

University of Southern Mississippi
National Center for Spectator Sports Safety and Security
Security Snapshot
Security Solutions International (SSI)
Portable Vehicle Barrier (PVB)



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Foreword

The National Center for Spectator Sports Safety and Security (NCS4) at the University of Southern Mississippi has established a National Sport Security Laboratory (NSSL) dedicated to sports safety and security to assist spectator sports venue operators in assessing and validating systems and technologies for safety and security use.

The NSSL provides a mechanism to aggregate specific safety and security requirements for the spectator sports domain as developed by security and venue operator practitioners through participation in a National Advisory Board. This Advisory Board includes participation from all professional sports leagues and the collegiate institutions. The National Laboratory, using industry requirements and operational needs, develops:

- 1 Impartial, vendor agnostic, and operationally relevant assessments and validations of safety and security solutions (systems) based on the community of interest (COI) requirements.
- 2 Evaluation reports that enable venue operations and security personnel to select and procure suitable solutions; and deploy and maintain solutions effectively. In some cases process evaluations will be performed to provide newly devised procedures.

The evaluation program follows principles currently espoused by standing DHS validation programs (such as SAVER2) that are meant to assist end operators with objective and quantitative reviews of available commercial systems and solutions. Information obtained in the course of the assessment (including this report) will be made available to subscribers of NCS4 publications and to the U.S. Department of Homeland Security for their use.

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1 Introduction

Background

The NSSL's primary mission is to continually identify, evaluate and demonstrate products, systems and processes that address safety/security issues affecting sport venues and other events of mass gathering. The evaluation process is primarily composed of two avenues that allow solution providers to demonstrate their products/processes to the market place.

The first evaluation method is the full-scale lab evaluation that contains established criteria with executable requirements along with a panel of subject matter experts serving as evaluators. Solutions are scored quantitatively and qualitatively with respect to their performance versus the vendor claimed functionalities.

The second type of evaluation is the "Snapshot" which is available when the solution provider either chooses not to conduct a full-scale evaluation or when circumstances do not allow for an in-depth evaluation.

Concerning this specific Snapshot, Security Solutions International (SSI) presented a solution, the portable vehicle (PVB). The manufacturer, SSI, wanted to have the deployment of this product evaluated and demonstrated in a sporting environment. Therefore, the PVB was assembled and deployed by campus police at a sport facility for game day use. The following report documents this product deployment and demonstration.

Access Control and the PVB

The NSSL and its Lab Advisory Council continually survey the sport venue community and along with NCS4 research, safety/security issues are prioritized and categorized by type. Of the priorities of interest, access control continues to be of major concern to venue operators. With the growing popularity of pre and post-event gatherings, such as tailgating, the need for access control has expanded beyond the entry portals of a venue. Protection for perimeter areas and associated parking lots, roadways and connecting points are growing areas of concern to security personnel.

The PVB is claimed by SSI to be an easily deployable portable vehicle barrier that can be set up to block a roadway in minutes. The PVB has been specially designed for armed forces, counter terror units, and police. According to SSI, the PVB is currently in use by

sport venue security divisions, special forces, police units in high threat areas and VIP protection units. The intent of the PVB's design is to physically stop suicide vehicles trucks, motorcycles and ATV's.

In a world of rapidly evolving technology, the PVB offers an option that requires no electronics or power source, operates in virtually any weather conditions and can be moved about with limited manpower.

The following sections will describe the NSSL's demonstration and use of the PVB at a university sport venue.

2 Objectives

The main objective of this Snapshot is to demonstrate the use of SSI's PVB as an access control solution in the context of a sporting environment. This demonstration is based upon assembly, deployment and mobility as a roadway barrier and traffic (vehicle and pedestrian) management tool. Do to the nature of the product, the effectiveness of the PVB in actually stopping a vehicle or other moving threat is not part of this demonstration. The reader of this report is encouraged to consult the manufacturer, SSI, for detailed information regarding operational characteristics, stopping distances, and recommended barrier settings and configurations. It is also important to note that the intent of this report is not for comparison purposes with other similar vendor products.

The specific vendor claimed features of the PVB that are considered within this Snapshot are listed below:

- No assembly tools required
- Quick assembly for immediate threats
- Flexible length for various roadway widths or vehicle sizes
- Easy and efficient storage with foldable units
- Light to carry by hand
- No maintenance

Each of the claims above are evaluated during the assembly and deployment of the PVB. These claims are addressed in the Evaluation section that follows the Assembly and Deployment section.

3 Assembly and Deployment

Overview

The PVB components were shipped to the USM campus, assembled and deployed at the University of Southern Mississippi's baseball facility, Pete Taylor Park. The unit was in use for a series of baseball games, and the following paragraphs describe the location, assembly and deployment of the PVB.

To coincide with the Snapshot demonstration in a spring sports setting, the university police department along with NCS4 staff and SSI management decided upon the Pete Taylor Park as the location for the PVB Snapshot. A roadway connects the parking lot of the ball park with an off-campus organization. This road was found to be a good candidate for the deployment and use of the PVB. This roadway measures approximately 23 feet in width and is composed of an asphalt surface.

