



Crisis Management for Global Security Operation Centers: Technology and Human Factors

| 10/26/2017

Agenda

The New Employee Safety Approach

- + Understanding human behavior in crisis conditions
- + Recognizing and preventing task saturation
- + Adjusting the operational tempo to maximize effectiveness
- + Proactive approaches to reducing person-role conflict and other sources of stress
- + Strategies for training, exercising and maintaining GSOC personnel and operations
- + Proactive approaches to operational stress control to ensure success in crisis response.
- + Audience Q&A



Speakers



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Principal,
Behavioral Science Applications



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Chief Technology Officer,
Everbridge

Crisis Management for GSOCs: *Technology & Human Factors*



Operational Stress Control & Performance Under Pressure

Presented by

BEHAVIORAL SCIENCE APPLICATIONS

Corporate | Campus | Community Crisis Intervention

About the Presenter

- Steven M. Crimando, MA, BCETS, CHS-V
 - Principal, Behavioral Science Applications

- Academic
 - Board Certified Expert in Traumatic Stress
 - Certified Trauma Specialist
 - Expert to the media and courts

- Responder
 - '93 & 9/11 WTC attacks
 - Anthrax Screening Center
 - TWA Flight 800
 - Unabomber victims, international kidnappings
 - Major hurricanes, wildfire, tornadoes

- Consultant/Trainer
 - U.S. Department of Justice-FBI & OVC
 - U.S. Department of Homeland Security
 - U.S. Public Health Service
 - U.N. Emergency Preparedness & Support Team
 - Major City Police Departments



Diplomate, American Academy
of Experts in Traumatic Stress



Diplomate, American Board for
Certification in Homeland Security



Diplomate, National Center
for Crisis Management

Operational Psychology

The use of clinical, cognitive and social psychological concepts for their tactical [operational] value.

“...a unique set of applied psychology theories and techniques for consultation with security professionals.”



Palarea, R (2007). “Operational Psychology: An Emerging Discipline.”

Understanding Human Behavior

Lewin's Equation

$$B = f(P, E)$$

Behavior is a Function
of Person and Environment

The Environment

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The GSOC Environment [1]

- The GSOC is a 24 x 7 hub for critical incident management, threat awareness and situational intelligence.
- The operational tempo in the GSOC can be fast-paced.
- Multiple streams of information, data analytics, mapping, and real-time human intelligence from the field creating a stressful and complex environment.
- High-stakes decisions must be made to ensure the organization's mission success.
- It is important for leaders to appreciate the human element, as well as the technological element in assessing and mitigating risks.

The GSOC Environment [2]

- To achieve the necessary effectiveness with efficiency, the GSOC relies on an intricate choreography between human and technological assets.
- Both must be operating at peak performance under the stress of potentially multiple and simultaneous crisis events.



Requirements for GSOC Operators

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- Handle the pressure of working with a high volume of information
- Remain flexible in an ever changing environment
- Adapt well to different situations
- Multi task, and prioritizing tasks well
- Tolerate ambiguity
- Quickly analyze problems, identify causes, and implement solutions
- Stay calm, handle high pressure situations, and make sound decisions
- Work independently while also being a team player
- Identify critical issues quickly and accurately
- Pay attention to details

Hybrid Targeted Attacks [1]

- A major financial services firm is simultaneously experiencing violent street protests targeting their offices in several cities worldwide...



- while a hacktivist group coordinates the launch of a highly disruptive DDoS attack bringing down the firm's client-facing web portals.

Hybrid Targeted Attacks [2]

- What is the stress level in the GSOC?
- How is it affecting performance of Operators?
- Do leaders have a Duty of Care for the psychological wellness of Operators?
- How do leaders mitigate the effects of stress in the interest of mission success and employee wellness?



Empirical Evidence

- Meta-analysis of research addressing the relationship between stress and performance provides solid empirical evidence that should inform all aspects of GSOC operations.
- *“Elevated stress levels can impede performance on tasks that require divided attention, working memory, retrieval of information from memory, and decision making.”*
- All of the identified areas of impact by stress are essential to effective performance during the response to crisis situations.
- Unlike the technological element, the human element is susceptible to the effects of stress.

LeBlanc, V.R. (2009). The effects of acute stress on performance: implications for health professions education. Acad Med. 2009 Oct;84 (10 Suppl):S25-33.

Duty of Care

- Beyond addressing the impact of stress on operations, employers also have a Duty of Care for their employees.
- The adverse physical and psychological effects of stress in the GSOC are a foreseeable hazard that must be considered.
- Such stress can result in both short- and long-term negative consequences for the employer and employee, and raise legal, as well as operational risks.

