

SIMULATION AT THE SECRET SERVICE

As Real As It Gets

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Prologue

September 11, 2001. I arrived at Secret Service Headquarters in downtown Washington, D.C., around 7:45 a.m. EDT. I joined several other agents in a conference room for a board meeting. One of the last to arrive announced that a plane had just crashed into the World Trade Center. Across from me sat a lady who was formerly the special agent in charge of the White House. She pointed at me and said, “You know all about that.” As we gathered up our personal effects, I explained that the training center had been crashing planes into the White House since 1998 on a simulation program provided by the military. It was done to test the security responses of the various agencies that interact to provide security and support to the White House.

Training Via Simulation

I get energized about simulations. They represent one of the very best ways to train when the actual training ground is not available for a variety of reasons. A simulation gives you the chance to train multiple times with minimal set-up time. Trainees have said that

the ability to conduct back-to-back exercises is a great luxury. The lessons learned are not lost by hours of delay as the next live scenario is put in place. You can train with one or many and have the simulation play the additional roles. The training is never canceled because of bad weather or because the training ground is under repair or is being used by someone else. As long as there are workstations available, simulations are available on demand. The flexibility available to training with a simulation allows for quick changes. If trainees fail early in an exercise, the simulation can be quickly reset, remediation offered, and the same simulation generated immediately.

Variety is another advantage of simulation. Any training facility for live exercises is limited by what exists there. Even the most inventive people are limited by the space and terrain available in the real world. In a simulation, you can expand those possibilities; you can add or remove buildings, roads, people, vehicles, trees, bushes, and other obstacles.

I had the pleasure of working with a really great group of people at the Secret Service James J. Rowley Training Center's Security Incident Modeling Lab (SIMLAB). I was also in charge of the program in its early stages. The Service had a very good piece of analytical software for simulation called the Joint Conflict and Tactical Simulation (JCATS) built by the Lawrence Livermore Lab. The Joint Chiefs of Staff Joint War Fighting Center at Fort Monroe, Virginia, distributed the software to the Secret Service. This is an outstanding example of cooperation between civilian and military sides of government. The program was dynamite at analysis. One of the only drawbacks was the screen image. The simple line drawing representations of people, vehicles, buildings, vegetation, and so forth did not provide an appealing image to the participants and was also not very intuitive for workstation operators.

However, this simulation provided that all-important commodity: a place to practice our security plan when the actual facility was not available. As you can imagine, the White House is a high-use facility. When not available for official functions, it is usually scheduled for major repairs, renovations, or sometimes just rou-

tine maintenance. It is hard to squeeze in a live security simulation with all that goes on at the White House. Also, live simulations are very manpower intensive. Can you imagine getting all of the following scheduled to pull this off: the White House Usher's Office, White House Staff, Military Aids Office, U.S. Marine Corps, U.S. Air Force, Metropolitan Fire Department and Police Department, Federal Aviation Administration, Old Executive Office Building Staff, Treasury Department, National Park Service, Secret Service's Washington Field Office, Presidential Protection Division, Vice-Presidential Protection Division, Assistant Director for the White House, White House Uniformed Division, Technical Security Division, Intelligence Division, and the training coordinators and instructors who deal with all of the above! This would require days of scheduling the special equipment, the manpower, the site, and notices to the facility that an exercise was being conducted. Unlike simulations, with live training held at the training facility, you have to be careful not to break anything and you must avoid certain areas entirely, all of which detract from the training scenario. The idea of having a place to run a simulation, observe the action on the screen, and implement what actions you would perform as you act out your assigned role is a great asset to providing protection to the president. The actions can then be programmed into the simulation to see how the resulting reactions to the provided stimulus conclude.

Can you imagine the reaction, in today's media-frenzied climate, if in downtown D.C. a live exercise was conducted on the White House grounds? Even if it was announced ahead of time, switchboards would be overwhelmed, a small panic would ensue, and, worst of all, elements of the security plan would be displayed for the public and the press to observe. Showing your security plan and reactions to certain scenarios trains not only those participating, but also those observing. Like all knowledge, it can be used for good or evil purposes. The risk of teaching a potential terrorist anything about presidential security is not one that anyone is willing to take.

Can you imagine really crashing planes into buildings? The other very important thing that simulations allow you to do is practice

something that you will never be able to do live in the real world (at least not without tremendous expense and, even then, only once) and (and this is a very important and) also allow you to practice scenarios that can be attempted by a terrorist or other deranged individual.

