State – Wide Communications Exercise

Madison County Emergency Management Agency

STR

Strategic Technology Reserves

After-Action Report/Improvement Plan

October 20-21, 2015

The After-Action Report/Improvement Plan (AAR/IP) aligns exercise objectives with preparedness doctrine to include the National Preparedness Goal and related frameworks and guidance. Exercise information required for preparedness reporting and trend analysis is included.

Program Management
Improvement Planning
Design and Development
Exercise Cycle
Evaluation
Conduct

Exercise Name	State-Wide Communications Exercise
Exercise Dates	October 20-21, 2015
Scope	This exercise was a full scale, planned for 4 hours of operation on the 20th and 8 hours on the 21st. Area Command was located at the Madison County EOC and three forward command located in Region 8, 9, and 11.
Mission Area(s)	Response
Core Capabilities	Operational Coordination, Operational Communications
Objectives	Demonstrate Communications Unit Capabilities Demonstrate Communications Capabilities- Area Wide Demonstrate ITECS and UCP Communications Integration Demonstrate Local Communications Capabilities Establish Area Command Demonstrate coordinated use of COML's and COMT's Demonstrate proper use of ICS forms
Threat or Hazard	Magnitude 7.7 earthquake recorded along the New Madrid Seismic Zone
Scenario	Magnitude 7.7 earthquake recorded along the New Madrid Seismic Zone. Immediate severe impacts as a result of the NMSZ event are expected in Alabama, Arkansas, Indiana, Illinois, Kentucky, Mississippi, Missouri, and Tennessee.
Sponsor	Madison County Emergency Management Agency
Point of Contact	Director Larry Ringering, Madison County Emergency Management Agency 101 E. Edwardsville Road, Suite 260 Wood River Illinois 62095

ANALYSIS OF CORE CAPABILITIES

Aligning exercise objectives and core capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned core capabilities, and performance ratings for each core capability as observed during the exercise and determined by the evaluation team.

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Demonstrate Communications Unit Capabilities	Operational Communications		X		
Demonstrate Communications Capabilities Area Wide	Operational Communications		X		
Demonstrate ITECS and UCP Communications Integration	Operational Communications		X		
Demonstrate Local Communications Capabilities	Operational Communications		X		
Establish Area Command	Operational Coordination			X	
Demonstrate proper use of ICS forms and procedures	Operational Coordination	X			
Demonstrate Coordinated use of COML's and COMT's	Operational Communications		X		

Ratings Definitions:

- Performed without Challenges (P): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Performed with Some Challenges (S): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified.
- Performed with Major Challenges (M): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Unable to be Performed (U): The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s).

Objective 1: Demonstrate Communications Unit Capabilities

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Communications

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: UCP 7 worked well, the equipment worked as intended, and it was used effectively at the scene.

Strength 2: Participants in Region 9 largely overcame challenges of using an unfamiliar EMAT trailer instead of a familiar UCP

Strength 3: Participants, from different teams and agencies, worked well together

Strength 4: Coordination was very good and everyone participated; several tasks were often occurring at the same time

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Some ITECS trailers had equipment issues, for example, two of the repeaters had damaged power supplies, cache radios had out of date code plug configurations, and other equipment seemed inoperable.

Reference: N/A

Analysis: The most likely cause would be lack of scheduled testing and maintenance.

Objective 2: Demonstrate Communications Capabilities Area Wide

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Communications

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Satellite communications worked well, all of the UCP's and ITECS were able to turn up their satellite systems to pass data, video, and voice traffic.

Strength 2: The Airborne Repeaters flown by Civil Air Patrol (CAP) provided adequate coverage that would be needed in a wide-area loss of infrastructure incident. Communications ranges of 100+ miles in VHF and 70+ miles on 700 MHZ were observed.

Strength 3: Wide Area video conference worked well, and was used for operational as well as controller/evaluator briefings.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: HF SSB Communications using the State's Automatic Link Establishment (ALE) network was not available and was not used in this exercise. This is a long range direct communications method that does not require infrastructure, aircraft, or anything other than a HF radio at each end.

Reference: N/A

Analysis: The ITECS and UCP's carry a mixture of Micom-2 and Micom-3 HF radios that can support long-range ALE communications operations. However, there is no current plan of how to use the radios, no training, testing, or exercise program, ITECS and UCP personnel are not familiar with their operation, and some of the radios were never properly programmed before being issued. There is also a misconception that ALE does not work, even though this method is currently successfully used worldwide by almost all large scale HF networks

Area for Improvement 2: Airborne Repeater coverage anomalies on 700MHz

Reference: N/A

Analysis: VHF coverage using the CAP aircraft and built-in VHF antennas worked as expected. However, Several observers noted that reliability was spotty on 700MHz, primarily that the 700MHz link seemed to be hit or miss, i.e., it worked for several minutes, then didn't work. In talking to CAP technical personnel, the cause is most likely due to the fact that the antenna used for 700MHz was not permanently installed, but was a temporary antenna clamped to one of the wing struts. The body of the aircraft could be blocking the path to particular ground station depending on the aircraft's orientation. At one location, there were no radios programmed with

current interop repeater channels, they were able to receive all traffic, but not transmit on VHF. There were not able to communicate on 700MHz at all.

In addition, the repeater was flown under a FCC Special Temporary Authorization (STA) which has a short timeframe. In order to have the repeater available at all times, a permanent FCC license will be required.

Area for Improvement 3: Consider adding Cradle Point (or similar) 4G technology to UCPs and ITECS

Reference: N/A

Analysis: UCP and ITECS units have solid satellite communications for primary Internet access, but a 4G Cradle Point (or similar) technology would add a high-bandwidth alternative (and perhaps primary during non-congestion deployments)

Objective 3: Demonstrate ITECS and UCP Communications Integration

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Communications

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: EMAT-2 in Region 9 performed as well as can be expected since exercise was written for a UCP

Strength 2: ITECS-9 performed very well and operators were creative in developing quick solutions to exercise tasks

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: If EMAT trailers are considered full STR assets, consider having their telephony, A/V, computing, LAN and WAN capabilities similar to those within UCPs

Reference: N/A

Analysis: EMAT trailers were designed to support the needs of deployed EMAT teams. Exercises and deployments have shown mixed use of the EMAT trailers and some minor reconfigurations would permit more seamless interoperability with other STR assets.

Objective 4: Demonstrate Local Communications Capabilities

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Communications

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Region 9 - Good communications with local airport

Strength 2: Region 9 - Outstanding range test between mobile units and various ITECS radios

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Consider which frequencies should be in common among STR assets and fixed communications centers

Reference: N/A

Analysis: EMAT-2 and ITECS-9 were unable to reach Effingham Co dispatch or ISP D12 via Point to Point. Should have a mixed of direct (non-repeated) and Starcom talkgroups available.

Objective 5: Establish Area Command

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Coordination

The partial capability level can be attributed to the following strengths:

Strength 1: Good leadership and team work among the Command and General staff

Strength 2: Binders for each position worked well allowing staff position assignments clear roles and responsibilities.

Strength 3: Introduction to new IAP software will be a great asset in future exercises and events.

Strength 4: Interaction between IEMA staff and Madison County staff was very good. Problems were solved in a unified approach.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Having a local and regional resource directory that can be easily assessable to all Command and General staff positions would enable a much smoother process when resources are requested from jurisdictions.

Reference: Madison County EOP – Annex I; Resource Management and Logistics

Analysis: Operations and Logistics where unclear as to where resources could be allocated. There is currently one master resource book available in the EOC. This created delays in finding what operations needed and where Logistics could find them.

Area for Improvement 2: Operational briefing via video conferencing to three forward command sites and the State EOC work well but with a little rehearsal and just in time training.

Reference: *No guidelines in place*

Analysis: The video conference was the first time this concept had been tried. The end result seemed to work very well and many IMT personnel agreed that this could be a great tool in the communications between forward command posts and especially the Sate EOC. It was agreed to refine this process with standard operational guidelines.

Area for Improvement 3: IT and GIS support during exercises and real world activations are critical to the overall success of any event.

Reference: Madison County EOP – Annex A; Direction and Control

Analysis: With more and more activations and new ways through technology to improve and enhance our ability reach our final goal of recovery, it becomes more evident that IT become more involved not only during activations but in the preparedness phases of the agency also. It has become clear that IT personnel must hold a permanent position in the ICS structure.

Area for Improvement 4: The majority of the equipment in the State's NOMAD which was serving as the Area Command was not functional

Reference: N/A

Analysis: Probable caused was lack of maintenance, testing, and training for those who are tasked to operate the unit.

Objective 6: Demonstrate proper use of ICS forms and procedures

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Coordination

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: All ITECS, UCP, and IL-TERT personnel were observed using the correct ICS forms

Objective 7: Demonstrate Coordinated use of COML's, COMT's, IL-TERT, and Auxcomm

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability: Operational Coordination

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: The Lead COML at Region 8 did well and provided effective leadership

Strength 2 IL-TERT performed efficiently and provided effective dispatch and communications services.

Strength 3: There were plenty of Auxcomm volunteers. They appeared motivated and eager to help.

Strength 4: Region 9 - Appointed site COMC did well in organizing activities among COML, RADOs and COMTs

Strength 5: Region 9 - COMTs were very creative in compensating for an unexpected STR asset and for developing work-arounds to Auxcomm issues

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: IL-TERT showed some initial confusion about their role, and how they should initially proceed. After a short period of time, they quickly found their way.