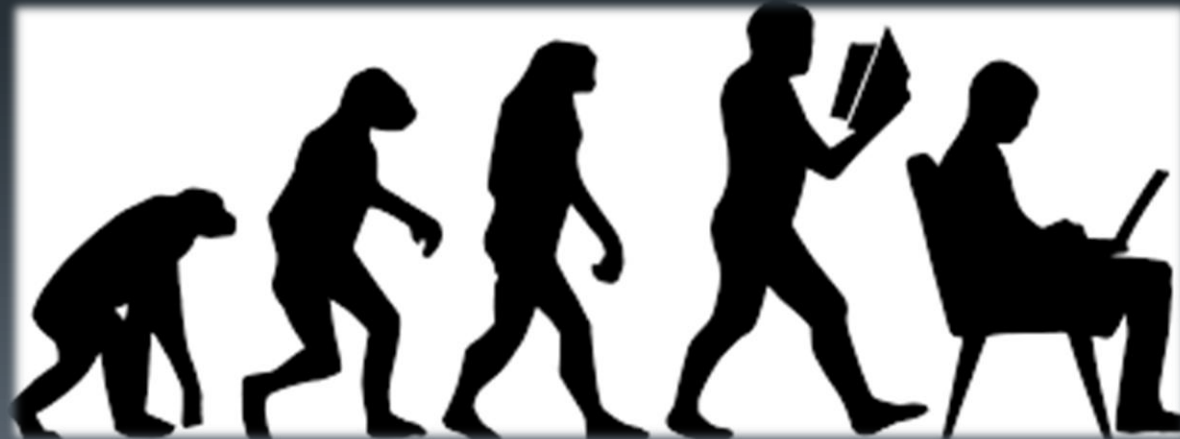


The Person



The Neuroscience of Stress

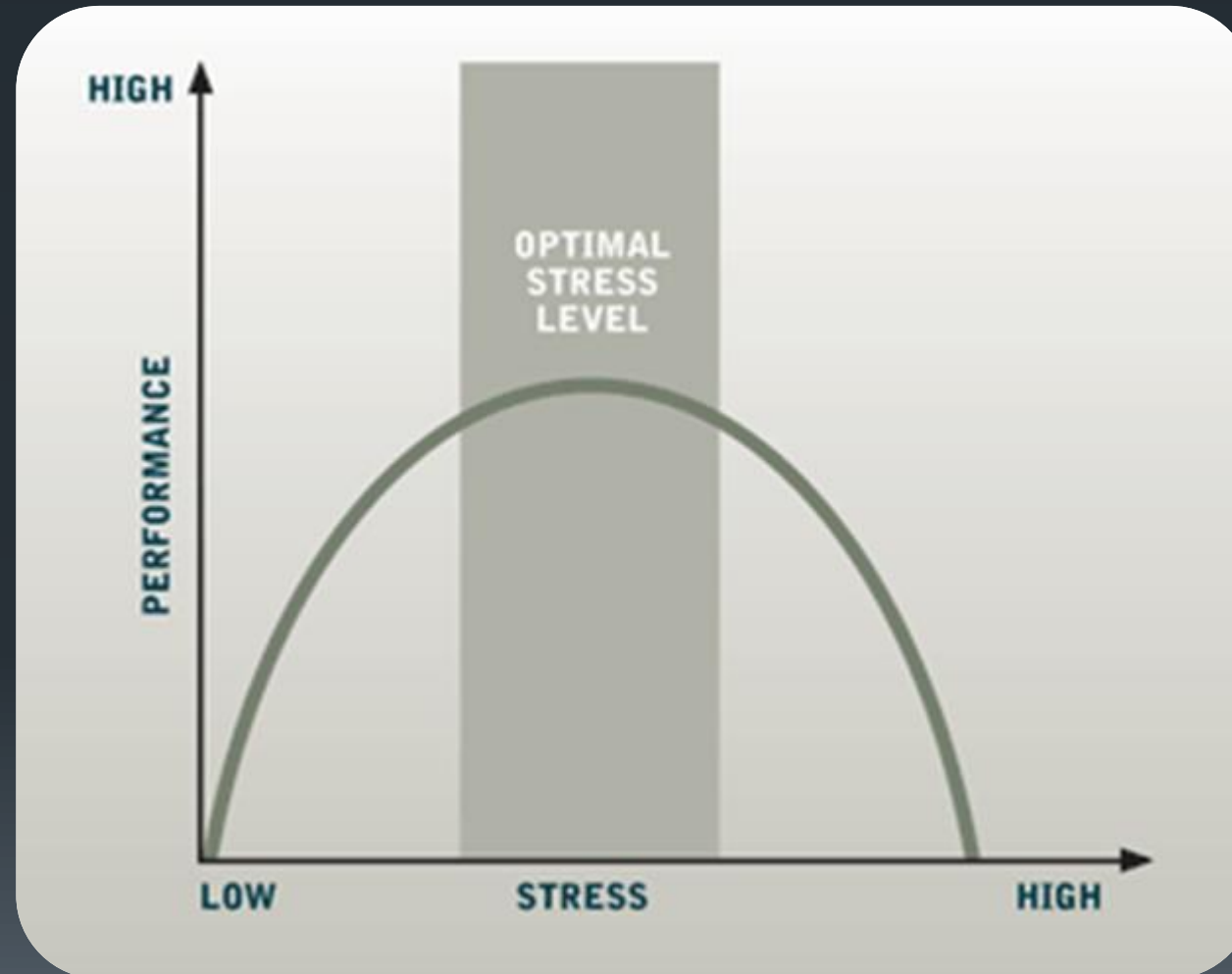
- Some researchers believe humans evolved to have a stress response during fight-or-flight scenarios.
- The physical and cognitive changes we go through once we perceive a threat could potentially aid us in survival.
- The near-instantaneous sequence of hormonal changes and physiological responses helps someone to fight the threat off or flee to safety.



Stress is Normal, *but...*

- Stress is an elevation in a person's state of arousal or readiness, caused by some stimulus or demand, real or perceived.
- In general, as stress arousal increases, health and performance actually improve. Within manageable levels, stress can help sharpen our attention and mobilize our bodies to cope with threatening situations.
- An optimum level of stress can act as a creative, motivational force that drives a person to achieve incredible feats.
- At some point, stress arousal reaches maximum effect. Once it does, all that was gained by stress arousal is then lost and deterioration of health and performance begins.

