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CRISIS PREPAREDNESS THROUGH GAMING AND SIMULATIONS: 10 KEY CONSIDERATIONS FOR EFFECTIVE CRISIS TRAINING

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Abstract. Organizations seeking to enhance crisis preparedness and resilience can draw on a wide range of training formats, yet often default to a narrow repertoire of familiar sessions. This article introduces the “crisis training toolbox,” a simple framework that distinguishes four primary forms of crisis training: courses, training, simulations, and games. While games have long been part of crisis-related practice, from early wargaming to contemporary crisis games, we argue that they remain undervalued and underutilized. We identify two recurring pitfalls: overreliance on a single training type and rigid adherence to standardized formats. To address these challenges, drawing from our experience in game design, this article proposes ten key considerations for designing effective crisis simulations and games. These considerations are presented as parameters, or levers, that can be adjusted to align sessions with organizational needs. We argue that a deliberate, goal-oriented, and reverse-engineered approach to exercise design is essential to move beyond “check-the-box” training practices, foster adaptability and creativity, and realize the full potential of simulations and games. This article is based on a presentation delivered by Robbert Meulemeester (PM • Risk Crisis Change) and Alexander Nieuwborg (Delft University of Technology & Netherlands Defence Academy) at the Crisis Talks event, hosted by the Chair of Crisis Governance at Antwerp Management School on May 22, 2025.

Organizations have a range of options at their disposal to strengthen their crisis management capacities, organisational and individual resilience, and overall preparedness. These options include developing capabilities for operational crisis response, strategic crisis management, and crisis communication, strengthening stakeholder networks, establishing robust crisis protocols, and investing in various forms of crisis training.

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The term "training" is often used as a catch-all descriptor for a broad spectrum of activities aimed at increasing organizational competency in crisis management. As the range of potential training interventions is vast, we introduce the crisis training toolbox (Figure 1) as a means to bring structure in this article. In this toolbox, we distinguish between four primary training types, mapped along two axes: the competency focus (from knowledge transfer to skills development) and the amount of agency participants hold in the way the session unfolds (from low agency to high agency).