Reference: N/A

Analysis: This was IL-TERT's first deployment. The showed that they could rely on their training and quickly overcame their lack of experience in working during this type of exercise/incident.

Area for Improvement 2: Auxcomm volunteers seemed unsure of their role, and how they should integrate into an ICS communications unit.

Reference: N/A

Analysis: This is most likely due to a lack of training and experience. There have only been two Auxcomm courses taught (by DHS OEC), and there are only a small number of graduates in the state. The Illinois led Auxcomm training program has just started up in October. Hold monthly trainings on the equipment in small sections at a time to get people up to speed on what all is available as a resource and to keep the equipment updated and maintained properly.

Area for Improvement 3: Region 9 - Increase RADO effectiveness when operating out of EMAT trailer

Reference: N/A

Analysis: Region 9 - Many of the expected communications assets were not readily available within the EMAT trailer. As a result, RADOs were sometimes operating radios within ITECS-9 or not at all. ITECS-9 operators attempted to implement solutions to extend radio capabilities into EMAT-2 (tone remotes, patches and portable radios), but these were met with partial success.

STATE – WIDE COMMUNICATIONS EXERCISE

REVIEW FROM THE AMATEUR RADIO COMMUNITY VIEWPOINT REGION 8

1. OVERVIEW OF OBJECTIVES

The Amateur Radio community, Ham Radio Operators (HROs) were challenged to prove their communications distance capabilities and skills without the use of existing repeaters as an alternative or backup for Public Service agencies that would be tasked with communicating in an actual earthquake. In addition, the Amateur Radio operators were requested to document their findings (success and failures) and report their results to the Madison County (MADCO) Emergency Management Agency (EMA) - Operations Center (EOC) for relay to the IEMA Communications Unit (NOMAD).
This communications exercise was conducted in concert with IEMA Regions, 9 and 11. As such, HF radio communications were tested with these regions, their respective UCPs and with IEMA Headquarters in Springfield, Illinois. HF radios in the EOC, NOMAD and Unified Command Post (UCP 7) vehicles were used for this HF communications testing.

A. Exercise Scenario Description

i. An earthquake of significant magnitude occurred in Arkansas.
ii. As a result of the earthquake, all of southern Illinois' normal radio infrastructure, such as STARCOM and cell phone towers were out of service.
iii. Public Service agencies were scrambling to re-establish communications and IEMA and other agencies were assisting in the re-establishment of this communications infrastructure.
iv. HRO support was requested, via the local Madison County Emergency Management Agency to help with local and distance communications.
v. UCP 7 was situated at the St. Louis Regional Airport in Bethalto, Illinois as a forward command post (FCP). HRO's reported to this location and the Madison County Emergency Management EOC in Wood River, Illinois for assignments.

2. Tasks assigned to Auxcomm (Ham Radio Operators)

i. Amateur Radio/Part #97 Communications Testing
ii. AUXCOMM Field Unit Data Collection
iii. Movement Control
iv. AUXCOMM Range Testing
   1. Portable to Portable
   2. Mobile to Mobile
   3. Portable to Repeater/Base
   4. Mobile to Repeater/Base
   5. "Human Repeaters" or "Daisy Chain" relay

3. AUXCOMM (HRO) Task Accomplishments

i. **SUCCESSFULLY COMPLETED**. HROs used a combination of their personal mobile radios and the amateur radios installed in UCP 7 and the MADCO EMA EOC. The

MADCO EMA EOC radios consisted of 2 VHF/UHF Kenwood radios and 1 HF Kenwood radio. The UCP 7 radios used were 1 VHF/UHF Yaesu radio and 1 HF Micom 3F radio. All radios in the EOC and UCP 7 had been previously installed and were setup with their antennas and power supplies, prior to the beginning of the exercise. HROs simply turned them on and tuned to different frequencies for usage in the exercise.

1. *It should be noted that one of the VHF/UHF radios was found disassembled in the MADCO EMA EOC. Upon re-assembly, this radio would only produce a carrier, but no audio. For all intents and purposes, this radio is out-of-service with an unknown return to service date or plan for repair.*

ii. **PARTIALLY SUCCESSFUL**. An iPhone with the Compass App was used at UCP 7 to determine the Lat/Long of the vehicle. This information was relayed to MADCO EMA EOC via VHF voice communications. No location photographs were taken by HROs or digitally transferred via radio communications to the MADCO EMA EOC or other UCPs. Photographs were not taken by HROs of their Range Test locations.

1. *It should be noted that equipment to take photographs was neither provided, nor available, as personal HRO equipment to accomplish this objective.*

iii. **QUALIFIED SUCCESSFUL.** AUXCOMM (HROs) established a Net Control Operator (NCO) in UCP 7, at the beginning of participation in the exercise. Likewise, an NCO was established at the MADCO EMA EOC, as well. The UCP 7 NCO maintained constant communications with all mobile HROs during the Range Testing and with the MADCO EMA EOC NCO. All Range Testing HROs advised their current locations during the testing signal quality/strength stops. HOWEVER, the UCP 7 NCO was unsure as to who/what an IL-TERT/RADO was in the AUXCOMM tasks and therefore did not communicate this detailed information to anyone. Movement locations/times are documented in the NCO' log of communications.

iv. **PARTIALLY SUCCESSFUL.** See item #4.

1. Task NOT PREFORMED, due to limited time constraints
2. Task NOT PERFORMED, due to limited time constraints
3. Task NOT PERFORMED, due to limited time constraints
4. HRO's were assigned to drive in essentially four different directions from the UCP 7 location at St. Louis Regional Airport; North, South, East and West. They were instructed to stop every 5 miles or so, and perform a simplex radio check for signal strength/quality from that location. All range testing was performed on a VHF frequency of 146.540 and with HRO-owned radios. The East and South radios operated on 50 watts of output power. The North and West radios operated on 25 watts of output power. All mobile vehicle antennas were used, but not documented in terms of make/gain. No Yagi-type antennas were used for any tests. The results of the Range Tests will be made available via a separate report.

v. NOT COMPLETED/UNSUCCESSFUL. HROs attempted to pass the communications message of "Everything is beautiful" using "Human Repeaters", or a "Daisy Chain" style of communications via the VHF frequency of 146.550 Mhz. UCP 7 requested MADCO EMA EOC to call another amateur radio operator (not in the exercise – WA9RD) who was monitoring the 146.550 frequency at his home near the airport and relay this message to him. The HRO (WA9RD) was instructed to call UCP 7 and relay the message on 146.540, once he received the message from the MADCO EMA EOC. WA9RD reported only hearing an RF carrier from the MADCO EMA EOC on 146.550 without any modulation, during the attempt. *(This may have been a result of using the non-functional VHF/UHF radio at the EOC. Or, it may have been a result of the RF saturation of the ITECS and UCP radio usage at the airport. It is unclear at this time what contributed to the failure.)*

4. Observations by Amateur Radio Operators

A. I should have, and did not, communicate any requirements or ask for assistance from ITECS personnel after the task failure to communicate with Springfield via the Micom 3F radio in UCP 7. It was my assumption the purpose was to test the UCP 7 HF radio/antenna for this task, not to get the message through via any means.
B. Too noisy and crowded in the UCP 7 for effective radio communications.
C. Too much aisle traffic and bumping into the HRO operator made it difficult to concentrate on radio communications traffic.
D. Unfamiliarity with the operation of UCP 7 VHF/UHF amateur radio by the HROs.
E. Unfamiliarity with the operation of the Micom 3F HF amateur radio in the UCP 7 for effective usage.
F. The enclosed trailer used for the incident briefing and staging of the HROs was a welcomed asset. It provided shelter, seating, tables, and white boards for use in the exercise. This resource helped in facilitating group meetings/task briefings.
G. There seemed to be no formal means of requesting amateur radio communicators for the exercise. The request for assistance came via the 145.230 repeater from Curtis Williams (W5DTR).
H. In a real emergency, locations of road closures, bridges out, and power line down would be beneficial to know before traveling to a requested staging area.
I. Other specific personnel had vests at the UCP 7 site for easy recognition of who they were and their role at the location. Ham radio operators could not be easily identified, due to the lack of a significant identifier (ie., vest, badge, lanyard, etc.)

5. Recommendations for Chance/Improvement

A. Retrofit the UCP 7 amateur radio locations with standard 12v DC power connections and appropriate outside antenna ports and retain the mounted amateur radios allowing HROs to bring their own radios for usage, if desired.
B. Replace the UCP 7 amateur HF radio antenna with a tilt-up mast with pulley installed, and a G5RV-type wire antenna that could be deployed easily for a more effective system. (Similar to the IEMA Comm vehicle)
C. Install alternate HF and VHF/UHF antenna ports on the outside of the vehicle that could be used for additional/alternate amateur radios inside the UCP 7.

D. Repair/replace the VHF/UHF amateur radio in the MADCO EMA EOC communications room.
E. Complete the installation of all amateur radios in the MADCO EMA EOC Comm room.
F. Upgrade the amateur radio VHF/UHF radio in UCP 7 and standardize with the MADCO EMA EOC Comm room radios. *(Facilitates training of HROs with only one radio type to learn.)*
G. Perform training classes to interested HROs on all amateur radio MADCO EMA EOC radios and their usage, as well as some high level NIMS/ICS courses.
H. Update all MADCO EMA EOC and UCP 7 VHF/UHF radios memories with appropriate frequencies for usage. Establish and document a 'standardized' template.
I. Adopt a more formal means of notification for amateur radio operators, in case of an emergency requiring immediate response.

