Appendix G. Designing Successful Exercises

The material in this section is adapted from ARECC EC003, Learning Unit 7. The learning unit is based in part on a QST article by George Washburn, WA6YYM, District Emergency Coordinator and Chief Radio Officer of Santa Clara County, California.

Introduction

Drills, exercises, tests. By any name, periodic exercises are used to evaluate the effectiveness of training and plans just as classroom tests are used to test the effectiveness of teaching. Exercises are particularly important tools used to measure the readiness of trained organizations such as military units, public safety agencies or ARES/RACES groups. They provide low risk-if not low stress-opportunities for the leadership to determine what works and what needs further development, and for participants to sharpen their communication skills. This is why the ARRL strongly recommends participation in its annual Simulated Emergency Test (SET).

However, exercises are only valuable if three conditions are met:

1. The goals of the exercise must be clearly articulated.
2. The correct type of exercise must be chosen and designed.
3. Feedback on exercise performance must be promptly given to all participants.

Exercise Goals

To be meaningful, exercises must have clearly defined goals. These may include:

- Introducing new procedures.
- Stressing a particular skill or network element.
- Re-testing some aspect of a prior exercise to measure any improvement in performance.
- End-to-end testing of a network system.
- Total system response to a given situation.

Choosing the Type of Exercise

There are three types of exercises most used by ARES groups: full-scale, tabletop, and functional. Which one you choose depends on your goals. Full-scale exercises can help simulate the stresses that occur to network operations during a disaster. Tabletop and Functional exercises are good alternatives to the full-scale exercise for the introduction of new procedures and systems.

Your first few exercises should never be full-scale. Begin with smaller exercises that focus on individual elements of the response plan first. Once each element has been tested, put it all together in a full-scale exercise.

Full-Scale - SETs may be full-scale exercises with operators responding to EOCs and field locations. They're fun, complex and prone to failure, especially when a new procedure or system is introduced. While identifying areas that need improvement is a valuable part of any exercise, it's equally important that volunteer responders have a positive experience. Consider a full- scale exercise only when individual systems have been adequately tested on a smaller scale.

Tabletop - Tabletop exercises are especially valuable for introducing new procedures or techniques in a classroom setting. Their primary limitation is that fewer participants can be involved.

Tabletop exercises are essentially role-playing meetings. With one person serving as moderator, participants representing various locations or functions review their roles or respond to questions from other participants. No timeline is required although the discussion should follow a typical sequence of events. Tabletops allow the participants the luxury of interrupting the exercise to discuss any aspect of the drill. They are the best way to introduce new procedures because the feedback is immediate and heard by all present. Tabletops should be attended by ARES/RACES leadership personnel who can take the lessons learned back to their membership for training prior to full- scale exercises.

Functional - Functional exercises may utilize the same facilities as full- scale drills, whether physical facilities such as EOCs or radio nets are used. Most participants perform their typical roles while a smaller group serves as simulators. Functional exercises can also be run with all participants communicating from their homes, simply adopting the roles they would have in a full-scale drill.

Like the tabletop, a net control station can moderate a functional exercise. Functional exercises held on the air can be scaled to allow as many or as few participants as the exercise designers choose, but all ARES/RACES personnel can monitor the exercise for its training value, and to provide a post-exercise critique.

Consider tabletop or functional exercises as mid-term events to be held prior to the annual full-scale SET. They provide low-stress training opportunities which can be adjusted as they progress, something which is nearly impossible during full-scale exercises.

Design Elements

The success of any exercise is directly related to the amount and quality of planning that goes into it. Keeping in mind the goals of the exercise, a number of exercise design elements need to be considered.

Scenario evolution - Each simulation needs a starting point, one or more tests or challenges in succession, and an ending point. Think through your simulated situation in detail, but don't forget the goal of your exercise.

This is an example of a complex Full Scale hurricane scenario.

- Declaration of a hurricane warning (starting point)
- Pre-landfall preparation (planning test)
- Evacuation monitoring and reports (network test)
- Initial damage reports (network test)
- Shelter overload and supply shortages (network test)
- Communication failure at local hospital (challenge)
- Eye of storm passes over (coffee-break!)
- Further damage reports (network test)
- Health and Welfare traffic increases (network test)
- More shelters are opened for homeless (network test, asset challenge)
- National Guard moves in, requests communication support (asset challenge)
- And so it goes until demobilization occurs...

For each of these elements you will have to create in advance an appropriate number of messages and some background information to create a realistic situation. Since this is usually a "compressed time" exercise, you won't need to generate as many as might really occur. Depending on your goals, you might need to throw a few "monkey wrenches" into the works, such as a repeater failure, an EOC flooding out, power failures, and so on to test back up systems and team flexibility. If you do this, however, be sure to warn participants ahead of time to expect some challenges, without giving away the actual problems. Surprises add stress, and this might not be desirable in a situation where they are not as ready to handle it as they would be during an actual disaster.

Network Design - Consider the communication networks you wish to test. Will it be only one or two, or every network in your emergency response plan? For instance, if you are testing a communication failure between a triage center and a hospital, you might have both a secure (digital mode) and tactical (voice mode) net. Be sure you have considered all possible communication paths that might be needed for the scenario to work as intended.

Asset Assignment - Among your assets are your team members and available equipment, as well as operating locations and facilities. Design the exercise with both in mind. It is OK to design an exercise that overwhelms your assets, but make sure that your stated goal reflects that.

Unless you are planning the full-scale simulation of a complete disaster response, make sure everyone knows where they are supposed to be and when, and what equipment they will need. Not every exercise needs to be a full simulation of emergency conditions.

Pre-exercise Communication - For your exercise to happen as you plan it, the participants and others who will be affected must be notified well in advance.

1. Develop a written in-house plan with full details of the event for internal use by planners. Create an outline listing the date and time, goals, scenario, responder locations, message types, net structure and exercise evaluation criteria.
2. From the full outline, write an announcement of the exercise with the "who, what, when, where and why" questions answered. List specific equipment participants will require. Be sure to indicate the level of challenge and stress to be encountered so that participants can be mentally prepared. Send this to all participants or to local ECs to be forwarded to their local members.

Develop a total exercise package for use by the simulators that includes a complete scenario. It should include:

- Detailed description of the simulated incident.
- List of conditions affecting field responders, such as whether their response will be impeded by simulated events.
- Timeline with start and stop times, timing of messages to be sent or generated.
- Radio plan with the function of each net, primary and alternate net frequencies
- and CTCSS tones.
- Instructions for field responders.
- Supply of appropriate forms.

Exercise Feedback

Tabletop exercises provide immediate feedback to all participants. On-the-air functional exercises can be immediately followed by critiques. Full-scale exercises, on the other hand, are usually of such a large scope that the demobilization process precludes an immediate critique. Also, SETs have reporting requirements that contribute to delays in providing feedback.

Letting exercise participants know how they did is important. Doing it in a timely manner and in a positive way are equally important. Prior to the exercise, determine what facilities exist to communicate feedback to all participants.

http://www.gaares.org/ARESPlan/appendix_g_designing_successful_exercises.html