Just consider the logistics of obtaining a plane and then getting equipment to launch it into a particular building you want to “practice” on. It is extremely hard to disguise a catapult capable of launching a plane into a building. The element of surprise is lost. With a simulation, the trainee approaches the scenario with a mind that is stimulated by the reality of the simulation and not the massive preparation that was observed on the way to training that day. And who gets to clean up all this mess? I don’t think it has taken more than five minutes to clean up the classroom after running multiple simulations over three or four hours.

The Power of Practice

“Because knowledge deteriorates rapidly unless it is used constantly, maintaining within an organization an activity that is used only intermittently guarantees incompetence.”¹

During any catastrophic event, a fair amount of time is spent getting organized, directing resources, and solving problems on the fly. But many parts of any response are similar for a catastrophe. The basics of responding to a fire, a building collapse, or a plane crash are the same; the on-scene assessment by first responders is essential to determining how much and what kind of help is needed. The lesson most often learned in the simulations is that communication is the weakest point. Resolution of any crisis rests with the timely communication of what is going on, where it is happening, and who or what is needed to help resolve the problem. This vital information must be communicated to the command structure, who can best use the information to subsequently obtain the assets essential

for addressing the immediate crisis needs. The issues “why and how” are to be addressed only after lives are saved. Practice of these responses is valuable because all responses to a crisis have multiple actions. Organization, the accurate relay of information, training in the particular applicable skill, and mental preparation save time and provide confidence for all the participants to deliver their best efforts. Yes, there will be a lot of adapting and overcoming of challenges during the crisis but, as Louis Pasteur commented while looking for various answers, “Chance favors the prepared mind.”²

I think simulation training creates a kind of situational awareness so that when something resembling the simulation actually happens, your brain recognizes the issue and allows you to perform more efficiently because you have practiced. It also allows you to focus on a particular part of a plan that you have experienced. The situation may not flow exactly as formulated, but the familiar is always easier to accept than that which is completely strange to you. How does simulation create familiarity? Practice, practice, practice!

The Value of Analysis

“Nothing is less productive than to make more efficient what should not be done at all.”³

One of the other great things about a good simulation is that it runs in real time. The role players sometimes find that their responses are strategically correct, but that their timing and distance create a chance for failure. For example, if the role players issued orders or said that a given task could be performed in a certain amount of time, the computer analyzes the data and measures the tasks in real time—sometimes showing that accomplishing a given task takes longer than foreseen. The sooner you know this, of course, the better.

An analogy that comes to mind is Superman leaping tall buildings in a single bound. In effect, the computer shows that a considerable run must precede the leap so that enough momentum is

provided to bound over the building. The time required for the run turns out to be the crucial part of the analysis. Time and distance are things that are sometimes missed in the “I can do this” thought process. When faced with a task, a hard-charging and well-motivated Secret Service employee will tell you that he or she can/will accomplish it. The Secret Service is replete with physically fit, type A personalities who will get the job done no matter what. But they are not supermen and superwomen, and the constraints of earthbound human beings are made evident in an accurate simulation.

The after-action analysis of the training by the SIMLAB personnel yields helpful discoveries. For example, while reviewing a day’s training on the captured statistics, it revealed that some units in the exercise had a higher failure rate than others. Through logical perusal of the variables, it appears the sole difference was weapon and ammunition choice. In this case, it was poorly suited for the express mission. This feedback was provided at the next day’s training. It was determined that changing ammunition was not a real consideration due to a superceding policy regarding that weapon and ammo choice. Changing to another type of weapon was the only remaining possibility. In fact, changing the weapon type did result in the improved performance of this unit. As a result of this analysis and running back-to-back training operation simulations with the changed type of weapon, a change in policy was recommended.

Gaming

“I see you stand like greyhounds in the slips,
Straining upon the start. The game’s afoot!
Follow your spirit! And upon this charge . . .”⁴

The Secret Service applied software intended for command-and-control exercises that encompassed the world and adapted it to the individual agent, civilian, fireman, staff member, and assassin. However, as good as the simulation was, the participants cried out

for more sophisticated on-screen images similar to the various games they played or observed their kids playing.

One way to upgrade the sophistication level is to adapt common off-the-shelf (COTS) software to a training need. At first, SIMLAB used the game DOOM® as a stress relief tool. DOOM allowed the SIMLAB employees to have a virtual and sometimes literal “scream” to release stress produced from the tedium of programming and testing on the Joint Conflict and Tactical Simulation. The Marine Corps at Quantico once considered using DOOM as a training aid for a rifle squad. After a few games, it became apparent that teamwork produced more success than did individual effort.