6. Utilized Resources

A. Ham Radio Operators: K9JDN, WM9Y, KD9ARW, N9MNF, N9LVY, WD9IVD, N9SIM, K9GTB, KA9VKC, KN9O, KD9BKO, WD9T, N9LBG, (N9LQF IEMA), (W5DTR ITECS)
B. Ham Radio Frequencies: 145.230, 146.490, 147.475, 146.540, 146.550, 3.905, 7.230 MHz
C. HRO-owned vehicles and equipment used for mobile range testing

John D. Nell – K9JDN

Summary of Ham Radio Operations

Region 9

at the Effingham County Airport, Effingham, Illinois.

***Alan Huff AI9F arrived at Effingham Airport at 7:30AM. The ITECS & EMAT trailers then arrived.**

Both trailers and towers were deployed. I myself had brought a Kenwood TS430 Amateur Transceiver to operate and deploy on the amateur bands including a 30 amp standard power supply (heavy large transformer) and my mfj-948 antenna tuner. I had also had a backup Icom 706 MKIIG HF thru UHF transceiver, with my laptop with Winmor and Winlink programs for digital communications, image sending and receiving, Email etc. The frequencies designated were 3905 KHz, with an alternate frequency of 7230 KHz. The Kenwood had to be set up in the EMAT trailer as there was no room in the ITECS trailer where the Motorola MICOM, MOBAT equipment was built in for deployment for the SHARES frequencies.

At first we tried to use the Kenwood with IEMA's portable vertical antenna with a coil at the bottom and about a 15 ft whip mounted on a 3 leg folded tripod mount. The SWR was not acceptable. I tried my MFJ-948 Antenna tuner it would bring it down a little but not enough to work properly. Not knowing what that antenna was specifically or closely tuned for in the HF band, we then quit attempting to use that antenna. With the assistance of the other amateur radio operators present, we then cut a ½ wave length of coated stranded 14 awg for 40 meters. Connected it by rope to the mirrors of 2 trucks the antenna was approx. 2 ½ feet off the ground, it was east to west configuration. We then started using the #14 wire antenna and it worked with the tuner.

We could communicate with regions 8 and 11 and Springfield EOC. Due to the antenna being so close to the ground it was very directional east and west propagation. I had one contact with W9OSI near the Bethalto airport he said my signal was over S9 (Good), he was S9 also. There were several occasions of QSB, (signal fading) in and out. A lot of that was probably due to not having the antenna up further off the ground. I have a log sheet with this summary following of contacts that I had or could make out. I have never seen these trailers deployed before, so I was unaware of how everything was set up. One observation was noting how easy it is to put up the towers. If a couple of pre-fabricated wire antennas with coax connected to them, could be made and attached with a center insulator to the tower before being erected, the antennas could be placed in an inverted V configuration tying the ends off with rope to either other support structures or other weights that could be placed in certain areas would be a great asset.

If the Government SHARES frequencies stay the same or in that range of frequencies, they could design one or two antennas for the Micom or Mobat since it has a built in tuner also. I would personally think that the dipoles would work a lot better than the whip antenna. If this had been completed prior to the exercise it would be interesting to see how they would have operated. I believe we could have had S5 fair to S9 good quality signals for all 3 participating area regions 8, 11 and EOC Springfield, not including other areas of the State and region surrounding Illinois. Another option to consider is the 60 meter amateur band. One of the SHARES frequencies is close to that range.

Due to the signal propagation and the antenna configuration AI9F did not attempt to use any digital modes, Winmor, Winlink, SSTV (slow scan television) or any other at that time. I did note as the time of day got later the propagation fluctuated around signals were stronger at times towards Region 11 and NC9IL Springfield, more off to the sides of the antenna.

Also to help conserve space for the radios etc. I will switch over the 12 volt 30 amp standard power supply to a 12 volt 30 Amp switching power supply, and utilize the Icom 706MKIIG instead of the TS430. The reason I originally chose the Kenwood TS430 was for the base at home. I had the Tigertronics digital interface wired to my TS430 so I could keep my Icom 756 Pro available for normal voice cw operations.

Log of contacts 21 October 2015

- 11:35 AI9F Called Brad W9FX @ Reg 11said if he could please move down 5kc's off of 7230 Kcs there is no noise on 7225khz. Affirmative.
- 11:39 AI9F Called Brad W9FX @ Reg 11 signal report 3-3 (Readable with considerable difficulty weak) QSB signals weak fading here also 3x3 @ Reg 9.
  11:48 AI9F Called NC9IL in Springfield signals weak, QSB fading hard to understand, Brad W9FX Reg 11 relayed signal report to NC9IL.

- 12:07 Contacted W9OSI near the airport in Bethalto informed us signals strong S9 plus, report here was the same S9. (our antenna straight in that direction)
- 13:03 Called by KD9BKO Reg 8 requesting our Longitude and Latitude. Reply was Latitude 39 Deg, 04' 13.50" Longitude 88 Deg, 32'10.92"
- 13:24 Signal report request from Brad Reg 11, 5x9 Strong good signal here our signal there, 4x5 Readable with practically no difficulty.
- 13:27 AI9F Called Brad W9FX @ Reg 11, F Command asking where to email form ICS 205 ? We need 2 email addresses, Reply from W9FX send to n9lqf@arrl.net and bradw9fx@gmail.com
- 14:04 AI9F Called KD9BKO Reg 8 for signal report 5x7 perfectly readable, moderately strong. Then called W9FX Reg 11, reply was our signal weak there, 3x3, reply to signal report to Brad W9FX 5x7 QSB fading signals here at Reg 9.
- 14:10 W9FX Reg 11 asking for signal report, 5x7 here at Reg 9 good. Ours weak there 3x3.
- 14:11 AI9F contacted Brad W9FX Reg 11 due to propagation, will not be attempting use of digital equipment Winmor/ Winlink for communications, reply Affirmative.
- 14:18 AI9F Contacted NC9IL for another signal report update, their response Weak, this time their signal here at Reg 9 4x4 Readable with practically no difficulty signal strength fair.
- 15:00 AI9F called W9FX Reg 8 that the emails have been sent.
- 16:00 Exercise terminated

***Background of Alan Huff AI9F and operator of the Amateur radio station at the exercise**

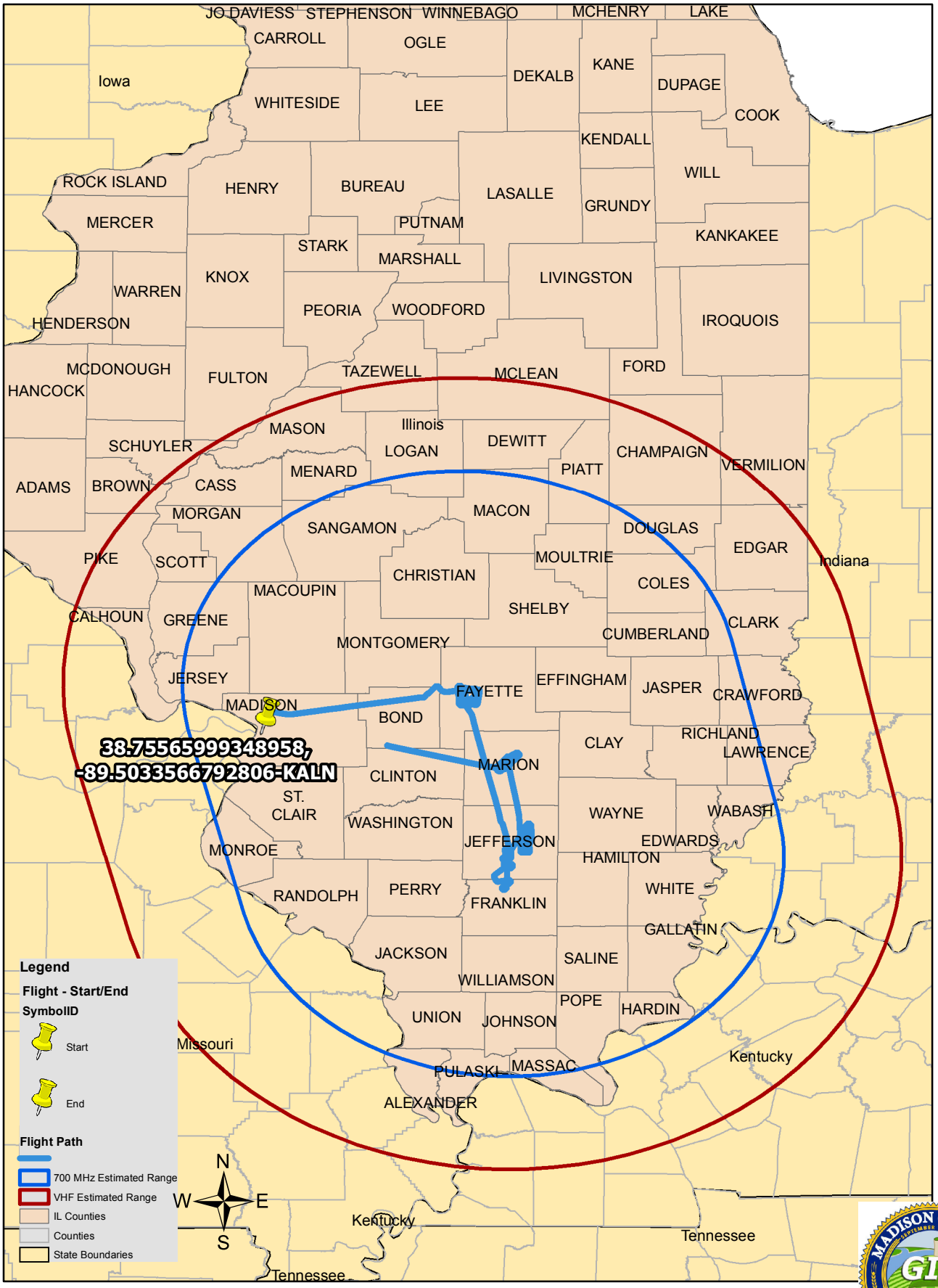
1979 Appointed Jasper County / Newton ESDA Coordinator thru 1981. Have completed all home study courses and seminars required by the State of Illinois and FEMA. 1981 Elected to Newton City Council, chairman of the ESDA Committee, and member of Jasper County / Newton ESDA. 1985 was Licensed Amateur Radio Operator. 1987 Appointed ARRL (American Radio Relay League) EC for Jasper County IL. Was licensed Army MARS (Military Affiliate Radio System) as AAV5NO, Navy / Marine Corps MARS NNN0ADA. 1991 to 1999 Appointed ESDA Coordinator for the City of Newton. Completed FEMA Courses ICS; 100, 200, 700, 800. Completed FEMA AuxComm Course. ARRL Clay County EC. Member of Flora / Clay County EMA.

