



Exercises and games reinforce  
NDU course objectives

National Strategic Gaming Center

# Strategic Gaming for the National Security Community

By MARGARET M. McCOWN

*Tuesday was a busy day: North Korea tested a nuclear weapon, a biohazard incident shut down I-70 across Kansas and Colorado, and religious strife threatened the stability of the Pan Sahel oil region in West Africa. Wednesday brought an altogether different set of problems.*

**W**hat frenzied action novel is the above scenario from? While fiction, it is not in the local bookstore; rather, it is a glimpse of the National Strategic Gaming Center (NSGC). Located within the Institute for National Strategic Studies at the National Defense University (NDU) in Washington, DC, the NSGC designs and conducts strategic simulation exercises for diverse audiences. In support of the teaching and policy objectives of

the larger NDU community, the Gaming Center conducts exercises for the colleges and components of National Defense University, the interagency community, Office of the Secretary of Defense, Joint Staff, combatant commands, and Members of Congress.

Wargaming and the gaming of policy problems have been around a long time, and while their forms have changed with the problems of the day, the games' basic benefit remains the same: they provide a self-contained

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# Report Documentation Page

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analytical environment in which players explore the constraints that form current strategic problems, examine issues arising under them, and compare possible solutions. In short, political-military games allow players—policy-makers, civil servants, and warfighters—to examine their assumptions about a problem and its solutions. In the current strategic environment, this is a vital service, for an unexamined assumption can be a critical vulnerability.

This article considers the relationship between audience, objective, and game design while introducing the mission and activities of the NSGC. It begins by proposing a common definition of games, including wargames; identifies the constitutive elements that compose all games; and asserts the relevance of these elements to game design. It then explores how these principles of game design are evident in the exercises constructed by the Gaming Center and argues why such exercises are important to contemporary civilian and military decisionmakers.

### What Are Games?

At the most abstract level, all games—whether played with cards, at a computer, or in a military-political planning session—share a focus on strategic interaction under a series of specified constraints. They stipulate a set of “rules of the game” that describe a given analytical situation and demand that participants make choices about their best decisions subject to those constraints, often taking into account the likely responses of actual or implicit opponents. Beyond these shared elements, designers have developed a range of methods for transforming these analytical problems into exercises. The forms that these exercises take range from seminar discussions, to field events, to computer games. Exercises at the Gaming Center are mainly conducted as seminar-based problem environments—the structure best suited to participants’ needs and the problems being gamed.

The seminar games designed

and played in the NSGC often look much like a classroom, albeit one full of diverse and experienced students. In these games, also called *table top exercises* or *free form games*, a set of constraints that limit players’ choices and shape the strategic environment is written into a qualitative and descriptive scenario. Players are directed to react to challenges that arise under the scenario as play advances over moves.

Players gather around a table and are introduced to a problem situation, which game designers convey through such means as a background paper, simulated report of breaking news, or mock briefing. They are instructed to suggest solutions, debate alternatives, and finally settle on a recommended course of action. Typically, some kind of subsequent announcement, such as a simulated news report, will introduce new issues, advancing play to a new move in the game and the next stage in an unfolding situation. In so-called path games, events in later moves are contingent on players’ prior choices. Most often, however, moves reflect the advancement of time. By pressing players during discussion to address the implications of previous choices for

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remaining decisions and these decisions’ relative payoffs, designers can incorporate a sense of consequentiality to games that progress in a linear fashion.

Seminar exercises are now employed extensively for gaming political-military strategic dilemmas and are useful for audiences ranging from secondary school students to flag officers. They can be designed to educate players about a problem and the constraints shaping decisions about it, or they can facilitate expert discussion at a high level of sophistication. Seminar games can serve as an especially effective experiential learning tool, but they can also be used to gather highly

knowledgeable but diverse players in an environment promoting communication, information sharing, and cross-pollination of ideas.