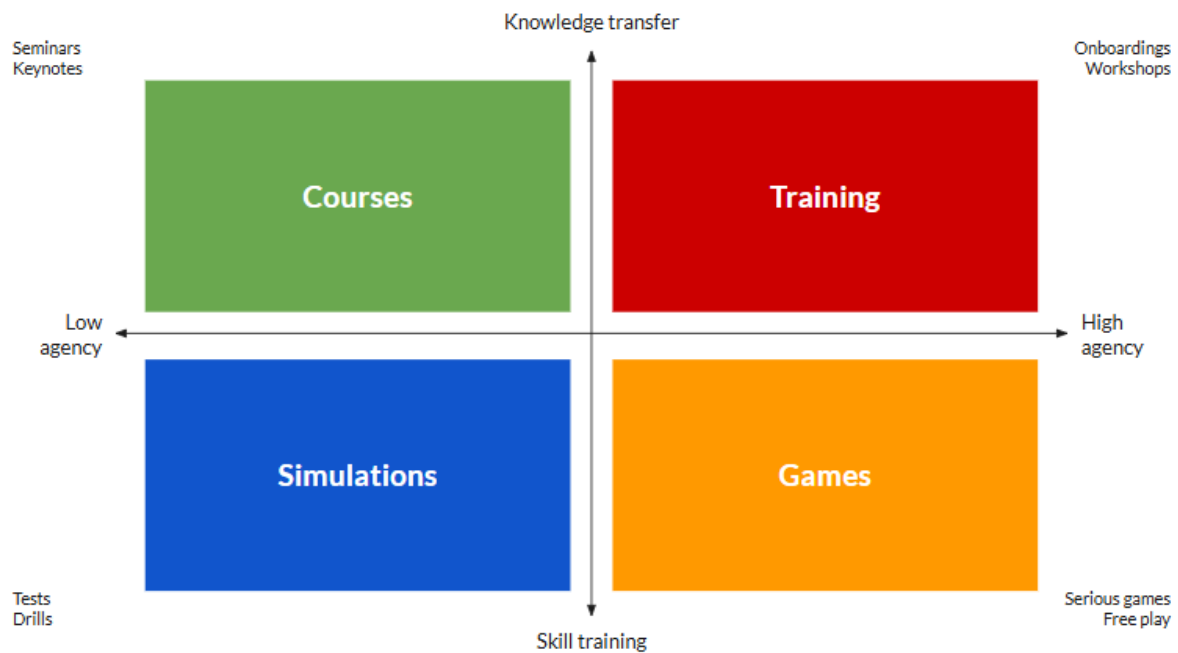


Figure 1: the crisis training toolbox

Courses, typically located in the top-left quadrant, are primarily designed for knowledge dissemination and offer little agency to participants. For example, apart from a brief Q&A, a keynote or course typically offers little flexibility in its program. Training sessions, while still focused largely on knowledge transfer, generally offer more agency. Effective training sessions draw directly from the organizations specific protocols, language, and operational context, and offer more flexibility in terms of the training program. An effective trainer, as we have probably all experienced at some point, is able to adapt the program to the group's feedback, questions, and needs, rather than rigidly adhering to a fixed schedule. On the lower half of the matrix, simulation exercises emphasize skill development through realistic scenarios but offer participants little agency. The scenario unfolds as designed, regardless of the players' actions. Games, by contrast, are more interactive: participants' decisions and behaviors can alter the course of events, shaping the session as a result. This article focuses primarily on the bottom half of the framework, where we will continue to use "simulations" and "games" as designations.

When reflecting on our combined experience, from both practice and academia, we noticed two recurring pitfalls related to crisis training. First and foremost, many organizations find themselves constrained within one quadrant of the training toolbox, perhaps relying solely on courses, and often neglecting simulations or games. We attribute the neglect to games often

being considered as a recreational activity rather than a professional or academic practice. When budget limitations allow for only one crisis training per year, crisis teams often understandably prioritize traditional training over games.

Second, when organizations do use simulations or games, they often prefer the familiarity of the former and frequently use a small set of standardized simulation formats, such as the traditional tabletop exercise (TTX) or the first action and response exercise (FAREX). Strict and rigid adherence to preset simulation formats deprives organizations of the distinct advantages and variation inspired by gaming practice. Consequently, organizations may fail to realize short-term benefits and become entrenched in repetitive or suboptimal practices over the long term. We urge practitioners to take inspiration from game design when developing crisis training, and will outline ten key considerations later in the article.

History and Advantages of Crisis Games

Much can be learned from the world of gaming, given that game-based approaches to crisis preparedness are by no means a recent development. Although its exact origins are difficult to trace, conducting games in the context of crisis is a long-standing human practice. Its roots seem to predominantly stem from wargaming, a gaming practice focusing on conflict simulation. Early examples include the game of Go around 2300 BC, and chess, which emerged in its modern form by the 1400s. Gradually the practice of wargaming became more formalised as by the 1800s, Prussian officers developed the *Kriegsspiel*, a structured wargaming system used for training. Afterwards, the *Kriegsspiel* and other types of games became standard practice in many militaries. Over time, the use of games gradually proliferated beyond the defense sector and has become a common decision-making tool across various fields in times of crisis.

The benefits of gaming are numerous and well-supported. First, play is a universal human experience; something everyone engages in, instinctively and intuitively. Second, games can serve as both a window and a mirror: they allow participants to envision the potential impact of a crisis situation while simultaneously reflecting on their own roles and assumptions. Additionally, depending on the level of abstraction, games are particularly well-suited for training essential crisis management skills, including soft skills, often to a degree that is difficult to achieve in highly realistic exercises, where participants tend to become narrowly focused on their individual task cards and the scenario progression as predefined in the crisis plan. In general, games foster shared understanding of organizational dynamics, and generate powerful lived experiences that invite meaningful reflection. For this reason, we invite crisis professionals to think more like game designers.

Ten Key Considerations for Your Next Simulation or Game

Before developing a new simulation or game, it is essential to make deliberate choices about its setup and configuration. Based on our combined experience in game design, we identified ten recurring key considerations. Think of them as parameters, levers, or sliders you can adjust. Once again, these parameters are not limited to game design. We encourage crisis

professionals to apply them when shaping crisis training of all kinds. We also want to stress that these parameters are by no means exhaustive and do overlap.