AIRBORNE REPEATER TESTING

One of the objectives of the exercise was to test communications methods that would not require operating infrastructure in the affected area of a disaster. Working in conjunction with the Civil Air Patrol (CAP), we tested the concept of Airborne Repeaters, where radio repeaters are installed in an aircraft, and they are flown over a designated area to provide communications. CAP regularly flies their repeaters to provide wide area coverage using Federal Government VHF frequencies set aside for this purpose.

For our exercise, we flew a VHF as well as a 700MHz repeater. We especially wanted to test the 700MHz option, as this would be usable by the nearly 45,000 Starcom21 mobile and portable radios already in use throughout the State of Illinois. We consider the exercise a success. Using the technical parameters on our Special Temporary Authority (STA) from the FCC of 10 Watts maximum transmit power, and 5000' maximum altitude we provided very usable wide-area radio coverage. We were able to provide a coverage radius of 100 miles (very similar to CAP's experience) on VHF, and 70 miles on 700MHz, even using a temporary antenna mounted to the wing strut. We did see coverage anomalies due to the antenna being shadowed by the body of the aircraft at times.

Overall, this was a successful test of CAP and State of Illinois emergency communications capabilities.


JO DAVIESS
STEPHENSON
WINNEBAGO
MCHENRY
LAKE
CARROLL
OGLE
DEKALB
KANE
DUPAGE
Iowa
WHITESIDE
LEE
COOK
KENDALL
WILL
ROCK ISLAND
HENRY
BUREAU
LASALLE
GRUNDY
MERCER
PUTNAM
KANKAKEE
STARK
MARSHALL
KNOX
LIVINGSTON
WARREN
PEORIA
WOODFORD
HENDERSON
IROQUOIS
MCDONOUGH
FULTON
TAZEWELL
MCLEAN
FORD
HANCOCK
MASON
Illinois
SCHUYLER
LOGAN
DEWITT
CHAMPAIGN
VERMILION
MENARD
PIATT
ADAMS
BROWN
CASS
MACON
MORGAN
SANGAMON
DOUGLAS
EDGAR
PIKE
SCOTT
MOULTRIE
Indiana
CHRISTIAN
COLES
MACOUPIN
SHELBY
CALHOUN
GREENE
CLARK
CUMBERLAND
MONTGOMERY
JERSEY
EFFINGHAM
JASPER
CRAWFORD
FAYETTE
MADISON
BOND
RICHLAND
CLAY
LAWRENCE
38.75565999348958,
-89.5033566792806-KALN
MARION
CLINTON
ST.
CLAIR
WAYNE
WABASH
WASHINGTON
JEFFERSON
EDWARDS
MONROE
HAMILTON
WHITE
RANDOLPH
PERRY
FRANKLIN
GALLATIN
JACKSON
SALINE
WILLIAMSON
POPE
HARDIN
UNION
JOHNSON
Missouri
Kentucky
PULASKI
MASSAC
ALEXANDER
Kentucky
Tennessee
Tennessee
Legend
Flight - Start/End
SymbolID
Start
End
Flight Path
700 MHz Estimated Range
VHF Estimated Range
IL Counties
Counties
State Boundaries
N
W
E
S
MADISON COUNTY
GIS
ILLINOIS

AIRBORNE REPEATER TESTING

Band	Counties	Approximate Aircraft Location	Altitude	Alton/Wood River	Est. Distance to Aircraft	Effingham	Est. Distance to Aircraft	Marion	Est. Distance to Aircraft	Comments
VHF	Fayette	Vandalia	5000	Good	61	Good	44	Good	110	VHF Repeater heard clearly in Marion, but no reply due to misprogrammed radio
VHF	Franklin	Rend Lake	5000	Good	101	Good	89	Good	33	VHF Repeater heard clearly in Marion, but no reply due to misprogrammed radio
VHF	Jefferson	Mount Vernon	5000	Good	95	Poor	69	Good	51	VHF Repeater heard clearly in Marion, but no reply due to misprogrammed radio
VHF	Marion	Salem	5000	Good	78	Good	47	Good	80	VHF Repeater heard clearly in Marion, but no reply due to misprogrammed radio
VHF	Shelby	NONE	5000	X	X	X	X	X	X	Not flown due to time restraints
700	Fayette	Vandalia	5000	Good	61	Good	44	No	110	Clear Comms between Alton and Effingham (100+ miles total)
700	Franklin	Rend Lake	5000	No	101	No	89	No	33	
700	Jefferson	Mount Vernon	5000	Poor	95	Poor	69	No	51	
700	Marion	Salem	5000	Good	78	Good	47	No	80	Clear Comms between Alton and Effingham (100+ miles total)
700	Shelby	NONE	5000	X	X	X	X	X	X	Not flown due to time restraints

Note: Distance to visual horizon at 5000' = 94 miles
94 mi. Free Space Loss at 155 MHz = 119.9db
94 mi. Free Space Loss at 760 MHz = 133.7db

SC21 FAIL-OVER TESTING BY MOTOROLA OCTOBER 6, 2015

Below is the time line for the SC21 fail over testing October 6, 2015. There were two sites used, one in Sterling (SOW1) and another in DuQuoin (SOW3). SOW's were used to simulate a real SC21 site. At the start of the test both sites were placed into site trunking to simulate the Zone 3 controller in Collinsville going out of service. Both sites were then reconfigured as Zone 2 (Springfield) sites for reconnection back into the wide area network. SOW1 connected to Zone 2 controller via satellite and SOW3 connected to Zone 2 controller via 4G. The wide area network was then tested both ways by portable radio from the Sterling Site to the DuQuoin Site through the Zone 2 controller in Springfield with clear communications.

The time to convert SOW1 to Zone 2 controller took 2.25 hours and SOW3 to Zone 2 controller 2.5 hours.

This was a very successful exercise and demonstration proof of concept for regaining area wide communication during a catastrophic zone controller failure.