Assembly

A total of nine PVB sections were assembled for this demonstration. Assembly is accomplished by connecting consecutive units with the attached pin/slot combinations. Each section weighs approximately 70 lbs., therefore a team of three persons worked together to assemble the complete PVB configuration. This included eight wheel segments with handles on each end that engaged the wheels onto the ground surface. This allowed for ease of movement of the fully assembled unit. When fully assembled, the test unit spanned approximately 15'6". The roadway covered by this unit was approximately 23' wide. The total time required to complete the assembly process was approximately 30 minutes. It is important to note that this was the first time the team members had performed this assembly. Therefore, experience and repetition with the units should bring this assembly time down. Also note that the assembly time will also be a factor of the number of sections to be connected.

Deployment

After the PVB was fully assembled, the unit was rolled into place approximately 3 hours prior to the start of the game. See Picture 1 below. The unit is easily moved by using the handles on each end. These handles engage the wheels onto the ground lifting up the unit. The unit can then be easily pushed into place. It is important to note that the wheels are optional components. PVB's can be procured with or without the wheel assembly. Once deployed, the unit serves as a barrier to vehicles as well as pedestrians. The PVB can be enhanced by aligning traditional pedestrian style barricades to extend the control of pedestrian traffic. Picture 2 shows the PVB deployed with the baseball park and parking lot in the background. Picture 3 shows the deployed PVB from the direction of a potential moving threat.



Picture 1- PVB being deployed.



Picture 2- PVB deployed and ready for game day.



Picture 3- PVB view from the direction of a threat entrance.

4 Evaluation

The vendor claimed features of the PVB, identified in section 2, were documented during the assembly and deployment of the unit. The following is a breakdown of the evaluations of the vendor claimed features of the PVB.

No assembly tools required- The sections do not require any tools for assembly. However, personnel involved in the assembly process found a flat-head screwdriver and a small hammer to be helpful in streamlining the process. The screwdriver was helpful in securing the clips around the pins that secured the connection points. The hammer was used to gently tap the wheel axles to align with the pin holes at each section connector point. It was noted that the installation could have been performed without these tools, however, they made the process faster and easier.

Quick assembly for immediate threats- Complete assembly of nine sections and eight wheels and end handles took approximately 30 minutes. Considering this was the first attempt by those performing the assembly, the team thought this to be an accurate claim. Experience and repetition with the PVB should decrease the assembly times going forward.

Flexible length for various roadway widths or vehicle sizes- The design of each section allows for the addition of as many consecutive lengths of sections as needed. For smaller applications, sections can also be easily disconnected to accommodate virtually any span.

Easy and efficient storage with foldable units- Each section is collapsible and can be carried as a single unit. Each folded section is slightly less than 4 feet in lengths. At a weight of nearly 70 lbs., each section is best carried safely by two persons. The area required for storage is dependent upon the number of sections to be stored.

Light to carry by hand- Although the PVB sections can be carried by an individual, it is recommended they be carried by teams of two persons.

No maintenance- The units do not require any type of routine maintenance. However, they should be stored in a dry location when not in use. These units are susceptible to deterioration from constant weather exposure such as paint fading and rusting.

5 Evaluator Comments

The paragraphs below contain the overall comments and thoughts about the PVB, its installation, and deployment.

Overall Comments

The PVB was found to be a quick and effective way to provide enhanced access control to a roadway. The design of the system is an excellent use of physics to cause a threat (such as a vehicle-borne IED) to be stopped by its own speed and weight.

The fact that this product requires no power source, other than the manpower to assemble and deploy, makes it a viable option for virtually any location required. With a small team, the system can be assembled, deployed, disassembled and moved again easily and in a timely manner.

For this installation (nine sections and eight wheels), the team was composed of three people. The optional wheel assembly allowed for easy movement of the system. This was considered to be a very valuable feature since the complete system is rather heavy. With the wheels engaged, the team of three could easily move the unit.

Even though the PVB was used at the baseball park, a specific location and use for the unit was found to be at the football stadium. The geometry of the stadium has resulted in a road leading from a main thoroughway under and through the entire east side of the stadium. This open roadway presents a glaring vulnerability to vehicle-borne IED's and other types of moving threats. For upcoming events, the PVB will be deployed across this roadway to thwart potential threats that could be generated via this road.

The PVB brings an added element of safety and security to the campus environment. It also acts as a force multiplier serving as a deterrent, traffic management tool, and security barrier without the need for human operation. This allows for human resources to be deployed in other pressing areas.

“The PVB allows for quick response to areas of need with respect to traffic and potential threats. I was impressed with how easy it was to assemble, and I especially like the wheels on this unit. They allow us to easily move the unit after its been assembled.”- Bob Hopkins, Chief of Police, University of Southern Mississippi.

“Portability was a big factor in our decision to use the PVB's. Ease of movement and the ability to rapidly change configurations to match various roadway widths is a great feature. We also found them to be easy to set up and take down.” – Richard Mormon, Deputy Chief of Police, The Ohio State University.

6 Summary

Overall, the PVB measured up well against the vendor claimed features that could be evaluated and demonstrated in a non-destructive environment. It is important to note that this product was not tested for performance or comparison against anti-crash ratings such as standards from the U. S. Department of State (DoS) or American Society for Testing and Materials (ASTM). Please refer to the manufacturer, Security Solutions International (SSI), for additional product performance information.

As shown from the evaluation and comments sections, the PVB appears to have a useful purpose for sports venues as well as campus environments. The ease of deployment and exemption from needing an outside power source make the PVB an attractive option for quick and efficient threat protection and traffic management.

It is recommended that those interested in the PVB consult the manufacturer for further details and specifications on this product. The manufacturer contact information is listed below.

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