

# Exercise Black Fault

## Executive Summary



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<http://simtec.jibc.ca>



## Introduction

**Exercise Black Fault** is the fifth of the five planned exercises that the Simulation Training and Exercise and Collaboratory (SIMTEC) project conducted. This significant research, undertaken through the Office of Applied Research and the Emergency Management Division at the Justice Institute of BC (JIBC), is funded by the Canadian Safety and Security Program, Centre for Security Science, Defence Research and Development Canada, is championed by Employee Assistance Services, Specialized Health Services Directorate RAPB/BRP Health Canada and is conducted in collaboration with Royal Roads University (RRU).

The aim of SIMTEC's research is to study the psychosocial factors involved in the decisions and actions performed during a disaster by responders over a number of scenarios. **Psychosocial** refers to the interaction between one's mind and body; in practical terms, the term refers to one's physical, psychological and social functioning.

Three primary research questions guide the SIMTEC project:

1. What resources and training do Emergency Operations Centre (EOC) personnel need to respond more effectively to the psychosocial consequences of disasters?
2. What resources and training would assist first responders, family physicians and other psychosocial practitioners to respond to the psychosocial consequences of disasters?
3. How can the knowledge and resources developed through this research most effectively be made available to EOC personnel, first responders, psychosocial practitioners, researchers and community members around the world?

SIMTEC is a "collaboratory", or virtual laboratory of information, research, and expert dialogue focused on providing training and exercises for emergency responders in Emergency Operations Centres (EOC) and other senior decision makers with a specific emphasis on the psychosocial implications. This collaboratory includes a digital library of exercises, injects, scenarios, simulated news footage, and exercise manuals which serve as a central repository and evolving compendium of resources for training and research available on the internet, free of charge to any jurisdiction with access to high-speed internet. The protocols and guidelines will be of interest and applicable to any country.

## Exercise Black Fault

**Exercise Black Fault** is an immersive tabletop exercise, intended to assess working relationships and to analyze processes related to decision-making and worker-care used by community-based Emergency Operations Centre personnel responding to a catastrophic earthquake. It focuses on how they manage the EOC so that the psychosocial impacts of the earthquake are



considered in their decisions and actions. They were provided with all relevant operational and tactical aspects of the response through timed injects which were designed to simulate the kind of stressful decision-making environment that might be expected in an EOC following a catastrophic earthquake. As a result, our research inquiry could concentrate on the human dimensions of the EOC as personnel made numerous high-risk, high-consequence decisions while contending with aftershocks, information gaps/errors, competing resource demands, and shifting response priorities.

**Exercise Black Fault** explored how EOC personnel considered and integrated the psychosocial aspects of an effective response into their strategic and tactical decision making as they chose to allocate limited resources, communicate internally with each other, and externally with responders, partners, media, and the public, and addressed worker self-care. Specifically, the key objectives of the exercise were to:

1. Examine the processes used by EOC personnel when formulating high-risk, high-consequence decisions.
2. Examine the processes used by EOC personnel when advising tactical level responders on resource prioritization.
3. Clarify communication strategies for information sharing between EOC personnel and policy-level decision makers, the media, and the public.
4. Analyze worker care strategies implemented by EOC personnel.
5. Examine the role of the Team Support Worker (TSW) in helping manage individual worker-care and group dynamics during a high-stress event.

Importantly, because the research focused on the relationships within the EOC, it was grounded within an Emotional Intelligence (EI) framework. This approach recognizes that emotion is present in any human interaction and that, particularly in stressful emergency response environments, it is beneficial for the health and wellness of responders and for the effectiveness of the response to recognize and implement effective coping strategies. Observations from the four previous SIMTEC exercises indicated that doing so contributes to reduced stress, improved decision making, enhanced intra/inter EOC communication, and better outcomes for EOC personnel and for the public.

The development of **Exercise Black Fault** began in September 2014 with the SIMTEC research team assessing and integrating both exercise design and literature reviews learnings from the four previous exercises. This resulted in two significant exercise enhancements: 1) the use of an independent evaluator to observe and provide feedback to each EOC on their functioning and decision-making; and, 2) the use of a pre- and post-exercise survey aimed at examining emotional intelligence and its relationship to decision making in an EOC.

An extensive literature review was conducted and an Expert Working Group (EWG) was struck to support the exercise design. The literature review had two main points of focus: the role of



emotional intelligence in emergency response; and, the operationalization of the TSW in an EOC. Findings informed the design of the survey instruments which asked questions that linked intelligence to cognition in order to gauge changes in the emotional intelligence of EOC personnel following three hours of immersion in the exercise. Findings also informed the role for the TSW in the exercise and the background development of the training video on strategies for TSWs in the EOC. The EWG, comprised of experienced emergency management practitioners and responder decision-makers, contributed expertise into the exercise design, participated as simulator “actors” during the exercise, and provided input or appeared in the training video.

## Tabletop Exercise

**Exercise Black Fault** took place at the JIBC New Westminster campus on February 3, 2015 via Praxis simulation—this enabled an immersive, interactive first-person perspective of the unfolding scenario. The participants were four local authority EOCs (Coquitlam, New Westminster, Delta, and the North Shore), nine Simulator “actors” (experts from police, fire, paramedics, and government), four independent evaluators, and two news reporters. The personnel in the EOC included representatives from first responders, support responders, emergency management responders, and municipal government departments. Three of the EOCs were assigned a TSW from the Provincial Disaster Psychosocial Services Program; interestingly, the fourth EOC chose to appoint a TSW from within the team.