1. Focus

This parameter concerns the spectrum between operational, tactical and strategic decision-making. At its core lie two fundamental questions: who is the intended target group, and what are the desired outcomes of the session? Simultaneously addressing both operational, tactical and strategic goals is a complex undertaking typically achievable only in the context of large-scale sessions. For smaller-scale sessions, it is often necessary to make a deliberate choice between the three. As with all key considerations presented in this article, the decision is not binary. A thoughtful and context-sensitive mix of both operational, tactical and strategic decision-making may, in many cases, be the most sensible approach.

2. Objectives

Related to the previous parameter is the distinction between different types of objectives. Gaming often emphasize process-oriented goals, focusing on how teams achieve outcomes. Examples include observing to what extent protocols are being followed, whether crisis meetings are conducted in a structured and effective manner or how well time constraints and stress factors are being managed. On the other hand, simulations tend to be more outcome-oriented, evaluating whether specific tasks or deliverables have been completed. Examples include determining testing whether a reflex communication was issued within the first 30 minutes, whether the operations team successfully activated the emergency power generator, or whether the contact details of a key stakeholder were located in time. In other words, some objectives lend themselves to binary evaluation and can often be “ticked off,” whereas other objectives involve more nuance and are inherently less black-and-white. It is up to the organizer to carefully choose an appropriate number of well-defined objectives.

3. Crisis phase

This parameter concerns the selection of the moment within the crisis timeline at which the simulation or game is set. Chaos phase games focus on the immediate aftermath of a disruptive event such as a fire, accident, or spill. Participants typically begin wherever they happen to be at the time the game starts, and the emphasis is on making initial sense of the situation, activating the crisis organization, and working toward a coordinated response. These sessions often conclude once a basic level of coordination and when some kind of control has been established. In contrast, coordination phase simulations or games begin with the team already convened, bypassing the initial chaos, and shift attention to executing a structured response effectively. Combining both phases in a single session is challenging and generally only feasible within full-day (or longer) formats. In shorter sessions, it is advisable to select one phase as the primary focus. Attempting to cover both tends to compress the timeline unrealistically and may dilute the overall learning impact.

4. Involvement of others

A key design decision in any simulation or game concerns whether to include parties beyond the immediate crisis team. In other words, should the exercise be confined to the players present in the room, or should it actively involve others? Involving stakeholders is generally beneficial, as it helps to strengthen interorganizational relationships, clarify dependencies, and surface hidden assumptions or misconceptions. Even limited engagement, such as making a few phone calls to external actors during the session, can add valuable realism. However, we typically recommend active stakeholder involvement only for teams with sufficient experience and maturity. Including third parties prematurely may lead to performance issues or reputational risks if the organization appears unprepared in front of key partners. As such, this parameter should be weighed carefully in relation to both the session's objectives and the current developmental stage of the participating team.

5. Scenario realism

At the heart of every simulation or game lies the scenario, and a key design decision involves determining the appropriate level of realism. For certain objectives, a highly realistic scenario (closely aligned with the organization's actual environment, systems, and protocols) may be essential. In other cases, an abstract scenario may be more suitable. The latter approach can be particularly effective for focusing attention on core soft skills essential to crisis management, such as active listening, comprehension, creativity, stress management, and foresight. In our practice, we often observe that abstract scenarios allow participants to move beyond rigid adherence to protocols and procedural checklists, encouraging deeper reflection and engagement. By contrast, realistic scenarios can sometimes reinforce procedural thinking at the expense of these broader competencies.

6. Gameplay

From a gameplay perspective, most simulations or games are collaborative in nature. The crisis team, often referred to as the blue team, works together to confront and resolve the scenario, which effectively serves as the common enemy. However, introducing adversarial dynamics into a session can add a valuable new dimension. In such setups, a second team, typically known as the red team, is tasked with injecting disruptions or complications into the scenario for the blue team to address. The red team may operate from a predefined script containing detailed scenario injects with specific timestamps, or they may be granted full creative freedom to challenge the blue team in real time, often within set boundaries.

This format offers several distinct benefits. For the blue team, the injects tend to feel more realistic and dynamic than traditional scripted slides or facilitator prompts. For the red team, the session becomes an opportunity to analyze vulnerabilities, test organizational resilience, and explore failure points. These are activities that are educational and engaging in their own right. From the perspective of the organizers, adversarial exercises may also reduce the amount of detailed preparation required in advance.

