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# **CARVER+Shock Vulnerability Assessment Tool**

**A Six Step Approach to Conducting Security Vulnerability Assessments on Critical Infrastructure**

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## **Introduction by the Authors:**

This book is **not** about CARVER – it is about Security Vulnerability Assessments (SVA) on critical infrastructure. We use CARVER as the logical starting point. It has served as the standard for SVA for years. Just as with any process, we learn. We learn from mistakes, attacks (unfortunately) and combined experience of the experts who use, apply and adapt RVA methodologies to meet the exigencies of their assigned assessment.

The goal of this book is to provide the security reader with background on CARVER, one of its very successful morphs into CARVER + Shock and then demonstrate how these methodologies can be applied and adapted to the reader's needs.

We provide a six-step process that can be applied by an experienced security expert or a novice involved with their first assessment. At each stage of the assessment, the reader is provided with checklists, best practices, and useful scenarios that will instruct on readiness to proceed to the next step. At the completion of the checklists and steps the security practitioner will have a best practice risk vulnerability assessment in place.

## 1. Introduction and History of CARVER.

### Objectives of this handbook

To familiarize Risk Managers with the Risk-based Decision Making Model and enable them to analyze the effects of consequence, threat, and vulnerability when planning for, executing and recovering from a security incident.

### To learn how to:

- Plan, Prepare, Conduct, and Report a Vulnerability Assessment
- Employ the principles of the CARVER Methodology
- Use the results of a VA to develop Countermeasures

### CARVER as an Offensive Targeting Tool used by U.S. Special Forces

#### What is CARVER

- Offensive Target Analysis Tool
- Used by Army Special Forces for mission planning
- Based on a Commander's requirement/objective
- Identifies the critical component of an asset that meets that requirement
  - Criticality
  - Accessibility
  - Recuperability
  - Vulnerability
  - Effect
  - Recognizability

How does a small group of men disable a national level critical infrastructure?

During DESERT STORM, U.S. Special Operations Forces were tasked to disable the Iraqi Air Defense System. To do this, they applied the factors of CARVER to break this large system into smaller pieces and eventually identified small buried communications bunkers, which they destroyed before the air war commenced. These small, surgical strikes disabled the entire system as it prevented radar sites from directing fire from missile batteries at the oncoming aircraft.

## **Historical use of CARVER+Shock**

Food safety concerns used to focus solely on accidental contamination. But in recent years, there has been concern that terrorists could intentionally introduce biological, chemical, or radiological agents into the U.S. food supply. A Security Vulnerability Assessment tool called CARVER + Shock helps food processors protect their products from deliberate contamination. CARVER was originally developed by the U.S. military to identify areas within critical or military infrastructure that may be vulnerable to an attack by U.S. Special Forces. The FDA and the U.S. Department of Agriculture adapted it for the food and agriculture sector. "This approach allows food companies to analyze and identify critical areas that are the most likely targets of an attack," said Donald Kautter, Jr., Acting Supervisor of the Food Defense Oversight Team in FDA's Center for Food Safety and Applied Nutrition. FDA and other agencies have used the method to evaluate potential vulnerabilities in the supply chains of different foods and food processes.

## **About the authors:**

### **Edward Clark**

Edward Clark is a Premier Instructor with Government Training Inc. In this capacity, Edward has demonstrated consistent excellence in training based on student evaluations of his...

- Knowledge of the Subject
- Ability to instruct – Quality of instruction
- Ability to maintain student interest
- Responsiveness to student inquiries

Mr. Clark is the Senior Consulting Executive for Government Training Inc. He also serves as president of Executive Interface, LLC, a firm specializing in risk management and security training and operations.

Mr. Clark offers 24 years of experience as a Special Forces Officer (Green Beret) to include commanding an unprecedented four operational detachments. Mr. Clark has 15 years of operational experience in combat and security assistance missions throughout the Middle East and Africa. He also brings over 25 years of formal training as an instructor, training developer and training manager to the project.

Mr. Clark has just completed a major threat/risk assessment for a major US port.

After 9/11 Mr. Clark was actively recruited to serve as the Director of the Homeland Security Threats Office. It was this assignment that drove him to reverse engineer the CARVER targeting tool to conduct vulnerability assessments on Nuclear Power Plants, Food and Agriculture commodities, and other national assets to include the Ground Based Mid Range Missile Defense System.