IL_Starcom Z3 Failover Testing ITL

On-Site Date: October 5, 2015
Today's Date : November 19, 2015

Time of Day	Tasks at SOW1 Location	Expected Duration of Task in hours	Time of Day	Tasks at SOW3 Location	Expected Duration of Task in hours	Time of Day	Tasks for MSO / NOC	Expected Duration of Task in hours	Wide / Site Trunking	InterZone Trunking	Console Dispatch	Zone Watch	UEM
5-Oct	**Day-1 SOW1 and SOW3 Baseline**												
	SOW 1 Baseline Configuration Lead Eng: Tyler Jones Location: Sterling District HQ			SOW 3 Baseline Configruation Lead Eng: Mike Frangelo Location: DuQuoin District HQ			NOC: Email notification out to notify users of Zone 2 core router reboots the day of Failover Test		O	N	N	N	N
	- Program site for Z3 Site 94			- Program site for Z3 Site 95					O	N	N	N	N
	- Verify Router and Switch EOS are latest 7.14 version. Update if necessary.			- Verify Router and Switch EOS are latest 7.14 version. Update if necessary.					O	N	N	N	N
	- Verify Router and Switch configurations are latest 7.14 version. Update if necessary.			- Verify Router and Switch configurations are latest 7.14 version. Update if necessary.					O	N	N	N	N
	- Verify SC and BR devices are latest 7.14 version. Update if necessary			- Verify SC and BR devices are latest 7.14 version. Update if necessary					O	N	N	N	N
	- Ensure SOW1 can successfully be brought up in Site Trunking and pass audio.			- Ensure SOW3 can successfully be brought up in Site Trunking and pass audio.					S	N	N	N	N
	- Make any necessay preparations for this to have a Satellite Link to MSO when cut-over.			- Make any necessay preparations for this to have a 4G Link to MSO when cut-over.					S	N	N	N	N
6-Oct	**Day-2 Failover Test**												
8:00	Starcom teams arrive onsite. Notify NOC of site arrival. SOW1: Tyler Jones	0:05	**8:00**	Starcom teams arrive onsite. Notify NOC of site arrival. SOW3: Mike Frangelo and Bob Stallwitz	0:05	**8:00**	Starcom teams arrive onsite. Notify NOC of site arrival. Z2 MSO: Doug Phelps, Larry Ferden, Rob Hoffert	0:05	S	N	N	N	N
8:05	Setup and Prepare for test	1:25	**8:05**	Setup and Prepare for test	1:25	**8:05**	MSO: Coordinate all people at all locations	1:25	S	N	N	N	N
9:30	Begin Z3 Failover Test	0:00	**9:30**	Begin Z3 Failover Test	0:00	**9:30**	Begin Z3 Failover Test	0:00	S	N	N	N	N
9:30	Satellite turn up	0:30	**9:30**	4G Initialization	0:30	**9:30**	MSO: Generate New Router and Switch Configs	0:30	S	N	N	N	N
10:00	Reprogram SOW1 Site Router	0:10	**10:00**	Reprogram SOW3 Site Router	0:10	**10:00**	MSO: Reprogram Z2 Core Routers	0:30	S	N	N	N	N
10:10	Reprogram SOW1 Site Switch	0:10	**10:10**	Reprogram SOW3 Site Switch	0:10	**10:30**	Wait for SOW work to complete	0:20	S	N	N	N	N
10:20	Update SOW1 SC IP Addresses and Codeplugs to reflect Z2 S93	0:10	**10:20**	Update SOW3 SC IP Addresses and Codeplugs to reflect Z2 S92	0:10				S	N	N	N	N
10:30	Update SOW1 BR IP Addresses and Codeplugs to reflect Z2 S93	0:20	**10:30**	Update SOW3 BR IP Addresses and Codeplugs to reflect Z2 S92	0:20				S	N	N	N	N
10:50	Verify SOW1 is Site Trunking as Z2 S93	0:15	**10:50**	Verify SOW3 is Site Trunking as Z2 S92	0:15	**10:50**	NOC: Discover SOW1 and SOW3 as Z2 S92 and Z2 S93 in UNCW	0:30	S	N	N	N	N
11:05	Wait for NOC work to complete	0:40	**11:05**	Wait for NOC work to complete	0:55	**11:20**	NOC: Approve UNC job for site adds	0:15	S	N	N	N	N
						11:35	NOC: Publish Infrastructure Data to PM	0:10	S	N	N	N	N
11:45	Verify SOW1 is Wide Trunking as Z2 S93. Complete calls between SOW1, SOW3 and NOC for verification.	0:15				**11:45**	Verify SOW1 is Wide Trunking on Z2. Complete calls between SOW1 and MSO for verification.	0:15	W	Y	Y	N	N
12:00	End of Zone 3 Failover Test for SOW 1	0:00	**12:00**	Verify SOW3 is Wide Trunking as Z2 S92. Complete calls between SOW1, SOW3 and NOC for verification.	0:15	**12:00**	Verify SOW3 is Wide Trunking on Z2. Complete calls between SOW3 and MSO for verification.	0:15	W	Y	Y	N	N
			12:15	End of Zone 3 Failover Test for SOW 3	0:00	**12:15**	NOC: Discover SOW1 and SOW3 as Z2 S92 and Z2 S93 in UEM	0:30	W	Y	Y	Y	Y
			12:15	Satellite turn up and test for SOW3.	1:00	**12:45**	End of Zone 3 Failover Test	0:00	O	N	N	N	N
12:00	Satellite tear down for SOW1	1:00	**13:15**	Satellite tear down for SOW3.	1:00	**12:45**			O	N	N	N	N
13:00	Starcom teams leave site	0:00	**14:15**	Starcom teams leave site	0:00	**12:45**	Starcom teams leave site	0:00	O	N	N	N	N
	Overall SOW1 downtime was from the beginning of the test at 9:30 am to the Wide Trunking verification at 11:45 am for a duration of 2.25 hours.			**Overall SOW3 downtime was from the beginning of the test at 9:30 am to the Wide Trunking verification at 12:00 pm for a duration of 2.5 hours.**									
7-Oct	**Day-3 SOW Deployment Training (at Zone 2 MSO)**												
						9:00	SOW deployment training demonstration.	2:00	O	N	N	N	N
						11:00	SOW deployment hands on exercises (using SOW2 and IEMA SOW at Z2 MSO).	6:00	O	N	N	N	N

Legend

W	**Wide Area Trunking**
Y	**Feature / Function Enabled and Usable**
S	**Site Trunking as Zone 3 Site**
S	**Site Trunking as Zone 2 Site**
N	**Feature / Function Disabled and Not Usable**
O	**Individual site is Off the Air and Not Usable**

INFORMATION TECHNOLOGY AND EMERGENCY MANAGEMENT

The role that technology plays in emergency response is ever increasing in extent and complexity. For example, not long ago EOC's operated with paper documents, T cards and paper maps. Personal computers were added to work with digital documents, spreadsheets and mapping. Now EOC's function on data networks for connectivity, cloud hosted applications to manage incidents, satellite communications for redundancy, streaming video and GIS mapping systems for real time intelligence. In addition, mobile command centers are being utilized with almost the same advanced technology that is in the EOC's themselves.

The expansion of technology allows incident management and communications to be more effective and efficient than ever before. For that reason, it is necessary to recognize that proper IT support is mandatory to implement, maintain and transform this technology. The ICS structure needs to recognize this and build in IT support as a necessary function.

RECOMMENDATIONS FOR FUTURE EXERCISES

- All exercise tasks were presented in a linear fashion. This design is not compatible with real world experience. In a real world event Communications Leaders will be forced to multi-task completing several tasks con-currently. The suggestion was made to have an Incident Commander hand out tasks to the communications leaders at the next exercise rather than giving them out by presenting a numbered task list.
- There needs to be more security around the exercise planning team and documentation for the next exercise. Several people were able to view scenarios documents ahead of time which gave them ample time to complete their tasks that they may not have during a real event.
- The Communications Leaders need to take more of a leadership role in the next exercises. Several of them were unsure of the tasks they were presented with. Refresher training needs to be held for all of them.
- It would be beneficial to use CERT volunteers in the next exercise to perform the radio range testing.
- GIS needs to be utilized more in future exercises. In this exercise data was not generated fast enough to keep GIS occupied.
- The Communications Leaders did not conduct regular conversations/briefings with the Aux-Comm personnel which led to confusion about which tasks needed to be completed.
- More COMM-T's needed to be available for the deployment of all the equipment. There is a lack of knowledge among the current roster of how all the equipment should be deployed and utilized. Holding monthly specified training for Comm-T's would help iron out issues in the future with the deployable equipment.
- Dispatchers deployed through ITERT were unsure of their assignments upon arrival. Not all ICS were presented to them which made their mission unclear.
- The name for the "Nomad" was changed a few times during the exercise which caused confusion among the players. Not all players were informed of this change. In the future it would be helpful if any changes made during exercise play were announced via a role call out over the radio to ensure that everyone receives the message/changes.

MASTER SCENARIO EVENTS LIST (MSEL)

A MSEL is typically used during operations-based or complex discussion-based exercises and contains a chronological listing of the events that drive exercise play. All though the MSEL created for this exercise generated good results for analysis, it was decided that the MSEL was more useful as a tool for the evaluators and controller and that injects from a Command structure would have worked better. However the planning team included the MSEL in this AAR/IP to aid in developing future communications exercises.

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/20/2015	1	Exercise Director	Exercise briefing	0900 hours	Controller and Evaluator briefing	Via video conferencing	Area Command	All Forward Command Sites	Successful video link up	
10/20/2015	2	EOC Manager	Incident Briefing	0930 hours	Command and General Staff meeting	In EOC conference room		Command Staff	Position assignments accomplished and objectives established	
10/20/2015	3	EOC Manager	IAP	1000 hours	Command and General staff begin developing IAP for second operational period			Command Staff	Successful completion of IAP for second operational period	
10/20/2015	**4**	**ALL**	**Lunch Break**	**1200 hours**	**Lunch Break**	**Time Approximate**			**1 Hour Break**	
10/20/2015	5	Exercise Director	End of play	1530 hours	Short Hot-Wash					
			START	SECOND	DAY	OCTOBER	21			
10/21/2015	6	All	**EQUIPMENT ARRIVAL/SITE PREPARATION**	0730 hours	ITECS / UCP and crews arrive at designated sites, set up vehicles and equipment	UCP and ITECS are encouraged to arrive and set up on the First Day, it at all possible.			Personnel and Equipment Accountability - safely arrived on site and set up.	
10/21/2015	7	Forward Command Evaluators'	Check in	0745 hours	Inform Area Command of ready status using pre-designated radio talk-group identified in the State communications plan	All UCP's and ITEC's will report in order	All Forward Command sites		Successful radio test	
10/21/2015	8	All	**Exercise Briefing, each site**	0800 hours	Brief participants on exercise objectives, roles and responsibilities	Includes Safety Briefing! Continuously check for unsafe conditions! Who is the Safety Officer at each site?	COML	Exercise participants including site personnel, as well as controllers, other sites, etc.	All participants briefed and understanding SAFETY, objectives, roles, and responsibilities	
10/21/2015	9	All	**Exercise Briefing, each site**	0800 hours	Task Books	Locate anyone bringing their COML / COMT Task Book, gain approvals.			Relevant sections in Task Books are reviewed and approved, if appropriate	
10/21/2015	10	All	**EQUIPMENT ARRIVAL/SITE PREPARATION Tasks**	0800 hours	Install equipment earth safety ground systems	All equipment properly grounded			All equipment properly grounded	
10/21/2015	11	All	**EQUIPMENT ARRIVAL/SITE PREPARATION Tasks**	0800 hours	Install and connect cables between units as required	Cables run/connected/identified/labeled			Cables run/connected/identified/labeled	
10/21/2015	12	All	**EQUIPMENT ARRIVAL/SITE PREPARATION Tasks**	0800 hours	Deploy and raise masts	Spotters required at each mast when raised			Masts properly and safely deployed and working	