### Elements of Games

Any exercise is shaped by a number of elements that influence its design and the form it ultimately takes: the aim, the audience, the level of analysis, and the problem situation being studied jointly guide the construction of an exercise. They determine the scenario crafted for a game and what the best form will be, whether a seminar exercise, field event, computer game, or formal model.

Two aims exist in varying degrees in all games: an *analytical* and an *educational* purpose. Some games focus almost exclusively on analyzing problem situations and weighing available choice-sets, while others are more educational, teaching about a situation or training responses to one often both aims are present. For example, the NSGC’s high-level participants frequently report finding these exercises useful not only for walking through a problem, but also for obtaining input from other senior players. Game design is closely related to the aim of the exercise. Where analytical needs drive development, the tendency is for the game to be specified as formally and parsimoniously as possible, giving

designers the greatest precision in deriving solution sets or collecting empirical data. Where educational aims predominate, an understanding of experiential learning and its role in training inform game design. Seminar games tend to do both: although they neither present nor are based on formal models, scenarios are constructed with enough attention to the abstract constraints and questions shaping a strategic situation that they are useful beyond simply dramatizing history or current events to players.

The audience is critical to the design of games; the experience and needs of participants greatly affect the



aim of the game and the form it should take. Moreover, players can be assets to each other. High-level participants may come to an event hoping to learn more about a subject, but typically they also bring considerable personal expertise, which is of interest to other partici-

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pants and which good game design can bring out. An advantage of NSGC seminar games is that they allow for a less-structured discussion than more strictly scripted exercises, making them an effective means of gathering and evaluating information. Where the audience is highly multidisciplinary, games may be designed to obtain and pool information in the most efficient manner.

Thus far in this article, the term *strategic* has been used in the theoretical game sense, meaning a choice situation in which an actor makes decisions seeking to maximize his benefits, subject to a set of constraints and typically anticipating other players' likely responses. In contrast, in the military-analytical context, *strategic* refers to a level of analysis, an issue that is also relevant

to game design. At the strategic level, a military planner considers military and political objectives and challenges at the national and international level. In this context, *strategic* is simply a higher level of aggregation than *operational* or *tactical* analyses. The more theoretical encompassing game sense of *strategic* is evident in all three military levels of analysis.

There is a tendency for *strategic* in the military-analytical sense to be at least partly defined by the potential solutions to a problem, such as the *DOD Dictionary of Military and Associated Terms*, which understands the *strategic level of war* as the "level . . . at which a nation . . . determines national or multinational (alliance or coalition) security objectives and . . . uses national resources to accomplish these objectives."

These national resources are generally understood to be the diplomatic, informational, military, and economic (DIME) means of influence a country or group of countries can bring to bear. Although there are real analytical difficulties with defining a problem by its presupposed solution, this approach does highlight the value in gaming strategic challenges. While it might seem that such a broad focus is difficult to encapsulate in a game because problems must be stated at such a high level of generality, it is an inescapable fact that most of today's political-military challenges play out at this level. The increasing political and military use of solutions employing a combination of DIME assets or demanding joint and interagency coordination point to why it is useful to evaluate these plans in the context of a game before trying them in the field.

As in any game, the problem situations considered in strategic exercises and presented to participants are jointly defined by the constraints elaborated in the game and the set of actors considered to be making decisions under

them. Constraints can be understood to be any factors that affect the choices of players or that otherwise set down in the rules of the game. They can be resource limitations players must take into account, geopolitical facts of life, domestic political processes, or coalitions that should be maintained. How precisely the constraints must be specified impacts the form of a game.

Actors can range from individuals to aggregate bodies such as countries or organizations. In exercises, actors are not necessarily exhaustively accounted for by the game participants, but rather are the agents present in the game scenario who are determined to be taking actions that influence the strategic environment. In many military exercises, players taking the perspective of U.S. actors are called the *blue* team and their opponents are the *red* team. In red teaming exercises, players take the perspective of U.S. adversaries to test American responses and policies. Other types of exercises have players taking both red and blue roles. In most NSGC seminar exercises, players are assigned roles as U.S. actors, whether they are individual decisionmakers or organizations, and focus on the blue team perspective of strategic challenges.