We introduced DOOM to some of the special tactics units so that they could improve their teamwork. The students liked the idea of training on the game; it allowed all-weather training opportunities and compressed training time. They also liked the better on-screen image displayed by the COTS game that allowed them to feel more involved in the action.

Common off-the-shelf software also has a marked price advantage. For \$20 to \$40 per workstation, you have a game that can be run as a simulation. I have heard many in the training field say that they do not really want custom-built training, but instead want the ability to customize the training. Using a game for a simulation allows you to make it your own.

Progressively, other games such as Rainbow Six® and Flashpoint® were adapted to training for different reasons. Initially Rainbow Six was effective because it closely resembled the special operations units and their equipment. Two such units are the Counter Assault Team (CAT) and the Emergency Response Team (ERT). The software allowed for tactical training and highly disciplined tactics, so highly disciplined that team members must have full faith and confidence in the execution of a tactic even though they begin the exercise unseen by each other and progress through the simulation by only verbally confirming their progress. At a common

point, they will emerge to reunite the team for the successful completion of their mission.

Rainbow Six

The Secret Service's experience with Rainbow Six is probably one common to gamers everywhere. In searching for the newest and latest modifications to play this PC-based game, we discovered these wonderful entities called communities. Groups of fellow gamers, whose hobby it is to produce enhancements to the game, post their results to the Internet for the community of people playing Rainbow Six to use. For the most part, these modifications or modules (mods in the gamer vernacular) are free to anyone who wishes to use them. The Training Center obtained several mods this way. Of course, we used a clandestine gamer tag (pseudonym) email address without the usual easily identified government address for contact with the community. I was somewhat shocked when a pretty accurate depiction of Air Force One came from a member of the community for Rainbow Six. Shortly after this came a Presidential limousine. The image was sufficient for use in the training scenario, even though not accurate to every detail. Therefore, it appeared as if other modifications needed for future games could be had for the asking.

Training by the special operations teams takes place in a specially constructed classroom. Workstations are isolated by partitions. Participants are required to communicate by radio just as in the real world. If phone calls have to be relayed by command personnel, phones are available and role players answer and respond. The opposing force is in another classroom nearby. The two cannot communicate. The only thing the participants know about each other is what they see on the PC screen as the scenario plays out. The training group then debriefs the exercise. For the most part, the self-critique by the special operations covers any training points that develop from the exercise. Occasionally the observing special ops instructors offer additional information.

On the first exercises performed with Rainbow Six, the trainees complained that the opposing forces were playing the game too well and felt that their advanced knowledge of Secret Service special unit procedures and training had affected the outcome of the game. But SIMLAB had planned ahead. The new opposing force was soon introduced—four clerical staff on the training center campus.

Flashpoint

Flashpoint is another COTS game that has a larger play box (the area in which the game takes place) than Rainbow Six. The play box affects what can be modified. For instance, Rainbow Six was pretty well limited to a few buildings and little or no space to drive cars. It was impossible to fly a plane due to these limitations. Typically, the Secret Service scenario includes planes, helicopters, cars, and people distributed over several miles of distance. Flashpoint allowed for the use of these larger scale operations and did so with a good mix of civilians and civilian vehicles. Limitations are the result of programming the scenery, action, and detail and need to be traded off with the needs of more space in which to run the simulation.

One of the things I observed during these training simulations was that the same multi-tasking that goes on in real life occurs in the simulation. There may be a different tactile feel at the fingertips (no weapon in hand), but the same stressors resulting from visual, auditory (both from the PC and walkie talkie), and physical coordination stimulus occurs at the PC. Voices tense up as they pass information to a team member over the radio. Radio traffic is garbled and has to be repeated. Descriptions are mangled. Directions are confused. All of this because the simulation proceeds in real time toward its programmed outcome and can be interrupted only by those who came to practice that day. In other words, the solution provided by the trainees working in concert brings the problem scenario programmed into the PC to a successful conclusion. Of course, an improperly applied strategy would have the opposite effect. The other thing that I observed is the value of the self-critique.

It is unusual if the special operations teams do not know the cause of problems that come up during the exercise.