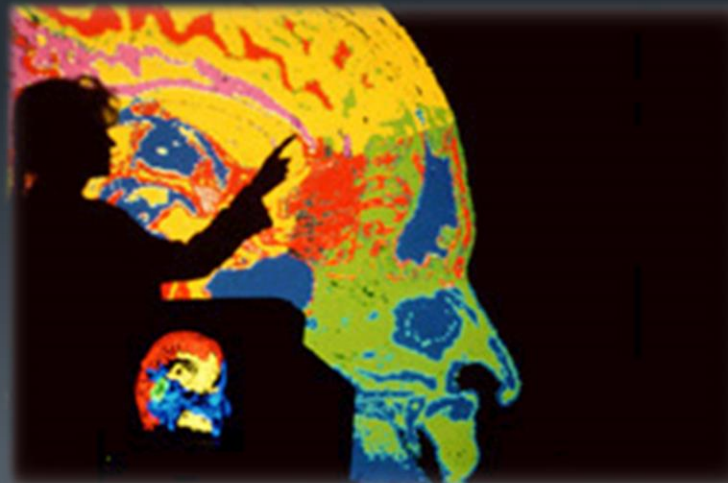
The Stress-Performance Link



The Neuroscience of Stress:

Stress Hormones

- **Epinephrine**: Most people recognize this hormone as “*adrenaline*.” Epinephrine triggers increased lung and heart activity. The increased blood flow to your brain can make you feel more awake and aware.
- **Cortisol**: This hormone changes the way you metabolize glucose and regulate blood pressure. During stressful situations, Cortisol gives your body the burst of energy characteristic in a fight or flight response.



The Body's Response

Our bodies are “*hard-wired*” to respond to crisis events:

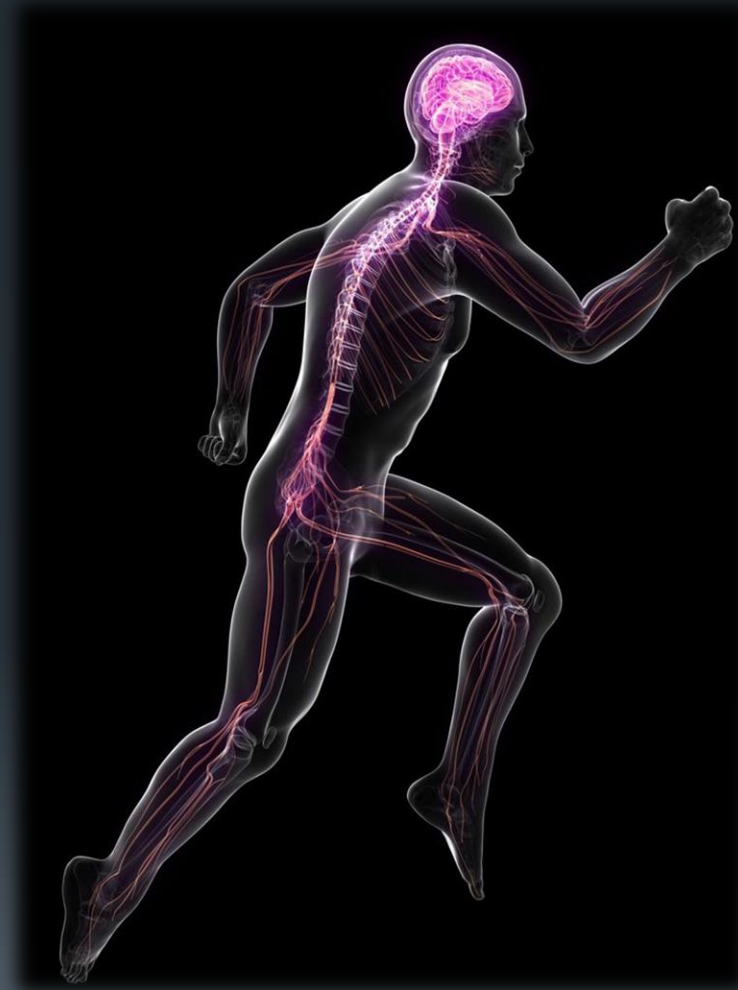
Autonomic Nervous System (ANS) consists of:

- Sympathetic (SNS)
- Parasympathetic (PNS)

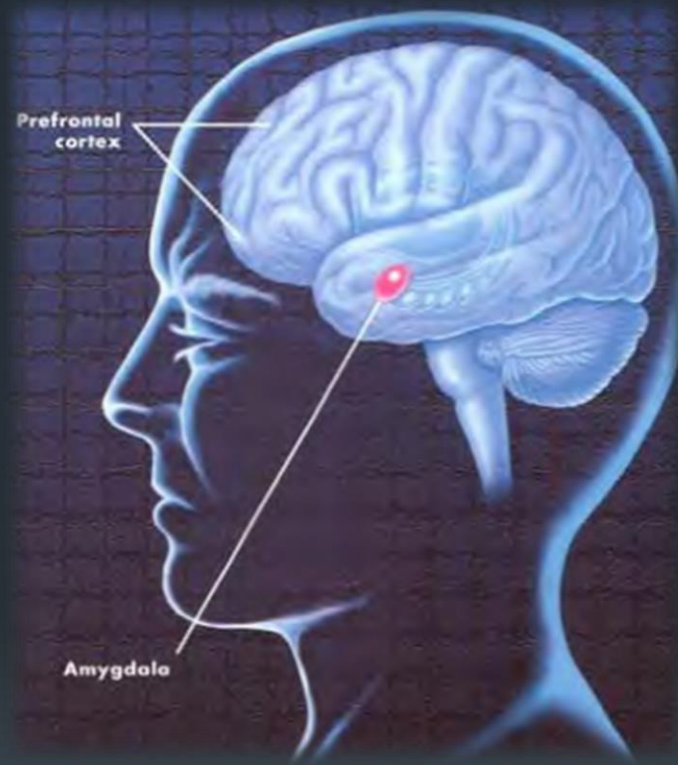
SNS = Fight or Flight

PNS = Relaxation

We normally operate in a state of “*homeostasis*” or balance between both systems.