### Game Design

Game design begins with specifying the aim, audience, level of analysis, and problem situation and then formulating a structure for the game. Designers identify the constraints and actors, which define the choices players can make throughout. They then decide how many moves or decisions played will advance. In games, moves are synonymous with decisions; at the end of each period, at least implicitly, players must make a choice. Game aims, coupled with these factors, inform the game form selected, which is a major choice in the design process.

Once all the elements of a problem situation are determined, designers must craft an artificial environment in which these dynamics play out. Game

forms vary in terms of how precisely the number of players, constraints, and moves are specified. Computer simulations, on one hand, are extremely specific; there may be a large number of players and possible moves, and, in combination, they may constitute a large though finite number of choices. Likewise, actual field exercises tend to be constrained in terms of time; they operate in real-time, and the consequences of actions, while immediately apparent, are not easily speeded up. Games taking the form of seminar ex-

### seminar exercises take advantage of the strengths of a highly interdisciplinary audience

ercises, as those designed by the NSGC, build a rich contextual environment and typically use changes in time to advance play, so they are not restricted to executing the game in real-time. They are structured by the sets of actors and constraints that form the problem space in the game and that govern player choices throughout but can also state them more qualitatively and less precisely.

Seminar exercises relax some of the restrictions that structure other types of games, which offers both educational and analytical advantages (although greater scope comes at the cost of analytical precision). The exercises not only accommodate but also take advantage of the strengths of a highly interdisciplinary audience. They allow designers to build detailed scenarios with the understanding that different participants will draw information and conclusions from different parts of the scenario and introduce these elements into the discussion. They provide an effective environment for analyzing both coordination challenges and such problems as identifying constraints and their implications for different actors. Where more educational goals are intended, games can be designed to provide more comprehensive background and guided discussions and ac-

tive teaching to ensure that the desired concepts are conveyed.

### Exercises at NSGC

The Gaming Center comprises three divisions, which design and conduct strategic simulation exercises for rather diverse audiences, including NDU students, flag officers, senior executive branch officials and Members of Congress. The diversity of the participants, problems, and scenarios in Gaming Center exercises highlights the range and flexibility of the seminar game form. The three branches of the center are introduced below with a brief description of recent exercises that concretely illustrate the Center's work and how the main elements of games are instantiated in actual design choices. In particular, the influence of factors such as audience and problem space on the form of games at NSGC is examined.

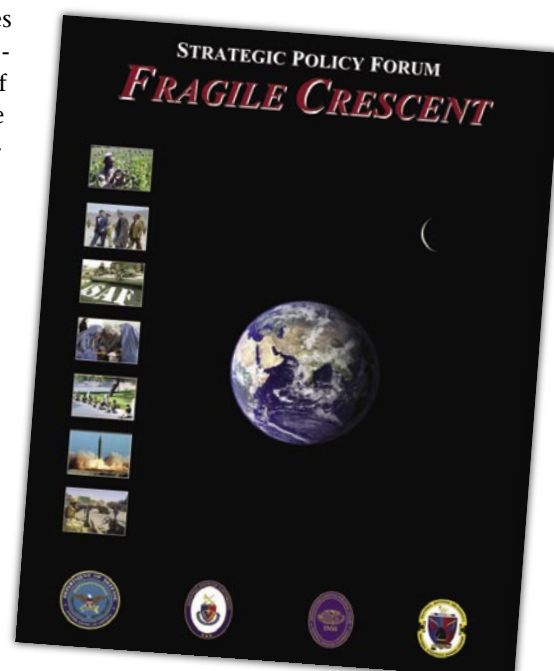
### Strategic Military and Academic Support Division

The Strategic Military and Academic Support Division provides gaming, exercise, and curriculum support to NDU colleges and components. Strategic-level seminar exercises form a core component of several classes at NDU, and the NSGC has developed an extensive repertoire of games on relevant issues. These games have an explicitly educational goal of prompting students to integrate and make active use of the information they master in individual classes and in their studies as a whole. The games must be designed not only to enhance participants' knowledge directly, but also to draw out that knowledge that their colleagues bring to the classroom from their career experience.

