

IN A RURAL ISLAND COMMUNITY ON THE OUTER BANKS OF NORTH CAROLINA; CONTINUED RESEARCH REVEALS IMPLICATIONS FOR NATIONAL SECURITY POLICY DEVELOPMENT AND COUNTER-TERRORISM EFFORTS

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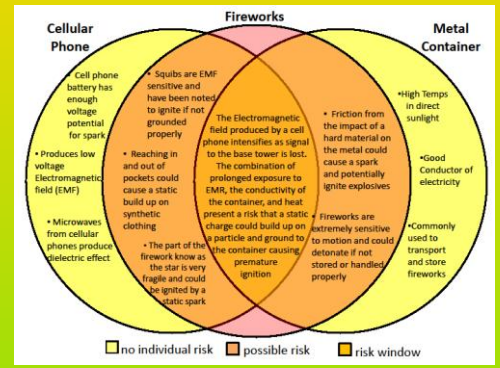
ABSTRACT

Shortly after 9:00 a.m. on Saturday, July 4th, 2009, tragedy struck a small town on the southern tip of Ocracoke Island on the Outer Banks of North Carolina. On the campus of the North Carolina Center for the Advancement of Teaching, located adjacent to the Ocracoke ferry dock servicing the North Carolina State Ferry system, a truck carrying fireworks for the annual Fourth of July display, which had disembarked a ferry from Hatteras a day prior, exploded. As a result of the explosion, four people were killed, and one person was severely burnt. A full scale emergency response operation was initiated by an entirely volunteer response unit. Within minutes, the entire community was engulfed in response efforts. All ferry and recreational boating traffic was shut down, the one road on the Island was closed except for emergency response vehicles, and air space travel was restricted to providing airlifts of the injured to trauma centers. As the injured were cared for and clean up began community members started to deal with the effects of the trauma experienced by their community. This study begins nine months after the incident and explores how the community Has recovered from this horrific incident. Results from this study can be valuable to assist other communities, both large and small, urban and rural, in their prevention and response efforts.

INTRODUCTION TO CHALLENGE
July 4th, 2009 fireworks explosion rattles small community on Outer Banks, North Carolina. Initial data analysis of community response indicated need for explosion dynamics research. Additional field studies took team across USA. A surprising discovery lead to safety and anti-terrorism national policy change consideration.

TABLE 1	Ocracoke, NC	Coeur D'Alene	NYCTimes Square
HIGH TEMP, LOW HUMIDITY	PRESENT	PRESENT	INSUFFICIENT
METAL CONTAINER	PRESENT	PRESENT	PRESENT
M-80 LIKE FIREWORKS	PRESENT	PRESENT	PRESENT
MOBILE PHONE HIGH FREQUENCY TRANSMISSION	PRESENT	PRESENT	PRESENT
STATIC ELECTRICITY BUILDUP	PRESENT	PRESENT	INSUFFICIENT
END RESULTS	EXPLOSION	EXPLOSION	NO EXPLOSION

TABLE 1. Risk Related Variable Determination Table



MODEL 1: Explosive Risk Window Model, © Gabriel Cruz, ARIES 2010

Progress

...and the gears began to turn...



- Initial Measurable Objectives:**
- Determine Community resilience
 - Identify causative factors
- Revised Measurable Objectives:**
- Identify correlations between three events
 - Determine risk related variables



SUMMARY AND CONCLUSION STATEMENT:

- * Team identified variables (connected the dots) of the three explosive events; NC, ID, NYC
- * Risks of inadvertent explosions are enhanced by storing fireworks in metal containers in certain environments
- * Terrorists can utilize risk opportunity window
- * Counter terrorism; thwarting potential attack utilizing STAHSAFEME[®] prototype.
- see Future Work and Recommendations.
- * Counter-terrorism efforts and national safety policy can be effectively utilized to decrease risk of explosive events

STAHSAFEME[®] 2010
Kyle N Horne and Dr. Lloyd Mitchell



FUTURE WORK AND RECOMMENDATIONS:

Inadvertent Explosions Prevention	Counter-Terrorism Efforts
Modify the wick and / or squib to diffuse or redirect static electricity	
Introduce use and regulations of combustible non-conductivity layer of material covering fireworks	
Enhanced regulation of illegal fireworks sales ; primarily those on Indian Reservations	
Mandate metal fireworks storage containers have STAHSAFEME (Static and Humidity SAFETY Meter for Explosives) device installed	STAHSAFEME Anywhere Portable Unit for Government use on any containers with unknown contents
Regulations requiring ionizers for static elimination in metal storage containers holding fireworks	Mandate authorities to possess static electricity control blow off guns; cost effective
regulate grounded conductor mats to be placed under stored fireworks	
Mandate storage of fireworks in Anti-static particulate matter infused wax paper	
Regulations prohibiting both mobile phones and mobile phone use within metal container where fireworks are being stored	
Regulations prohibiting mobile phones within a radius (to be determined) where fireworks are being stored in a metal container	

TABLE 2. Future Work and Recommendations; Inadvertent Explosion Prevention and Counter-Terrorism Efforts

SHARE CRITICAL RISK DATA WITH COMMUNITIES & GOVERNMENTS

- * Create Public Service Announcements
- * HYKION
- * Create Collaborative Training Videos
- * Coordinate with Non Profit Organizations
- * Together AGT Now



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