The Brain's Response



The neurochemistry of arousal is also associated with the formation and fortification of traumatic memories.

In response to crises and threatening events, we tend to experience greater activation of our limbic system, also known as the “*emotional brain.*”

This can influence:

- Problem solving
- Decision making
- Judgment
- Logic
- Reasoning
- Impulse control
- Verbal processing

All critical functions to resolve a crisis.

Stress Tolerance

Elite soldiers' brains respond differently to the surge of hormones when they occur. Along with high levels of a chemical called DHEA that seems to mute the more negative aspects of stress, Navy SEALs have elevated concentrations of a neurotransmitter called Neuropeptide Y, which binds to synapses in the frontal cortex and modifies the way it responds to noradrenaline.

The effect is likely to prevent some of the undesirable effects of noradrenaline, such as dissociation and cognitive narrowing, while allowing it to keep amping up performance in other parts of the brain.



Biol Psychiatry. 2000 May 15;47(10):902-9.

Task Saturation

- “*Task Saturation*” is too much to do with not enough time, not enough tools, and not enough resources. It can be real or imagined, but in the end it can do the same thing.
- When the sum of these tasks exceeds the responder’s capability to deal with them effectively, he or she becomes *task saturated* and unable to perform any one of the tasks proficiently.
- ***As task saturation increases, performance decreases; as task saturation increases, executional errors increase.***

Helmet Fire



- Helmet fire is a mental state characterized by unnaturally high stress, task-saturation and loss of situational awareness.

Task Saturated People Are Not Heroes, They are Dangerous

- During crisis activations, overworking and ignoring functional needs (e.g., sleep, meals, contact with family, etc.) can sometimes be promoted as a badge of honor.
- Don't take pride in overworking. Overworked/Task Saturated people are dangerous to the operation.



"We've been in the office for three days straight. Some of us are sleeping on the floor. Another guy is walking around like a zombie with his hand tied to a coffee pot."

Signs of Task Saturation

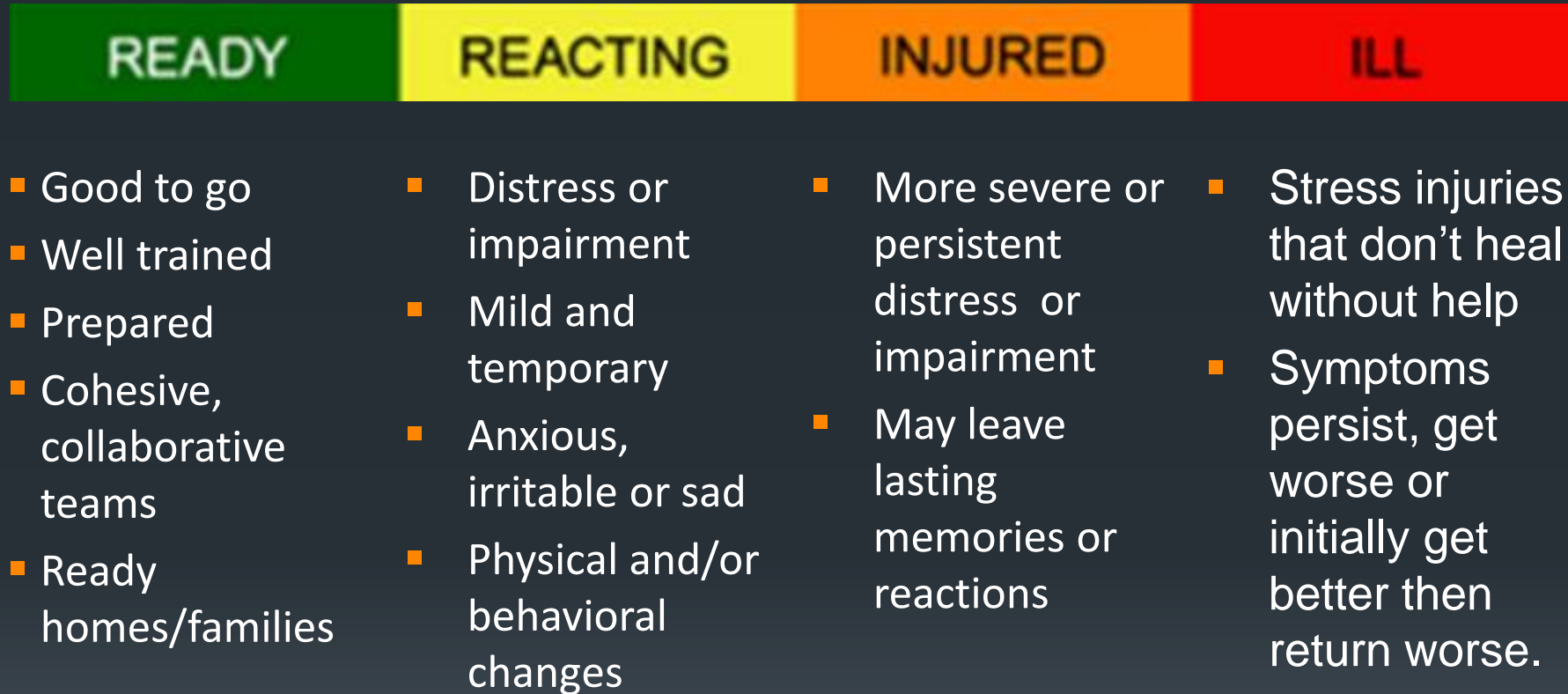
- Shutting Down is when you simply stop performing.
- Cognitive Lock In is sticking with your first decision, no matter what.
- Compartmentalizing/Target Fixation is an intense focus on one thing to the exclusion of all else.
- Channelizing is when you act busy, but all your doing is organizing and reorganizing lists and doing things sequentially, but not actually producing effective results.