The Department of Homeland Security (US Coast Guard) reached out to Mr. Clark to serve as their senior security consultant to assist them in evaluating over 4,000 facility security and emergency response plans as they implemented the Maritime Transportation Security Act of 2002 (MTSA 2002). In addition to his serving as the Lead Consultant to the White House Homeland Security Council's Bio-terrorism Team, he also applied his cutting edge techniques in developing US Northern

Commands Red Team Program and developing a comprehensive security plan for a \$4 billion natural gas project in war-torn Nigeria.

In support of DHS' current trend to manage risk at a strategic level, Ed has project managed the development of a strategic risk management and trade resumption plan for one of the Nation's largest Port Areas.

Mr. Clark possesses a BA in Criminal Justice, a Masters Degree in Computer Information Systems, is an expert in information security, and is a graduate of the following ICS courses: 100, 200, 300, 400, 700 and 800. Mr. Clark is a master trainer and has managed the business of training for both public and private entities.

He is also a graduate of the US Army Senior Leaders Course on Chemical Biological Radiological, Nuclear and Explosive Attacks and a member of ASIS International.

### **Don Philpott**

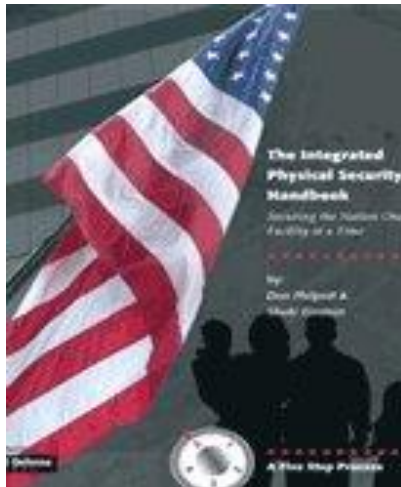
**Don Philpott** is Senior Managing Editor for Government Training Inc and also serves as editor of International Homeland Security Journal. He has been writing, reporting and broadcasting on international events, trouble spots and major news stories for almost 40 years. For 20 years he was a senior correspondent with Press Association -Reuters, the wire service, and traveled the world on assignments including Northern Ireland, Lebanon, Israel, South Africa and Asia.

He writes for magazines and newspapers in the United States and Europe and is a regularly contributor to radio and television programs on security and other issues. He is the author of more than 80 books on a wide range of subjects and has had more than 5,000 articles printed in publications around the world. His most recent books are "Terror - Is America Safe?", The Wounded Warrior Handbook, Securing our Schools, The Integrated Physical Security Handbook, First and Second Editions, Workplace Violence Prevention and the Education Facility Security Handbook. He has written special reports on "Protecting the Athens Olympics", "The Threat from Dirty Bombs", "Anti-Terrorism Measures in the UK", "Nanotechnology and the U.S. Military" and "The Global Impact of the London Bombings."

Born in the UK he is now an American citizen working out of Orlando, Florida.

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## Additional Security Handbooks Available from Government Training



**The Integrated Physical Security Handbook**



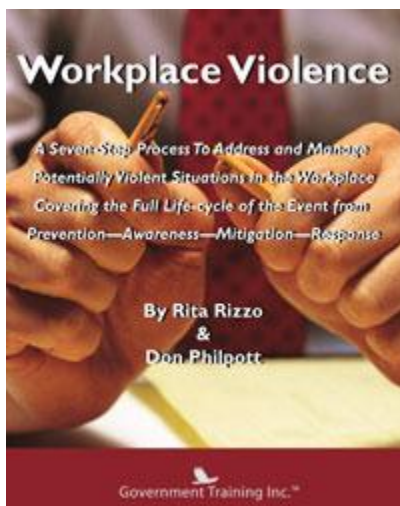
**The Integrated Physical Security Handbook, 2<sup>nd</sup> Edition**

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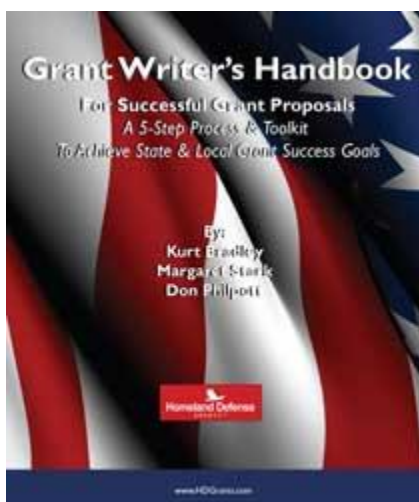




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