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	13	All	**EQUIPMENT ARRIVAL/SITE PREPARATION Tasks**	0800 hours	Connect portable generators to ITECS and or UCP	Generator adapter cable available if needed			Generators can power ITECS and/or UCP if required	
10/21/2015	14	All	**EQUIPMENT ARRIVAL/SITE PREPARATION Tasks**	0855 hours	**STOPPING POINT - SAFETY CHECK**	Safety Officer per site should inspect equipment setups to ensure site safety.	Each Site Safety Officer	Exercise Director	Local Safety Officer to check the equipment setups for grounding, etc. Controller/Observers will inform exercise director that safety check hss been performed.	
10/21/2015	15			0900 - 1200 hours	**VIDEO CONFERENCING**					
10/21/2015	16	Technical Specialists	**Video**	0730-0900	Identify type of VTC equipment (Mobile Responder/HDX8000)				Inventory of actual equipment	
10/21/2015	17	Technical Specialists	**Video**	0730-0900	Verify that system is operating on the most current firmware version (perform firmware upgrade if necessary)				Video equipment is operational and ready for use	
10/21/2015	18	Technical Specialists	**Video**	0730-0900	Establish point to point connection (Intra-Site)		All Forward Command sites	All forward Command Sites + Area Command Madison Co. EOC		
10/21/2015	19	Technical Specialists	**Regional Video Conferencing**	0730-0900	Establish point to point connection (Inter-Site) utilizing satellite connection		All Forward Command sites	All forward Command Sites + Area Command Madison Co. EOC	Video equipment is operational and ready for use	
10/21/2015	20	Technical Specialists	**Statewide**	0730-0900	Establish multipoint connection with all VTC capable assets in all sites + State POC		All Forward Command sites	All forward Command Sites + Area Command Madison Co. EOC	Video Conference among all participants	
10/21/2015	21	Planning Chief	Operational briefing	0900 hours	Operational briefing conducted by Command Staff through video conferencing	All Forward Command Sites confirm and approve work assignments	Command Staff	All forward Command Sites	Successful operations briefing	
10/21/2015	22	COML(s)	**ICS Position Assignments**	0900 - 1200 hours	Oversee exercise tasks & players throughout the exercise					
10/21/2015	23	COMT(s)	**ICS Position Assignments**	0900 - 1200 hours	Install, operate and maintain equipment throughout the exercise. Reports to COML or designee					
10/21/2015	24	Technical Specialists	**ICS Position Assignments**	0900 - 1200 hours	Install, operate and maintain equipment throughout the exercise. Reports to COML or designee					

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	25	INCM	**ICS Position Assignments**	0900 - 1200 hours	Oversee Dispatch and other communications tasks throughout the exercise. Reports to COML or designee					
10/21/2015	26	IL-TERT / RADO	**ICS Position Assignments**	0900 - 1200 hours	Radio Operators communicate with all exercise participants. Document and collect exercise information. Reports to INCM or designee.					
10/21/2015	27	AUXCOMM Lead	**ICS Position Assignments**	0900 - 1200 hours	Oversee AUXCOMM exercise tasks and personnel during the exercise. Reports to COML or designee.					
10/21/2015	28	AUXCOMM Members	**ICS Position Assignments**	0900 - 1200 hours	AUXCOMM Members will implement and operate Amateur Radio communications for the exercise. Reports to Auxcomm Lead or designee.					
10/21/2015	29	ALL	**Documentation**	0900 - 1200 hours	All exercise personnel shall use all appropriate ICS forms to document exercise actifities and results		COML	Exercise participants including site personnel, as well as controllers, other sites, etc.	Proper documentation of the exercise in ICS/NIMS format	
10/21/2015	30	All	**Local Radio Communications**	0900 - 1200 hours	**LOCAL RADIO COMMUNICATIONS**				**Successfully exercise radio capabilities on each ITECS and UCP**	
10/21/2015	31	ITECS / UCP / COMT / Technical Specialists	**Cache Radio Testing**	0900 - 1200 hours	Test cache radios – to include EF Johnson (if available) and Harris tri-band	Check for the proper naming formats, etc. Also have a random list of channels / talkgroups to test for correctness.			Verify Charge level, Accessories, operating condition. Spot-check ITTF template for proper format, and spot-check correct frequencies in all bands using Rules of Use document (SIEC) or I2FOG.	
10/21/2015	32	COML(s)	**Communications Plan Development and Documentation**	0900 - 1200 hours	Develop communications plan / Fill out ICS 205	Requirements from IAP or I/C			Completed and viable communications plan documented on the ICS-205	

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	33	IL-TERT / RADO	**SITREPs**	0900 - 1200 hours	RADIO's will document a SITREP for their site every hour. To include weather, nember of people on site, ongoing current activites, and other information as determined by the Exercise Director and/or COML		All Forward Command sites	All forward Command Sites + Area Command Madison Co. EOC	Hourly SITREPS gathered by RADO's, to be exchanged with other sites, as well as Madison County and Springfield	
10/21/2015	34	IL-TERT / RADO	**Movement Control**	0900 - 1200 hours	RADO's will document, BY RADIO, the locations of all exercise players while off site. Exercise players will radio in when leaving and arriving at every location. Note, RADO's aren't giving permission to move, simply documenting movement.		Field Exercise Players	RADO at Forward Command	RADO's should know where off-site players are at all times. Players will document their movements through their local RADO	
10/21/2015	35	COML(s)	**DEMOB Plan**	0900 - 1200 hours	COML's or designee will begin a DEMOB plan at the start of the exercise and keep it updated if/when the situation changes.		COML		At the end of the day there should be an operable DEMOB plan.	
10/21/2015	36	COML(s) and ALL	**Equipment Accountability**	09:00 - 1630 hours	Implement or use existing equipment accountability system for checking out equipment to exercise participants	No equipment is issued without proper documentation, i.e., Name, Agency, Cell Number, etc.	COML		All equipment properly documented, who has what equipment, when did they receive it and turn it back in.	
10/21/2015	37	IL-TERT / RADO / COMT / Technical Specialists	**Starcom21 Site Trunking Simulation**	0900 - 1200 hours	Site Trunking test	Pick the stongest or closest Starcom site, lock the radio(s) on that site.			Starcom radios all locked on the same site at each exercise location. Document which site was used	REMEMBER TO UNLOCK AT THE END OF EXERCISE!
10/21/2015	38	IL-TERT / RADO / COMT / Technical Specialists	**Field Unit Data Collection**	0900 - 1200 hours	Use hand-held and/or vehicular GPS units to establish lat/lon of exercise location(s), and range test, or other locations. Photograph each location.	If time permits, send someone to 3 - 4 local places of interest, get the GPS lat/lon, report it back by radio. Photos will be used for exercise deliverables. Manual download of photos only, no texting or e-mailing.	Field Testers	IL-TERT / RADO at Forward Command	IL-TERT / RADO to document locations of range testing by lat/lon from Field Units. Photos to be downloaded manually in a later task.	To be conducted in conjunction with range testing.
10/21/2015	39	IL-TERT / RADO / COMT / Technical Specialists	**Range Testing**	0900 - 1200 hours	Range Test Portable to Portable - validate measured distances	700 or 800 MHZ simplex channel - plot test locations on map	Field Testers	IL-TERT / RADO at Forward Command	Documented Simplex portable to portable range data. Which channel was used, how far could they reliably communicate?	R8 & R9 Test UHF & 7/800. R11 Test VHF & 7/800