“Cognitive Lock-In”

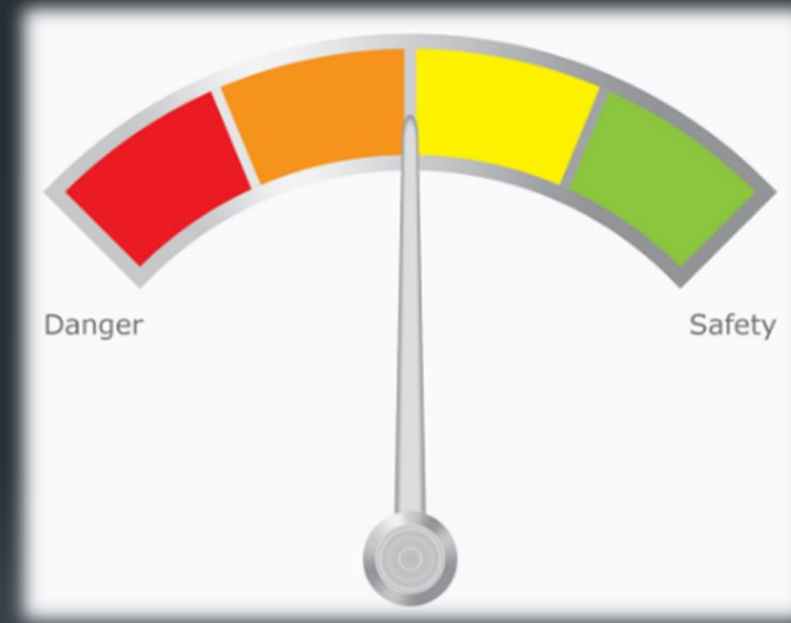
Sticking with your first decision, no matter what

Operational Stress Continuum




READY

- Good to go.
- Continue to monitor for signs of loss of function in the future if concerned.




REACTING

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- Difficulty relaxing or sleeping.
 - Loss of interest in social or recreational activities.
 - Unusual or excessive fear, worry or anger.
 - Recurring nightmares, troubling memories.
 - Hyper-startle reflex to noise.
 - Difficulty performing normal duties.
 - Any change from normal personality.
- 
- Ensure adequate sleep and rest.
 - Manage home-front stress.
 - Discussion in small groups (stress tips).
 - Refer to medical or EAP support if reactions persist.


INJURED

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- Inability to fall asleep or stay asleep.
 - Withdrawn from social or recreational activities.
 - Uncharacteristic outbursts of rage or panic.
 - Nightmares or memories that increase heartrate.
 - Inability to control emotions.
 - Suicidal or homicidal thoughts.
 - Loss of usual concern for moral values.
- 
- Keep safe and calm.
 - Rest and recuperation.
 - Refer to medical and/or mental health services.
 - Mentor back to full duty/functioning.
 - Reintegrate with Team when stabilized.

ILL

32

- Stress problems that last for several weeks.
 - Stress problems that don't get better over time.
 - Stress problems that get worse over time.
- 
- Refer to medical/mental health services.
 - Ensure compliance with recommended treatment.
 - Mentor back to full duty/functioning, is possible.
 - Reintegrate with Team if/when possible.

Operational Stress Control

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- Operational Stress Control is the management of stress as an element of the crisis environment to meet strategic and tactical goals.
- It is not simply generic stress management for wellness purposes.
- It seeks to identify the unique stressors anticipated in various crisis conditions and develop effective counter-measures.



Operational Stress Control

- Everyone involved in a crisis or threatening event is affected by it, including Operators and managers.
- Good planning should anticipate the psychological consequences and minimize disruptions to operations.
- Operational Stress Control requires a range of interventions at multiple levels in the pre-event, event, and post-event phases.



Operational Stress Control is Proactive

- A operational stress management plan for GSOC Operators focuses both on the environment and the individual.
- A clear organizational structure with defined roles and responsibilities for Operators, leads, supervisors, and managers reduces the potential for stress.
- An effective manager is familiar with the many facets of operational stress and takes a wide range of steps to integrate stress control strategies in the GSOC.

Elements of Operational Stress Control

- Effective management structure and leadership
- Clear purpose, goals, and training
- Functionally defined roles
- Administrative controls
- Team support, and
- Plan for stress control



Stress Control Leadership

- As a supervisor or manager you must assume shared responsibility for promoting a positive and healthy work environment, and not rely exclusively on Operators initiating their own self-care practices.
- Stress control should address both the Operator and the organization.
- Adopting a proactive perspective allows both Operator and organizations to anticipate stressors and shape responses, rather than simply reacting to a crisis when it occurs.