In the spring of 2005, the NSGC executed the year-end capstone exercise for the National War College's National Military Strategy course. The

game objective was to introduce students to the challenges of formulating security policy, given the diversity of existing U.S. military commitments and global security concerns. Students played the role of members of Federal departments represented on the National Security Council and were told that they had been appointed by the President to serve on a Policy Coordinating Committee (PCC) and make recommendations about several ongoing, simultaneous national security threats. Over the first 3 days, students discussed strategic options with regard to three states posing different threats. They were to consider logistic and resource constraints and political and military challenges. On the fourth day, the committee presented a briefing, making strategic prioritizations and recommendations to actual members of the National Security Council.

In the capstone exercise, the problem space was principally shaped by constraints such as the simultaneity of the problems, finite resources, the immediacy of threats, and the various nonproliferation and regional security challenges specific to each day's scenario. There were numerous relevant actors populating the problem space,



including adversarial states and transnational actors, other regional third party countries and organizations, and U.S. civilian and military actors, including the members of the PCC. The game, therefore, truly depicted strategic-level challenges. Designers used a variety of media to introduce scenarios, including video injects, on-line materials, and computer slides. The seminar format was especially effective because it allowed designers to link coherently the otherwise disparate problem scenarios and convey the game's focus on the multiple, conflicting priorities of an enormous battlespace.

Students can exploit several educational features of such exercises: applying knowledge gained from the course, learning from the experience their col-

### one of the most popular games posited a release of anthrax in the San Diego metropolitan area

leagues bring to the seminar table, and thinking through U.S. policy options, given the strategic constraints identified in the exercise. Many, moreover, will apply these insights directly as they return to duty following graduation.

#### Interagency Support—Security Strategy and Policy Division

The Gaming Center is also involved in designing and conducting exercises that support interagency planning and response to complex crises. The Security Strategy and Policy Division provides exercises for the executive branch's strategic decision-making community in the Washington area as well as the regional combatant command Joint Interagency Coordination Groups through the Interagency Transformation, Education, and After Action Review program. The strategic seminar game form is well suited to such issues; these games bring together a wide-ranging group from the interagency community, allowing participants to explore coordination needs and solutions and troubleshoot pro-

cedures through protracted discussion. In this way, exercises not only identify where better coordination would be desirable, but they also identify partner offices for players and point to assets not immediately apparent within the players' organizations.

A recent example of this work is a game focusing on government transition in Cuba that was conducted for the Department of State's Office of Coordination, Reconstruction and Development. The game sought to test, challenge, and evaluate current American policy and policymakers' assumptions about events following a posited political change in Cuba. Over

30 participants attended a 2-day, multistage game, which focused on the dynamic, strategic, political, and military changes in Cuba subsequent to a change in government. Participants included senior officials from the Departments of State, Treasury, Commerce, and Defense; the U.S. Agency for International Development; and congressional staff and local universities. The exercise concluded with a formal "hot wash" session in which players presented policy recommendations to a panel of experts simulating Cabinet-level decisionmakers. Players' highly positive evaluations of the exercise focused on its utility in highlighting coordination and planning needs. It helped identify a wider range of potential outcomes that would need to be planned for as well as variations in responses to the crisis, both Cuban and American.

#### Congressional Support—The Strategic Policy Forum

The Gaming Center is also home to the Strategic Policy Forum (SPF). Initiated by the Secretary of Defense, the forum conducts seminar exercises centered on international and homeland security issues for the legislative



branch, bringing together Members of Congress, senior executive branch officials, and military leaders for strategic-level crisis simulations. Designed to enhance understanding of crisis decisionmaking in an interagency setting, the forums allow exploration of emerging national security issues and the capabilities and limitations of instruments of national power in dealing with these challenges.