The exercise scenario begins 18 hours into the response to a magnitude 8.5 earthquake in the Cascadia Subduction Zone. The participants are informed that there are continuing aftershocks being recorded between magnitudes 4.0 and 6.0 and tsunami alerts have been issued for the entire outer coastline. Initial damage assessments indicate extensive damage to infrastructure and buildings throughout Southern Vancouver Island, Metro Vancouver, and the Fraser Valley. Responders and citizens are challenged to respond the event, and to the stressors associated with being impacted by and/or responding to those impacted by the earthquake.

Each exercise participant was emailed a link to the JIBC newscast with breaking news of the earthquake and a community-specific initial damage assessment 18 hours prior to the start of the exercise. When they arrived to begin the exercise they were shown a JIBC newscast providing an update on the impact of and response to the earthquake. To ensure realism, each community was informed that their primary EOC had been heavily damaged so they would be working from a back-up location. This temporary facility was organized and equipped to appear like an EOC 18 hours following an earthquake—there were piles of disorganized reports, messages, requests left haphazardly throughout the room and discarded food and beverage containers.

Before the exercise began, participants were shown the [Exercise Winter Blues](#) training video to help them manage some of the challenges they would encounter during the exercise. This video



highlights the five important themes related to psychosocial factors influencing how EOC personnel manage their own stress reactions as they make high-risk, high-consequence decisions and how they support others impacted by and/or responding to a traumatic event.

During the exercise, the SIMTEC research team and independent evaluators observed the EOC personnel's response to numerous injects which included aftershocks, appreciations or criticisms from a superior, disruptive behaviour by a colleague and requests for information from the media while they balanced planning and made decisions on how to allocate limited resources to achieve the greatest good. The exercise was audio and video recorded through Praxis

Following the exercise, focus groups were conducted with specific participant groups ( EOC teams, simulator "actors", independent evaluators, media, and invited guest observers). The focus groups were transcribed, and were coded and thematically analyzed using NVivo Data Analysis software. A facilitated large group debrief was also conducted, allowing participants to share their experiences and reflections from the exercise. Researchers were especially interested in feedback related to optimizing the role of the TSW within the EOC as this is the focus of the training video that will be produced from this exercise.

## Exercise Black Fault Findings

This exercise generated rich data on how decision-makers in an EOC can consider and integrate psychosocial requirements into their strategic and tactical decision-making and can better address psychosocial stressors and initiate worker-care strategies. The primary data sources were:

- the individual and group reflection (pre-exercise/post-exercise survey, focus group, and exercise debrief;
- EOC specific observation feedback from the Simulator "actors", independent evaluators, and researchers; and,
- exercise feedback from the simulator "actors", the media, and invited guest observers.

Several themes emerged from an analysis of this data—they are summarized below.

1. In the fast-paced environment of an EOC, stressful situations arise when personnel are required to make quick decisions or allocated limited resources without the necessary information and when personnel are required to interact and/or respond to the media.
2. How the EOC Director introduces, interacts with, and supports the TSW position can influence how EOC personnel respond to TSW interventions and how they practice worker-care and team-care.



3. The TSW can provide calming, compassion, encouragement, and facilitate positive interaction within the EOC which goes beyond taking breaks or connecting with family.
4. The TSW is valued when they are known to EOC personnel or when they demonstrate their appreciation for the pressures of the EOC. This requires that TSW's be properly trained in basic EOC operations management and that they be included in EOC practice exercises.
5. Collaboration amongst EOC personnel can facilitate information sharing, task and resource prioritization, and consensus building however, this must be balanced with situational awareness that ensures timely decision-making, role/function clarity, and seamless operations (achieved through adherence to BCERMS goals, holding regular briefings, and using checklists/visuals/maps).
6. In the initial chaos of responding to a crisis, the EOC may be operating within difficult conditions that will require flexibility as personnel deviate from their planned and practiced management procedures or processes.
7. The media can be a valuable resource and support to the EOC; they can be an ally in relaying information or instructions to the public. However, in order for this to relationship to work effectively, the media require accurate, timely information.

**Exercise Black Fault** required EOC personnel to contend with numerous challenges and complexities as they responded to the catastrophic earthquake. The findings confirm the benefits attained when the psychosocial aspects of an effective response are fully integrated into the EOC operations and into its strategic and tactical decision-making. Importantly, they demonstrate the value of embedding the TSW into the EOC operation. Further education and cross-training will increase individual and collective confidence and will “normalize” the presence of psychosocial support in the EOC.

SIMTEC researchers incorporated these findings into three main **Exercise Black Fault** deliverables.

1. A report to each EOC team that highlights their aggregated EI survey results, their reflections and feedback, and observations from the independent evaluator and SIMTEC researchers.
2. A training video and supporting brochure on the role and responsibilities of Team Support Workers in an EOC.
3. A peer-reviewed article focused on the learnings pertinent to emotional intelligence in an EOC.

**Exercise Black Fault** materials and supporting documents were uploaded to the JIBC website. They are available, along with the training video and other resources, for download from <http://simtec.jibc.ca>.