Pre-Crisis Phase

- A clear understanding of roles and procedures is critical to helping Operators manage stress. Training and preparedness in incident management procedures are therefore key to effective stress control.
- Establish clear lines of authority and responsibilities to minimize confusion and stress.
- Provide regular training on stress control.
- Develop guidelines to help Operators prepare for times of peak activity.
- Maintain an updated list of family members' contact information for each employee.
- Have a pre-established plan for how employees will check on their families if disaster strikes during work hours.

During a Crisis

- Clearly define individual roles and reevaluate if the situation changes.
- Institute briefings at each shift change that cover the current status of the work environment.
- Partner inexperienced Operators with experienced veterans. The buddy system is an effective method to provide support, monitor stress, and reinforce proper procedures.
- Rotate Operators from high-stress to lower stress functions.
- Initiate, encourage, and monitor work breaks.
- During lengthy events, implement longer breaks and days off, and curtail weekend work as soon as possible.
- Implement flexible schedules for Operators who are directly impacted by an event). This can help them balance home and job responsibilities.

After a Crisis

- The ending of the crisis response, whether it involved immediate response or long-term recovery work, can be a period of mixed emotions for Operators.
- While there may be some relief that crisis operations are ending, there is often a sense of loss and "*letdown*," with some difficulty making the transition back into family life and the regular job.
- The following are some action steps that can help ease the disengagement and transition process for Operators.

After a Crisis

- Allow time off for Operators who have experienced personal trauma or loss. Transition these individuals back into the organization by initially assigning them to less demanding jobs.
- Develop protocols to provide Operators with stigma-free counseling so that workers can address the emotional aspects of their experience.
- Institute a debriefing process to help workers put their experiences in perspective and to validate what they have seen, done, thought, and felt.
- Provide educational in-services or workshops around stress management and self-care.
- Offer group self-care activities and acknowledgments.

Barriers to Managing Stress

- It is every leader's job to help Operators understand that it is okay to seek help.
- Some leaders may question this, but ask yourself which person you would rather have working beside you, the person who has received help for their stress issues or the person who needs help but is not getting it or is self-medicating in other ways (substance abuse)?
- You may think that by taking action you'll hurt their career, but not taking action can be even worse.
- We need to care about Operators as a people, not just worry about their career.
- Getting help will not necessarily negatively impact their career, but poor job performance will.

Adjust Your OPTEMPO

- As the operation shifts from Response to Recovery it will be necessary to shift the operational tempo accordingly.
- You are moving from Sprint to Marathon mode.
- Pace yourself for the long haul.



Self-Care Tips for Operators [1]

1. Familiarize yourself with signs of stress.
2. Get enough rest, exercise regularly, and maintain a healthy diet.
3. Have a life outside of your job.
4. Avoid tobacco, alcohol, drugs, and excessive caffeine.
5. Draw strength from faith, friends, and family.

Self-Care Tips for Operators [2]

6. Maintain your sense of humor.
7. Have a personal preparedness plan.
8. Participate in training offered at your workplace.
9. Get a regular physical checkup.
10. Ask for help if you need it.



For Crisis Responders & Leaders:

Closing Thoughts [1]

- Operational Stress is real, it can affect the very best of us and it can potentially derail your GSOC operations at very inopportune times.
- It is important that leaders and planners acknowledge that it exists, and that it can cause problems.
- Leaders and Operators must understand and be able to recognize the key warning signs of operational stress, such as task saturation, and know how to get help.

For Crisis Responders & Leaders:

Closing Thoughts [2]

- Stress is not a badge of honor; Learn to manage stress as an element of the operational environment.
- Acknowledge it exists.
- Acknowledge it can create problems.
- Identify the symptoms.
- Understanding the warning signs.
- Work proactively to manage it.
- Make operational stress control a formal part of your GSOC operations plans and processes.