The Value of Simulations

Like all good training, an evaluation of the process and exercise is mandatory. This has been overwhelmingly positive. Trainees like the chance to train multiple times on the same exercise, the chance to freelance from established plans to see whether a “new idea” will work. Most consider the simulation to be training with a very high value for job performance. Last, the trainees are required to give a brief description of a scenario that they would like to see portrayed in a future simulation. This comes from the knowledge that employees talk about plans, policies, and possibilities with co-workers as they socialize at work and converts that critical thinking to something more tangible. The trainee suggestions are then scanned for similarities. Sometimes the suggestions are entered as scenarios just as provided, while other suggestions are combined to make a scenario. Trainees like it when they recognize a simulation as something they suggested. It reinforces the idea that their thoughts are valuable.

Everyone dealing with training and new technology has experienced the need to sell a program. To find that instrument of change that can lead the rest of the agency or company to use and eventually embrace the new technology to better train for their jobs is important. In retrospect, SIMLAB found a leader at the grassroots level. The special operations units are admired and respected as a group because they are fitter, train more often, and have the latest in gear for performing their jobs. They are an elite group. As the special operations groups found that their military counterparts used similar software, and when possible did not launch an operation without a chance to have it simulated, they requested more and more time in SIMLAB. The experience of the special operations units with Joint Conflict and Tactical Simulation had produced pent-up energy for a “3-D” simulation and the COTS games took

advantage of that desire to allow participation via a more visually appealing simulation. The special ops teams requested training time split between the analytical simulation provided by JCATS and the tactical simulation provided in a COTS game. They determined there was value in testing a plan in a very accurate simulation and practicing a successful plan in a reasonably accurate game. As they practiced more and more, the word began to spread. More calls came in.

Now there are exercises being conducted that include multiple units of the Secret Service, various command centers, and individuals. Some of the exercise is displayed on the Joint Conflict and Tactical Simulation, while other parts are distributed on Flashpoint for direct action by individual team members. The Joint Conflict and Tactical Simulation handles things like alarms, FAA radar, and threats that are considered at too great a distance to work in Flashpoint. Flashpoint handles the people on the ground taking action on observed threats or reacting to information communicated through the command centers. The respective programs make up for the inefficiency of the other. New employees practice their security planning skills on a simulation. After all have completed their work, the group critiques one another and votes on which plan appears best for running as a simulation in JCATS. Not only do you write the recipe but you bake the cake.

Conclusion

“Imagination is more important than knowledge.
Knowledge is limited. Imagination encircles the
world.”⁵

One of the most exciting things to come out of simulation labs is the environment that it creates where you have permission to fail and to bring forth your ideas for consideration. The lab provides an environment that allows for discovery. Some parts of the simulation

training have negative feedback portions—you do get killed. The more I watch the training taking place during the simulations, the more I realize that the trainee is having what educators desire students to have—that “aha!” moment of discovery. Only instead of “aha!” it may be “oops!” or some reasonable facsimile of that expression. I believe that “aha!” and “oops!” are really the opposite sides of the same coin and that this chance of discovery is so important for the critical thinking that is required for the protection of the President. If technology is adapted to the terrorist cause, then critical thinking plays an important part in countering that threat.

One of the things emphasized in these training exercises is critical thinking. The world is constantly changing. Unfortunately, the ways to wreak havoc, maim, and destroy march in unison with other change. For instance, the advent of the digital clock allowed for time bombs with a twenty-four-hour timer rather than a twelve-hour timer; the micro chip allowed for clocks with programmable settings that made possible time bombs that can be activated weeks, months, or years later. It makes you shudder to think what technology will be maligned to add to the terrorist toolbox.

I recently read a book by Bill Bryson titled, *A Short History of Nearly Everything*, where the author gives a short (thankfully) explanation of who discovered what in our world. He answers questions such as how far away is the sun; how much does the earth weigh; where did earth come from . . . you get the picture. I observed that very often the answer to those questions was found by accident as the scientist (often just a hobbyist) was looking for the solution to some other mind-boggling problem. As Secret Service personnel consider the intelligence from sources around the world and sometimes prophetic works of fiction for what the future may hold, the lab provides that experimental place where knowledge is discovered among the everyday tasks performed on the stage called simulation. The simulations allow them to let their respective fertile minds collectively and independently pursue such things as crashing planes into the White House. Simulations are where ideas come to life.

Notes

1. Rosenstein, B. (2002, July 5). Scandals nothing new to business guru: An interview by Bruce Rosenstein. *USA Today*. Available: www.usatoday.com/money/general/2002/07/05/2002-07-05-drucker.htm
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4. Shakespeare, W. (1994). *Complete Works of William Shakespeare*. Glasgow, UK: HarperCollins. p. 602.
5. Viereck, G.S. (1929, October 26). What life means to Einstein: An interview by George Sylvester Viereck. *The Saturday Evening Post*.