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	40	IL-TERT / RADO / COMT / Technical Specialists	**Range Testing**	0900 - 1200 hours	Range Test Mobile to Mobile - validate measured distances	700 or 800 MHZ simplex channel - plot test locations on map	Field Testers	IL-TERT / RADO at Forward Command	Documented Simplex mobile to mobile range data. Which channel was used, how far could they reliably communicate?	R8 & R9 Test UHF & 7/800. R11 Test VHF & 7/800
10/21/2015	41	IL-TERT / RADO / COMT / Technical Specialists	**Range Testing**	0900 - 1200 hours	Range Test Portable to Repeater / Base - validate measured distances	700 or 800 MHZ repeated or simplex channel - plot test locations on map	Field Testers	IL-TERT / RADO at Forward Command	Documented repeater to portable range data. Which channel was used, how far could they reliably communicate?	R8 & R9 Test UHF & 7/800. R11 Test VHF & 7/800
10/21/2015	42	ITECS / UCP / COMT / Technical Specialists	**Range Testing**	0900 - 1200 hours	Range Test Mobile to Repeater / Base - validate measured distances	700 or 800 MHZ repeated or simplex channel - plot test locations on map	Field Testers	IL-TERT / RADO at Forward Command	Documented repeater to mobile range data. Which channel was used, how far could they reliably communicate?	R8 & R9 Test UHF & 7/800. R11 Test VHF & 7/800
10/21/2015	43	IL-TERT / RADO / COMT / Technical Specialists	**Suitcase Repeater / Range Testing**	0900 - 1200 hours	Set up and test suitcase repeater(s)	Include in range testing	Field Testers	IL-TERT / RADO at Forward Command	Documented repeater to mobile range data. Which channel was used, how far could they reliably communicate?	
10/21/2015	44	IL-TERT / RADO / COMT / Technical Specialists	**ACU-1000 Repeater Setup / Range Testing**	0900 - 1200 hours	ACU "roll your own" repeater on VHF NIP pairs using VHF duplexer	Include in range testing	Field Testers	IL-TERT / RADO at Forward Command	Documented repeater to mobile range data. Which channel was used, how far could they reliably communicate?	
10/21/2015	45	IL-TERT / RADO / COMT / Technical Specialists	**NCS250 Patch Device Verification**	0900 - 1200 hours	Patch two or three talkpaths. (TBD)using the NCS250 mobile multi-switcher with headset	Test for intelligibility	Field Testers	IL-TERT / RADO at Forward Command	Which channels were patched? Was the patch intelligible?	NOTE: DO NOT, RPT, DO NOT PATCH BETWEEN PUBLIC SAFETY, AIRCRAFT AND/OR AMATEUR FREQUENCIES! (A FCC RULES VIOLATION)
10/21/2015	46	IL-TERT / RADO / COMT / Technical Specialists	**ACU-1000 Patch / Radio Control**	0900 - 1200 hours	Patch a simplex channel to PBX to make a "PBX Control Station"	Allows dispatchers to use a phone w/headset or speaker phone as a console position.	Field Testers	IL-TERT / RADO at Forward Command	Which channel was used? Was the audio intelligible?	
10/21/2015	47	IL-TERT / RADO	**Aircraft Radio Test**	0900 - 1200 hours	Make a test transmission with the ATC radio to the local airport	Requires prior permission and an assigned frequency!!!	IL-TERT / RADO at Forward Command	Local Airport Control Tower (or other unit), with prior permission!	Document which frequency was used and which airport was contacted	Requires prior permission and an assigned frequency!!!
10/21/2015	48	IL-TERT / RADO	**IEMA Dispatch Contact**	0900 - 1200 hours	Contact the nearest IEMA dispatch point or via Low-Band		IL-TERT / RADO at Forward Command	IEMA Dispatch	IEMA should be able to tell which base station was used. Document	Requires prior coordination.
10/21/2015	49	IL-TERT / RADO	**VHF Low Band Testing**	0900 - 1200 hours	Perform Low-Band ITECS/UCP to vehicle range test. (If available)		Field Testers	IL-TERT / RADO at Forward Command	Document range test results.	

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	50	IL-TERT / RADO	**VHF Point to Point Testing**	0900 - 1200 hours	UCP to make contact with local ISP District and/or County Dispatch Center on Point.	Get copy of permission from State to use their temporary fixed license	IL-TERT / RADO at Forward Command	Nearest ISP District and/or County Dispatch Center	Send a voice message to the dispatch center to be relayed to Springfield later. Document results	
10/21/2015	51	IL-TERT / RADO	**8CALL90 / 8TAC Fixed Station Repeater Testing**	0900 - 1200 hours	UCP to make contact with local ISP District and/or County Dispatch Center on 8CALL90 and 8TAC repeater(s)		IL-TERT / RADO at Forward Command	Nearest ISP District and/or County Dispatch Center	Send a voice message to the dispatch center. Document which center and which repeater(s) were used.	
10/21/2015	52	AUXCOMM	**Amateur Radio / Part 97 Communications Testing**	0900 - 1200 hours	Set up and test local AUXCOMM communications asset(s)	Preferably, do NOT use existing repeaters, although they will be allowed for this exercise with pre-approval during planning. Deployable repeaters will be allowed.			Successfully exercise AUXCOMM radio capabilities	If existing repeaters are used, they can't be on guyed towers or other structures that could be destroyed during an earthquake.
10/21/2015	53	AUXCOMM	**AUXCOMM Field Unit Data Collection**	0900 - 1200 hours	Use hand-held and/or vehicular GPS units to establish lat/lon of exercise location(s), and range test, or other locations. Photograph each location.	If time permits, send someone to 3 - 4 local places of interest, get the GPS lat/lon, report it back by radio. Photos will be used for exercise deliverables. Manual download of photos only, no texting or e-mailing.	Field Testers	AUXCOMM Operators at Forward Command, relayed to IL-TERT / RADO at Forward Command	AUXCOMM Operators to document locations of range testing by lat/lon from Field Units. Photos to be downloaded manually in a later task.	Can be conducted in conjunction with range testing.
10/21/2015	54	AUXCOMM	**Movement Control**	0900 - 1200 hours	AUXCOMM will document, BY RADIO, the locations of all exercise players while off site. Exercise players will radio in when leaving and arriving at every location. Forward AUXCOMM field personnel locations to RADO in real time.		Field Exercise Players	AUXCOMM Operators at Forward Command, relayed to IL-TERT / RADO at Forward Command	RADO's should know where off-site players are at all times. Players will document their movements through their local AUXCOMM to RADO	
10/21/2015	55	AUXCOMM	**AUXCOMM Range Testing**	0900 - 1200 hours	Range Test Portable to Portable - validate measured distances	Note which band(s) is used.	Field Testers	AUXCOMM Operators, relayed to IL-TERT / RADO	Documented Simplex portable to portable range data. Which channel was used, how far could they reliably communicate?	
10/21/2015	56	AUXCOMM	**AUXCOMM Range Testing**	0900 - 1200 hours	Range Test Mobile to Mobile - validate measured distances	Note which band(s) is used.	Field Testers	AUXCOMM Operators at Forward Command, relayed to IL-TERT / RADO at Forward Command	Documented Simplex mobile to mobile range data. Which channel was used, how far could they reliably communicate?	

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	57	AUXCOMM	**AUXCOMM Range Testing**	0900 - 1200 hours	Range Test Portable to Repeater / Base - validate measured distances	Note which band(s) is used.	Field Testers	AUXCOMM Operators at Forward Command, relayed to IL-TERT / RADO at Forward Command	Documented repeater to portable range data. Which channel was used, how far could they reliably communicate?	
10/21/2015	58	AUXCOMM	**AUXCOMM Range Testing**	0900 - 1200 hours	Range Test Mobile to Repeater / Base - validate measured distances	Note which band(s) is used.	Field Testers	AUXCOMM Operators at Forward Command, relayed to IL-TERT / RADO at Forward Command	Documented repeater to mobile range data. Which channel was used, how far could they reliably communicate?	
10/21/2015	59	AUXCOMM	**AUXCOMM Range Testing**	0900 - 1200 hours	Using "Human Repeaters", or a "Daisy Chain", relay communications from beyond normal Simplex or repeater ranges.	Using simplex radio frequncies, use two or more simplex links to pass messages outside of normal simplex ranges.	Field Testers	AUXCOMM Operators at Forward Command, relayed to IL-TERT / RADO at Forward Command	Documented capability to extend SIMPLEX communications beyond normal radio ranges. Document which frequencies were used, and where the human repeaters were located.	
10/21/2015	60	ALL		0900 - 1200 hours	**GIS**				**Successfully exercise GIS capabilities at each site**	
10/21/2015	61	IL-TERT / RADO - GIS Specialists	**GIS Data Collection**	0900 - 1200 hours	Field units will be using hand-held and/or vehicular GPS units to establish lat/lon of exercise location(s), and range test, or other locations. Plus photographs of each location. GIS Specialist will collect information from RADO and Field units	Photos will be used for exercise deliverables and payload on data networks. MANUALLY download photos from cameras and phones. No texting or sending over commercial service allowed.	IL-TERT / RADO at Forward Command	GIS Specialists at Forward Command	Mapped locations of all exercise locations, range test points and points of interest. Photographs will be collected and used later for payload.	Can be conducted in conjunction with range testing.
10/21/2015	62	GIS Specialists (IL-TERT if GIS not available)	**GIS Mapping**	0900 - 1200 hours	UCP to produce printed maps of exercise locations. Include the local airport if it was radio-checked.	Note: if mapping software or GIS specialists are unavailable, manually mark up paper maps, and/or keep lists of locations.	GIS Specialists at Forward Command			
10/21/2015	63	GIS Specialists (IL-TERT if GIS not available)	**GIS Mapping**	0900 - 1200 hours	UCP to produce printed maps of range testing points with lat/lon	Note: if mapping software is unavailable, manually mark up paper maps, and/or keep lists of locations.	GIS Specialists at Forward Command			
10/21/2015	64			0900 - 1200 hours	**LOCAL TELEPHONE / PBX COMMUNICATIONS**				**Successfully exercise telephone and PBX capabilities at each site**	