Time Sensitive Critical Events Happen Every Day



IT Outage



Risk to Traveler & Worker Safety



Supply Chain Disruptions



Active Shooter



Most Current Processes are Disjointed, Complex and Stressful

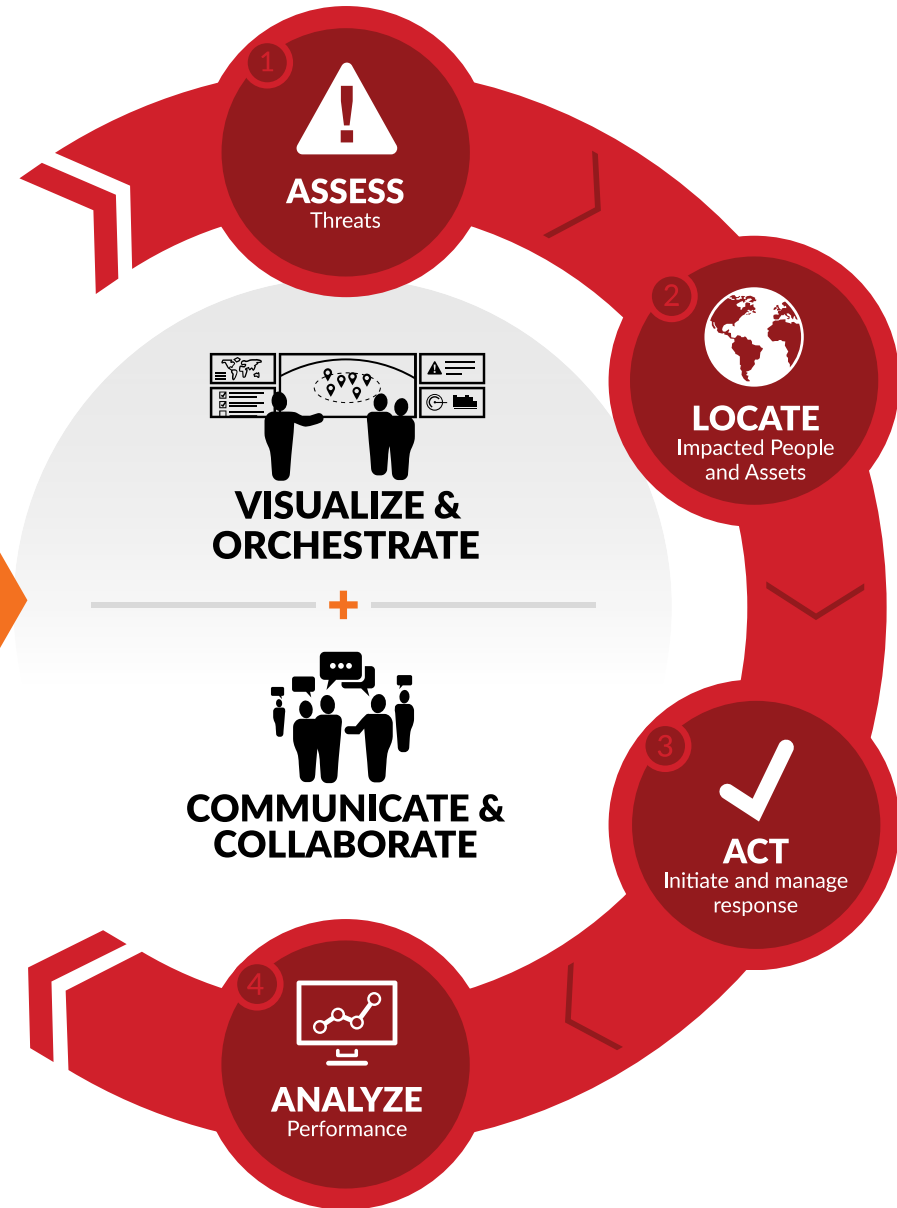


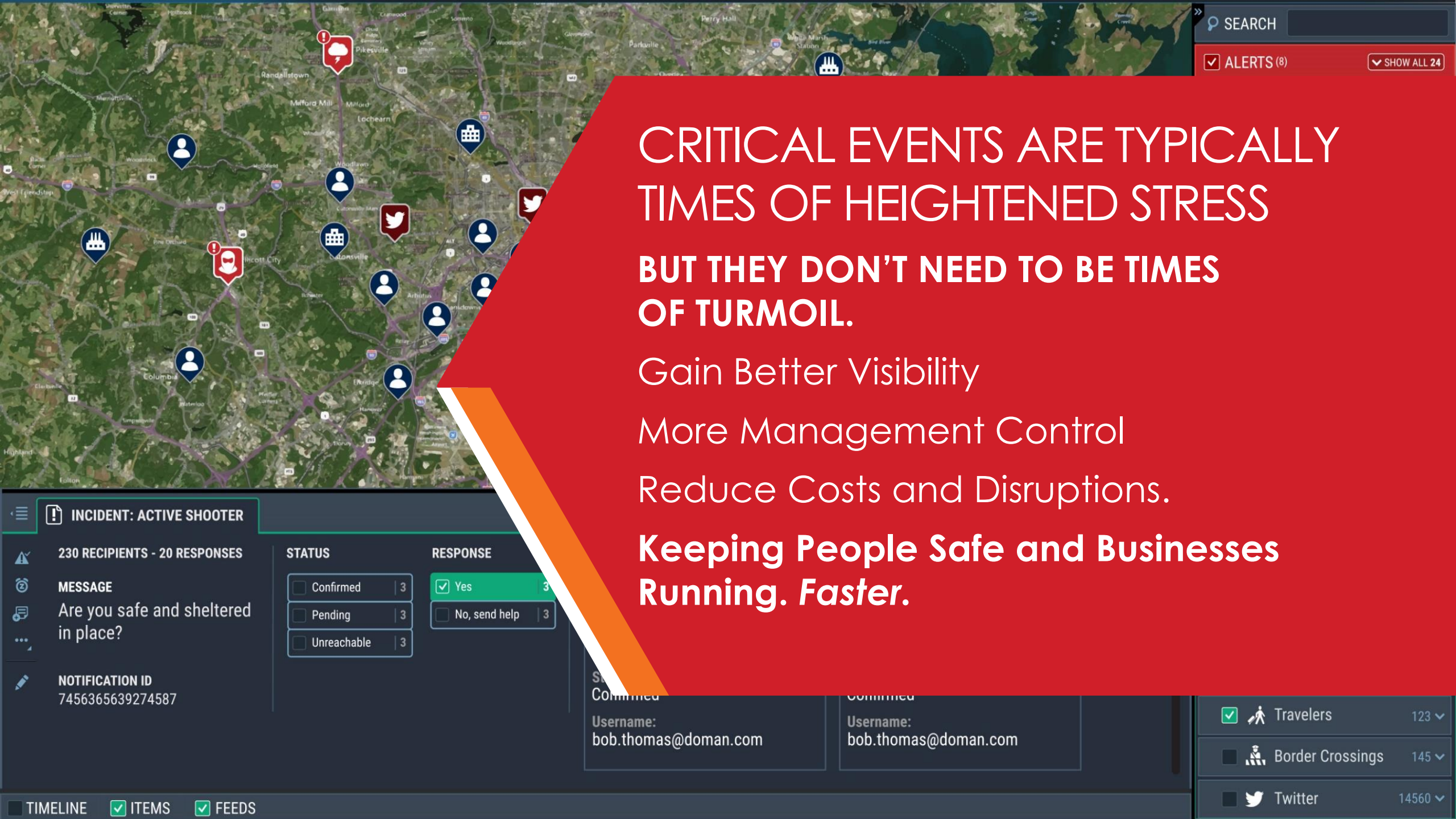
Take an Integrated Approach

CEM Critical Event Management PLATFORM

COMMUNICATE & COLLABORATE

Identify and locate critical external parties who can help coordinate response and manage the crisis. Take a single-pane-of-glass".





