

T-REX 2021 Exercise Overview

Special Consideration: T-REX exercises provide an opportunity for radio operators to test the skills and equipment they practice with on a regular basis. Radio operators develop and practice tactics, techniques, procedures, and with gear throughout the year. While everyone is invited to implement their own disaster preparedness plans and participate, this is not designed to be a training environment for participants who have no communications experience prior to the exercise. Become familiar and proficient with your gear prior to exercises, and participate in practice nets. Then test yourself during training exercises like T-REX.

INTENT: Provide a realistic scenario-based training opportunity for practicing personal, group, and organizational disaster plans within a simulated cyber attack resulting in a grid-down environment. Special emphasis is placed on non-conventional communications, testing the ability of radio operators to implement and practice using the AmRRON Signals Operating Instructions (SOI) to pass and receive information related to the effects of the cyber attack.

OBJECTIVE: For each radio operator to practice with his/her communications equipment under simulated austere conditions, to include: off-grid power; the use of the Signals Operating Instructions, with emphasis on specific portions of the SOI; generate Status Reports and successfully submit their STATREPs during scheduled nets; Pass, receive and/or relay pre-developed traffic exercise traffic.

CONCEPT of EXERCISE:

Overall. Participants across the country simulate a total grid down situation (no cell phones, internet, commercial power, etc.). To learn the size, scope, and effects of the grid failure, the participants use unconventional communications to receive and send information, and practice using their equipment, their skills, and the Signals Operating Instructions.

Timeline. The exercise will begin at 19:00hrs Zulu (Noon Pacific) on Friday, August 6th, and will end at 1900hrs Zulu (Noon Pacific) on Sunday, August 8th.

Monday	Wednesday	Thursday	Friday	Saturday	Sunday
			1900z/ Noon Pacific	All day	1900z/ Noon Pacific

Red: Indicates simulated grid-down time period and duration of exercise

Scenario. On Monday, August 2nd, mainstream media begins reporting cyber attacks against major telecommunications, electrical power grid, and economic sectors.

Wednesday, cyber warfare intelligence reports indicate worldwide infections of critical infrastructure with time-delay ransomware 'worms'.

Governments, NGOs, and private critical infrastructure organizations around the world receive letters indicating the 'release' of the worms at midnight on Saturday, August 7th, Greenwich Mean Time, unless a ransom of "one trillion US dollars" is paid via crypto currency by the deadline.

World leaders hold an emergency virtual summit with their cyber security experts to explore options. World Economic Forum (WEF), which anticipated such an attack, is consulted, playing a key role in the summit. After reviewing previous WEF cyber warfare modeling exercises, the nations collectively decide the following:

- Temporary global 'quarantine' of all internet-capable devices. Deemed as necessary to isolate the ransomware worms, preventing them from spreading to otherwise healthy systems.
- Passing emergency protocols requiring internet service providers, routing systems, and servers to shut down until a solution can be found.
- International agreement by UN, EU, NATO nations to require shutdown of all internet access at 19:00 hours, Greenwich Mean Time (aka. UTC or Zulu)

Responsible Party. Unknown. Suspected to be a state actor posing as a criminal hacker syndicate. Indicators point to Russia, China, Iran, and North Korea, but forensics experts believe this is an intentional deception tactic by the responsible party to confuse and mislead investigators.

OPERATIONS

AmRRON Operations:

- The AmRRON SOI (Signals Operating Instructions) will be the primary guide for conducting emergency communications, using the Operational Net Schedule (Pages 12 and 13).
Note: The current SOI version is V4.2 (prior versions are obsolete)
- Modifications to the net schedule will be made during the exercise, announced over the nets. Familiarize yourself with the Variable Net Schedule (Section 1.2 -- Page 14).
- Emphasis for most participants will be placed on two areas of the SOI (Signals Operating Instructions):
 1. Variable Net Schedule (Section 1.2 -- Page 14)
 2. Abbreviated STATREP (Section 6.3.1 -- Page 37)

Non-AmRRON Participants:

- Encouraged to implement your personal, family, group, or organization communications plan and pass information (Status Reports, etc.)
- If you do not have an AmRRON Corps member in your family/group, then designate a liaison to participate in AmRRON nets to receive news, information, and reports from across the nation and your region (and from your local AmRRON nets, if you have them operating in your area).