One of the most popular games, a bioterrorism exercise called *Scarlet Shield*, was revised and executed in early 2005 and illustrates the types of events SPF conducts. Participants included Senators and senior executive branch officials from the Departments of Defense, Homeland Security, and Health and Human Services. Deputy Secretary of Defense Paul Wolfowitz opened the exercise, which posited a release of anthrax in the San Diego metropolitan area.

As play advanced, participants were asked to make policy recommendations about dealing with the California attacks as further cases appeared in the Midwest and intelligence reports indicated the possibility of attacks in Washington, DC. Constraints such as the logistic exigencies of managing multiple dispersed incidents, dealing

with an unprecedented public health crisis on a number of fronts, and coordinating the work of several agencies and levels of government were built into the scenario. All of these constraints shaped the strategic environment in which players could make recommendations. A seminar game structure is useful for such policy problems because players must engage with the multiple demands and goals that exist simultaneously in any strategic scenario. Specialists tend to assign disproportionate importance to issues closest to their area of expertise, but a game setting requires them to identify the range of issues and constraints that concurrently shape a strategic environment and to articulate prioritizations and integrated solutions. To foster open discussion, SPF exercises are conducted as nonattribution events.

On occasion, members of Congress have made public comments about the utility of the games. Their feedback and press releases note that exercises can highlight previously unseen dimensions to problems, assist coordination between agencies, and help identify and explore potential consequences. Members of Congress have specifically attributed several of these benefits to SPF events. For example, Representative Rick Larsen (D-WA) observed, "In any national security crisis, dozens of agencies have to make quick, coordinated decisions. Today's crisis simulation al-

lowed me to better understand that decisionmaking process and to explore response actions and consequences." Representative Frank Lucas (R-OK) asserted, "these simulations are invaluable to helping Members of Congress see the big picture of our Nation's defense and economy after another possible terrorist attack. . . . We can use that knowledge when we're making decisions on what resources are needed in defense of our homeland." The emphasis on the coor-

### **a useful analytical environment in which to identify and weigh policy options and needs is the goal of good game design**

ordination benefits is clear, but the utility of exercises as an environment in which to brainstorm policy solutions, solicit high-level expert feedback, and test notional solutions competitively is also implied.

The seminar discussion form of the exercises provides the structure that facilitates these outcomes; clearly crafted scenarios, rich in contextual detail, but not so overworked as to make scenario-events seem improbable, are months in the making in the SPF. But cleanly constructed scenarios, structured by sets of pre-identified constraints and game goals and augmented by carefully researched detail, create an environment for discussion that facilitates not only learning on the part of

participants but also constitutes a useful analytical environment in which to identify and weigh policy options and needs. This is the goal of good game design.

Game design that reflects the interplay between such elements as aims, audience, and problem situation is vital to determining how useful games are to participants. For the participants for whom the NSGC builds exercises (often diverse and experienced players) and the situations that are being simulated (complex political-military problems) the strategic seminar exercises constructed by the Gaming Center seek to match form to needs. They produce tightly crafted but flexible scenarios, describing the constraints and actors that constitute a problem situation. Participants assert that these exercises constitute helpful policy tools.

Current discussions of warfare recognize a dynamic international environment, featuring a battlespace crossing global geographic and cultural boundaries and demanding integrated operations with new partners. Policymakers and warfighters are creating new solutions to new problems, often on the fly and with good results. These problems are not entirely unforeseeable, however. The opportunity to gather in a seminar room and evaluate tomorrow's strategic challenges, which sprawl across borders, issues, areas, and peoples, enables proactive decision-making. It helps individuals and organizations identify solutions, think through consequences, and head off problems before they become crises.

Quality game design and the relevance of the problem being gamed determine how useful exercises are to participants. The National Strategic Gaming Center unites both in the exercises it builds and executes, underpinning its standing as a premier national gaming center. **JFQ**

High school students in the National Youth Leadership Forum engage in simulations at the Gaming Center



National Strategic Gaming Center