CRITICAL EVENTS ARE TYPICALLY
TIMES OF HEIGHTENED STRESS

BUT THEY DON'T NEED TO BE TIMES
OF TURMOIL.

Gain Better Visibility
More Management Control
Reduce Costs and Disruptions.

Keeping People Safe and Businesses
Running. *Faster.*

INCIDENT: ACTIVE SHOOTER

230 RECIPIENTS - 20 RESPONSES

MESSAGE
Are you safe and sheltered
in place?

NOTIFICATION ID
7456365639274587

STATUS	RESPONSE
<input type="checkbox"/> Confirmed 3	<input checked="" type="checkbox"/> Yes 3
<input type="checkbox"/> Pending 3	<input type="checkbox"/> No, send help 3
<input type="checkbox"/> Unreachable 3	

Confirmed	Confirmed
Username: bob.thomas@doman.com	Username: bob.thomas@doman.com

<input checked="" type="checkbox"/> Travelers	123
<input type="checkbox"/> Border Crossings	145
<input type="checkbox"/> Twitter	14560

The 24x7 hub for Critical Event Management, Threat and Situational Intelligence

CONFERENCE CALL

REC London

CALLERS: 32

- Laura Downs
- Marcus Hightower
- Alexa Worthington
- Scott Van Irish

CRISIS COMMANDER TASKS

LONDON PROTESTS | 8 TASKS

22%



Review Alert and related Assets.

Completed: 1h ago by Vincent Geffray



Turn on ActivistMap, Terrorism and International SOS feeds.

Completed: 1h ago by Michael Zhang



Check Twitter feed to assess on the ground situation

Claimed: 52min ago by Michael Zhang



Optimize the Human and Technology Element To Assess and Mitigating Risks



CEM

Critical Event Management



GAIN
CLARITY



RESPOND
FASTER



MINIMIZE
DISRUPTION

CEM Critical Event Management

+ Improve assessment of threats to your people, assets and operations

+ Accelerate and manage operational response and communication to stakeholders

+ Analyze & optimize performance
+ Eliminate bottlenecks

Poll Question: Are you interested in learning more about how Everbridge can help with critical events?

- + Yes, please follow up.**
- + No, not at this time.**

Audience Q&A

BEHAVIORAL SCIENCE APPLICATIONS

Corporate | Campus | Community Crisis Intervention

Toll Free

888-404-6177

New York Metro Area

917-289-1186

Email: info@behavioralscienceapps.com

Web: www.behavioralscienceapps.com



www.facebook.com/bsacrisisintervention



www.linkedin.com/in/stevecrimando

About BSA

- Behavioral Science Applications (BSA) is a privately held research, training and consulting firm dedicated to facilitating evidence-informed decision making in the areas of homeland and private security, crisis intervention, violence prevention, and emergency management. BSA integrates the methods and doctrines of the behavioral sciences into planning, testing, response, and recovery from crisis situations of all types. BSA serves numerous multinational corporations, governmental and non-governmental organizations (NGOs).
- Accurate behavioral assumptions integrated with structured crisis intervention practices are essential to developing effective and defensible emergency-related policies, plans, procedures, and exercises. Combining decades of experience from the Board Room to the frontlines in disaster response, BSA helps organizations align their violence prevention and emergency management posture with the realities of human behavior to ensure the success of an organization's safety, security and emergency management programs.
- BSA brings together seasoned mental health, law enforcement, legal and medical professionals to help client organizations understand, prepare for, and respond to all types of violence, whether perpetrated by an angry employee, an enraged spouse or partner, or a terrorist targeting the organization and its people. BSA helps clients effectively integrate workplace violence prevention and response programs into the organization's broader risk management strategy.

References

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US Department of Health and Human Services , Substance Abuse and Mental Health Services Administration. [Managing Stress During a Crisis-A Guide for Supervisors](#). Publication No. NMH06-0235.

[Navy Leader's Guide to for Managing Sailors in Distress: Operational Stress Control](#). US Navy, Naval Center for Combat and Operational Stress Control. Last accessed online on 11/ 3/16
http://www.med.navy.mil/sites/nmcphc/Documents/LGuide/op_stress.aspx

OPSTRESS in the Literature

Crimando, S, Lahad, M, & Rogel, R. (2012). The Emergency Behavior Officer (EBO): The Use of Accurate Behavioral Information in Emergency Preparedness and Response in Public and Private Sector Settings. Hughes, R., Kinder, A. & Cooper, C. (Eds.) *The International Handbook of Workplace Trauma Support*. 227-239. Wiley-Blackwell. London, UK.

Kehoe, M. & Usher, L. "Safeguarding Officer Mental Health Before and After Mass Casualty Incidents," *The Police Chief* 83 (June 2016): 26–31.

Nicoletti, J., Garrido, S. and Kirschner, M. "Supporting the Psychological Recovery of First Responders Following a Mass Casualty Event," *The Police Chief* 83 (June 2016): 40–45.