of lighting can and will deter attempts, or reduce the effect of a break-in. Lighting can assist the police in locating an intruder and, if installed correctly, assist with surveillance. Security lighting is best when it is specifically designed to address a specific task or problem.

Closed Circuit Television Systems (‘CCTV’):

A quality CCTV system can have a dramatic impact in reducing crime. This is not just restricted to off hours security but also in dealing with daytime security and issues of personal safety of pupils, staff and users of the site. An effective CCTV system is a combination of people, procedures and equipment.

In considering CCTV, it is first important to have an operational requirement and be able to specify exactly what it is you want the system to do. When looking at the cost implication and the feasibility of installing a CCTV system, it is imperative that consideration is given to the location of any surrounding lighting as this can have an adverse effect on image quality. The evidential value of a system will depend to a large extent on the attributes of the equipment initially purchased, providing that it is managed and operated in a proper manner.

Windows and External Doors:

The main entrance door to the school should incorporate some degree of access control such as a remote electronic lock release device incorporating an intercom and visual verification if this entrance is not overlooked from the office.

All windows and doors should be checked and assessed to ensure that the locking mechanisms are in working order, providing you with the appropriate level of security commensurate to all prevailing risks.

- Remedial actions should be implemented to address any identified weaknesses.
- All fire exits doors should be free of obstructions and in proper working order.
- All ground floor or other easily accessible windows should have suitable operable locks for proper security

Internal Security

School Office / Reception - Access Control:

Good access control is the matrix to the security for any school during the school day. Procedures should be in place to ensure as far as is reasonably practical, that no one is able to access the school buildings unacknowledged and that once in the building, systems are in place to protect or help pupils and staff. Access control measures include:

- One entrance to the school building via the office / reception
- Clear directional signs indicating its location to visitors
- All visitors should initially report to the school office, where the purpose of their visit can be established prior to them signing in and being issued with a visitor's badge, valid only on the day of issue.
- Visitors to the school should not be allowed to wonder about the school unaccompanied.
- Introduction of a visitors book and badge system.
- All staff and visitors to wear "ID" badges.

Individual Classroom Security

Each classroom door should have a locking mechanism, which can be locked by the teacher from the inside, to secure that individual classroom from the hallway. If windows are not made of a hard to break material such as Lexan, the inside lock should be controlled by a key and not a thumb-wheel type lock. The reason for this is in case the glass is broken, the intruder cannot simply reach in and unlock the door.

In House Communication Systems

The school should have an internal communications system. At minimum, it should be “one-way” but preferable “two-way”. A “one-way” communications system is commonly known as a Public Address System. This basically allows announcements to be made from one or more central locations to the entire facility. A “two-way” communications system may be an intercom system, a combined intercom and PA system, or be accomplished by portable 2-way radios also known as “walkie-talkies”.

It is important to have the ability to have quick communication of emergencies or other pertinent information from both the central location or from an individual classroom.

Safety and Security Plans

Each school should have established plans and contingencies in place for various types of instances, including but not limited to:

- Fire Alarms
- Bomb Threats
- Building Evacuations
- Lock Down Procedures
- Other identifiable scenarios that may affect your facility

These plans should give thorough thought to evacuations routes, alternative housing, accountability of students and faculty, etc.

Fire and Life Safety

Each school should have an automatic fire alarm system in place. This system should be comprised of the appropriate number of automatic smoke detectors, heat detectors and manual pull stations. Flammable gas detectors and carbon monoxide detectors should also be installed in areas where gas appliances are present i.e boiler/mechanical rooms, kitchens, etc. Audible and visual notification appliances should be installed throughout the facility to ensure that occupants are notified of a fire alarm activation. There should be an annunciator panel within the school office so administration can quickly identify the location of the alarm. Fire alarm systems should be remotely monitored so that they automatically notify the fire department.

Each school should have the proper number of fire extinguishers placed throughout the facility. They should be sized and located in accordance to local codes. If needed, they should be installed in cabinets to reduce the likelihood of tampering. All faculty should be trained how to properly use them.

All doors should be free of obstructions and in good working order. All doors should be able to be opened with minimum effort and equipped with panic hardware.

All emergency exits should be properly marked with appropriate signage.

Burglar Alarm / Panic Alarms

Each school should have some sort of electronic security alarm protection to detect intruders during off hours. The basic level of protection shall include monitor contacts on all of the exterior doors as well as motion detectors within the facility in common hallways or more sensitive areas.

The office should have its own controlled area and should be protected when not occupied, even when other areas of the school may be in use. This is to ensure that confidential documents and information is properly protected. A door contact and motion detector would be suitable for protecting this area.

A secure storage rooms and IT rooms are other areas that may require consideration.

Panic alarms should be installed, at minimum, in the office area. By depressing a button, it would automatically notify police via a silent alarm. Wireless button may also be employed depending on the need.