General T-Rex Participation Guidance:

1. Participate in the regularly-scheduled AmRRON nets the week of the exercise (week of August 2nd) to test your radios and other equipment, and receive exercise-related radio traffic.
2. Review your SOI. Practice producing a Status Report (STATREP), both regular (non-abbreviated), as well as an abbreviated STATREP. You are simulating a grid-down situation, and your STATREP should reflect that.
3. Unless you are an Initiating Station (previously coordinated), only produce traffic based on requests by Net Control Stations.
4. Official T-REX exercise traffic such as Situation Reports, etc. will be pre-numbered and tracked. Any non-official exercise traffic (other than what is requested by Net Control Stations) will be disregarded).

What to do and what to expect:

1. Turn off your internet, cell phones, and (if practical) your electric power. Or leave your refrigerator and freezer plugged in and turn everything else off.
2. Tune in to the nets according to the SOI Operational Net Schedule.
3. Fill out a Status Report (STATREP) for your location. If you don't know how to use the digital mode AmRRON custom forms, then fill it out on a notepad and be prepared to transmit your STATREP during voice nets, if able.
4. What to expect from NCS:
 - a) **IES** (Initial Event Summary). This is a brief report produced by Net Control Stations (NCSs) stating what he/she knows about the situation. An IES should also include instructions for future operations -- guidance for participants; when the next net is scheduled to take place; action items (if any), etc..
 - b) **Issuance of PIRs** (Priority Intelligence Requirements). A 'PIR' is information needed by decision makers -- community leaders and disaster relief coordinators, etc. These can and do change during real-world emergencies. The first PIR will be a request for STATREPs, to provide a snapshot of the size/scope of the affected areas across the country. In this scenario, the effects are global.
 - c) **Announcement of modification to AmRRON Nets.** We are simulating a long-term grid down event (days or even weeks). In order to help operators ration their alternative power resources (fuel, solar

battery storage, etc.) we will be adjusting the the net schedules, using section 1.2 in the SOI. So... Pay attention.

- d) **Request for traffic.** NCSs should request traffic other than the STATREPS (which all participants are encouraged to submit, upon request). We have pre-coordinated with AmRRON members who have volunteered as 'Initiating Stations', who we will have issued exercise traffic prior to the exercise. The traffic is controlled and is accompanied by an exercise identifier. If you have not been issued 'pre-loaded' traffic prior to the exercise, then this request for traffic should be disregarded.
- e) Sending traffic. NCSs will disseminate distributed traffic from AmRRON, such as SITREPS, AmRRON Intelligence Briefs, or other official AmRRON traffic, including aggregate reports based on submitted STATREPs.

5. IMPORTANT: When relaying exercise traffic to your local or regional nets, be sure to begin and end the traffic with *"Exercise. Exercise. This message traffic is part of the T-REX Training Exercise."*

6. Only transmit if asked to by NCS, or if you have traffic to pass. Follow instruction of the NCS. During a real-world emergency, it may not be practical to take check-ins for the sake of taking check ins. Keep the frequency clear for stations passing traffic. Your STATREP is traffic, but should only be passed when NCS asks for it.

7. Stations missing a significant portion of net traffic (for example, receiving less than half of a report), should avoid tying up NCS with multiple multiple repeated requests for traffic. Be patient, and request traffic from other stations who can relay it to you after the net closes. NCSs will have their hands full.

8. If you have adequate power to remain on the air after nets, please stay on the air to relay traffic to others who may not have had a good receive path from NCS.

9. The Persistent Presence Nets will be active for stations with adequate off-grid power. Take advantage of this.

10. Move off frequency. If you engage in a long QSO with another station or if you are working with a single station to pass traffic, coordinate with them to move off the main AmRRON frequency. Go up or down 5 or 10 kHz.

If you have traffic to relay to (or through) another specific station other than Net Control, coordinate with each other and move to another frequency. Net Control Stations may guide you to do this.

MORE T-REX guidance and updates will be posted in the coming days.
Stay tuned!