7. Scenario evolution

Also from a gameplay perspective, organizers need to make a choice between a real-time and a turn-based format. In a real-time session, the simulation or game timeline mirrors the scenario timeline, meaning that one hour of gameplay corresponds directly to one hour within the simulated crisis. This format is the default setting for most exercises and tends to offer the highest level of realism, closely reflecting the time pressures inherent in actual crisis situations. In contrast, turn-based simulations or games decouple scenario time from real time. Progression within the scenario is driven entirely by the teams' decisions, allowing participants as much time as needed to analyze the situation and determine their next actions. While real-time formats promote realism and time-sensitive decision-making, turn-based formats provide greater space for reflection and strategic thinking.

8. Scheduling

Another important design parameter concerns the degree to which a simulation or game is announced in advance. Sessions may be fully announced, entirely unannounced, or partially announced, for example, by notifying participants of the week in which the session will occur, but not the specific date or time. This decision should be made during the planning phase and, depending on the objectives, may or may not be communicated to participants. Unannounced simulations or games can be particularly valuable for experienced crisis teams. In some cases, even modest deviations, such as starting the exercise two hours earlier than scheduled, are sufficient to keep participants alert.

9. Pressure

Beyond the scenario itself, another important parameter involves determining the level of pressure to which participants will be subjected during the session. Simulated stressors may include pressure from numerous internal or external stakeholders (for instance, through role-played phone calls, a flood of demanding emails, or interruptions from senior leaders entering the room to request immediate updates). In our own practice, we even started experimenting with elevating participants' physical stress levels (such as by having them climb several flights of stairs prior to a crisis meeting) in order to simulate heightened physiological arousal. As with other parameters, the level of pressure should be carefully calibrated in advance. It must align with both the maturity and experience level of the participants and the intended learning objectives. When used appropriately, pressure enhances realism, but when overused, it may overwhelm and hinder effective learning.

10. Setting

This parameter concerns whether the simulation or game will take place in a physical setting, online, or in a hybrid format. It is an important consideration, as the chosen format can significantly influence the dynamics and outcomes of the exercise. While hybrid sessions may more accurately reflect real-world crisis response conditions, our experience suggests that the modality should be aligned with the maturity level of the crisis team. Less experienced teams may struggle with the discipline required for effective coordination in online or hybrid

formats. In such cases, conducting the session in person can provide greater structure, focus, and facilitator control, thereby supporting more productive learning.

Conclusion

Rather than defaulting to a single, preset session format and repeating the same simulation or game indefinitely, we encourage crisis practitioners to deliberately experiment with and adjust key parameters. Your next session could for example be designed as follows:

Operational focus	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ■ ○ ○ ○ ○ ○ ○ ○ ○ ○	Strategic focus
Test objectives	○ ○ ○ ■ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Exercise objectives
Chaos phase	○ ○ ○ ■ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Coordinated phase
Closed off (no or limited involvement of others)	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ■ ○ ○ ○	Open (significant involvement of others)
Realistic	■ ○	Abstract
Collaborative gameplay	○ ■	Adversarial gameplay
Real-time scenario evolution	■ ○	Turn-based scenario evolution
Unannounced scheduling	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ■ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Announced scheduling
Low pressure	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ■ ○ ○ ○ ○ ○	High pressure
Physical setting	○ ○ ○ ○ ○ ○ ■ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Online setting

Figure 2: Key considerations for simulations and games, presented as parameters.

We acknowledge the structural challenges many organizations face in regards to crisis training. Compliance requirements frequently drive a "check-the-box" mentality, where mere completing a training is prioritized over generating meaningful learning outcomes. This, combined with operational constraints, often results in the repeated use of familiar formats and recycled scenarios. Due to competing priorities and limited resources, little time is typically devoted to the deliberate scoping and design of exercise settings, learning objectives, and scenario complexity. As a consequence, many organizations remain confined to a narrow repertoire of formats such as their yearly tabletops or field training exercise (FTX). In this article, we encouraged crisis professionals to critically assess the limitations of traditional gaming and simulation formats, which often fall short in fostering creativity, adaptability, and improvisational thinking.

To break the existing patterns, we advocate for a goal-oriented, reverse-engineered approach to crisis games and simulations, in which the format is selected and adapted based on clearly defined learning objectives. Rather than defaulting to predefined simulation formats, we urge practitioners to draw from game design principles and to focus on the underlying parameters and levers that can be adjusted to achieve desired outcomes. It is equally important to

maintain variety and novelty in training experiences, guarding against habituation and ensuring that participants remain engaged and challenged.

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