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	65	Technical Specialists	**Telephone**	0900 - 1200 hours	Set up local telephone communications between ITECS, UCP, other.	Make calls to validate system operation.	IL-TERT / RADO at Forward Command	Other UCP's and exercise locations.	Verify telephone and PBX operation	
10/21/2015	66	Technical Specialists	**Telephone**	0900 - 1200 hours	Connect to local PSTN	Make local calls to validate local operation.	IL-TERT / RADO at Forward Command	Local phone number	Verify that the PBX can be connected to local dial tone	
10/21/2015	67	Technical Specialists	**Telephone**	0900 - 1200 hours	Produce a "phone book" and quick reference guide for phone system	Validate that someone unfamiliar can use the system	Technical Specialist	IL-TERT / RADO at Forward Command	Users can operate the PBX to make calls.	
10/21/2015	68	Technical Specialists	**Telephone**	0900 - 1200 hours	Test Tellular units (if available)	Make cellular calls from the UCP	IL-TERT / RADO at Forward Command	Local phone number	Verify Tellular and PBX operation	
10/21/2015	69	Technical Specialists	**Telephone**	0900 - 1200 hours	Set up Ringdown circuit between UCP and ITECS, or other locations		UCP	ITECS	Verify Ringdown equipment operation	
10/21/2015	70		**DATA / NETWORKS**	0900 - 1200 hours	**DATA / NETWORKS**				**Successfully exercise Data Networks at each site**	
10/21/2015	71	Technical Specialists	**Data & Networks**	0900 - 1200 hours	Implement wired LAN in the UCP, provide a wired LAN connection outside		Technical Specialist	Exercise participants	Wired network services between UCP and ITECS, as well as a guest computer	
10/21/2015	72	Technical Specialists	**Data & Networks**	0900 - 1200 hours	Implement SECURE wireless LAN in and around the UCP	Indicate wireless network security method, i.e. None, WEP, WPA, WPA2, etc. Indicate password strength; number of characters, mixed case, number, special characters? Indicate other securty measures (is the password visible from outside on a whiteboard, etc.?)	Technical Specialist	Exercise participants	A secure wifi connection for exercise participants.	
10/21/2015	73	Technical Specialists	**Data & Networks**	0900 - 1200 hours	Identify and connect to each network printer and print a test page from each	Note if driver software needed to be installed. Note if any problems were encountered.	Technical Specialist	Exercise participants	Test printouts from the various devices	
10/21/2015	74	Technical Specialists	**Data & Networks**	0900 - 1200 hours	Identify and connect to each local network file storage location and verify		Technical Specialist	Exercise participants	Send and receive files from the local file servers	
10/21/2015	75	Technical Specialists	**Data & Networks**	0900 - 1200 hours	Establish Internet connectivity for all vehicles at the site via satellite link		Technical Specialist		Satellite Internet access is operational	
10/21/2015	76	Technical Specialists	**Data & Networks**	0900 - 1200 hours	Validate the vehicle has a plan in place for acquiring internet connectivity from an alternate source should their primary source fail	Can be a connection to 3G or 4G cellular, ethernet connection to a local facility, or other method.	Technical Specialist		Demonstrate multiple internet connections from different sources.	

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	77	Technical Specialists	**Data & Networks**	0900 - 1200 hours	Connect an outside computer or device to the wireless network, validate the use of the file and print server(s)	Can be the controller's or other device.	Technical Specialist	Test Computer	Securely connect a computer from someone assigned to the site,	
10/21/2015	78	Technical Specialists	**Data & Networks**	0900 - 1200 hours	Kick the outside computer OFF the network via the wireless router administration screen(s).	Can be the controller's or other device.	Technical Specialist	Test Computer	Be able to remove unauthorized users from the network when required.	
10/21/2015	79	**All**	**Lunch Break**	**12:00-13:00**	**Lunch Break**	NOTE: Participants may continue work on any local tasks in the afternoon, if desired, in addition to the scheduled afternoon tasks.			**1 Hour Break**	
10/21/2015	80	All	**Regional Radio Communications**	13:00-1430 hours	**RADIO COMMUNICATIONS**				**Successfully exercise radio capabilities on each ITECS and UCP**	
10/21/2015	81	COML(s)	**Regional ICS 205 exchange**	13:00-1430 hours	Exchange local ICS205's with the other exercise locations. Deconflict resources if necessary.	Use exercise communications methods	Individual COML at the Forward Commands	All COML's at all Forward Commands + Area Command	COML's at all locations have the up-to-date ICS-205's from all other exercise locations.	
10/21/2015	82	IL-TERT / RADO / COMT(s) / AUXCOMM	**Regional SSB network**	13:00-1430 hours	Set up and communicate to the other exercise locations with HF Voice SSB radios.	Use the Micom radios on Part 90 frequencies AND AUXCOMM HF Radios on amateur frequencies. Use SITREP's from the RADO's. Relays by other stations outside the regions is allowed.	AUXCOMM / RADO at each Forward Command	AUXCOMM / RADO's at all other Forward Commands	Messages successfully passed between regional sites	
10/21/2015	83	AUXCOMM	**Regional AUXCOMM network**	13:00-1430 hours	Exchange photos and/or data with other exercise locations via non-infrastructure methods. Packet, HF SSTV, or?	Methods need to be infrastructure independent, and approved during planning. Relays by other stations outside the regions is allowed.	AUXCOMM / RADO at each Forward Command	AUXCOMM / RADO's at all other Forward Commands	Data and Images successfully passed between regional sites	
10/21/2015	84	IL-TERT / RADO / CAP	**Regional Airborne Repeater**	TBD	Communicate with the other exercise locations via flying repeater(s)	Send SITREP's Will only be available at a specific time(s) for a restricted duration	RADO at each Forward Command	RADO's at all other Forward Commands + Area Command	Messages successfully passed between regional sites	IF AVAILABLE
10/21/2015	85			13:00-1430 hours	**GIS**					
10/21/2015	86	GIS Specialists	**Regional GIS**	13:00-1430 hours	Exchange GIS information between regional sites	Use methods available during the exercise.	GIS Specialists at each Forward Command	GIS Specialists at all other Forward Command + Area Command	Data, maps, and Images successfully passed between regional sites	
10/21/2015	87			13:00-1430 hours	**Telephone**					

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	88	Technical Specialists	**Regional Telephone**	13:00-1430 hours	Establish telephone connectivity between exercise locations via satellite	No cellular or landline			Demonstrate successful regional telephone capabilities	
10/21/2015	89	IL-TERT / RADO	**Regional Telephone**	13:00-1430 hours	Exchange information via telephone with the other exercise locations	Exchange SITREPS	RADO at each Forward Command	RADO's at all other Forward Commands + Area Command	Messages successfully passed between regional sites	
10/21/2015	90			13:00-1430 hours	**Data Networks**					
10/21/2015	91	Technical Specialists	**Regional Data Networks**	13:00-1430 hours	Establish e-mail or other electronic communications with the other UCP's	via Satellite only, no local or cellular data.			Demonstrate successful regional Data Network capabilities	
10/21/2015	92	IL-TERT / RADO / GIS Specialists	**Regional Data Networks**	13:00-1430 hours	Exchange exercise deliverables between the other exercise sites	IAP's, ICS205's, GPS/GIS locations & maps, photos, etc.	RADO at each Forward Command	RADO's at all other Forward Commands + Area Command	Data successfully passed between regional sites	
10/21/2015	93				**Radio Communications**					
10/21/2015	94	UCP / COMT(s) / AUXCOMM	**Statewide Radio Communications**	1430-1600 hours	Set up and communicate to the SEOC locations with HF Voice SSB radios.	Use the Micom radios on Part 90 frequencies AND AUXCOMM HF Radios on amateur frequencies. Use SITREP's from the RADO's. Relays by other stations outside the regions is allowed.	AUXCOMM / RADO's at all other Forward Commands + SEOC	AUXCOMM / RADO at Area Command	Messages successfully passed between all Forward Commands, Area Command, SEOC, other locations as available	
10/21/2015	95	AUXCOMM	**Statewide**	1430-1600 hours	Exchange photos and/or data with the SEOC via non-infrastructure methods. Packet, HF SSTV, or?	Methods need to be infrastructure independent, and approved during planning. Relays by other stations outside the regions is allowed.	AUXCOMM / RADO at Area Command	AUXCOMM / RADO's at all other Forward Commands + SEOC	Data and Images successfully passed between statewide sites	Methods need to be infrastructure independent, and approved during planning.
10/21/2015	96	IL-TERT / RADO / CAP	**Statewide**	TBD	Communicate with Forward Command, Area Command, and SEOC via flying repeater(s)	Send SITREP's Will only be available at a specific time(s) for a restricted duration	RADO at each Forward Command	RADO's at all other Forward Commands + Area Command + SEOC + any other stations on the repeater	Messages successfully passed between all Forward Commands, Area Command, SEOC, other locations as available	IF AVAILABLE
10/21/2015	97	IL-TERT / RADO / CAP	**Statewide**	1500 hours	When Starcom is back in service, communicate with SEOC and other exercise locations via Starcom (all should be on the same talkgroup.	Exercise controller will advise when Starcom is back in service.	RADO at each Forward Command	RADO's at all other Forward Commands + Area Command + SEOC	Messages successfully passed between statewide sites	
10/21/2015	98			**1430-1600 hours**	**GIS**					

	MSEL NUMBER	IMPLEMENTER	SUBJECT	INJECT TIME	IMPLEMENTER CONTENT	NOTES REMARKS	SEND FROM	SEND TO	EXPECTED ACTION	ALERTS and CAUTION
10/21/2015	99	GIS Specialists	**Statewide**	1430-1600 hours	Exchange local GIS / GPS data and photos with the SEOC	Use methods available during the exercise.	GIS Specialists at each Forward Command + Area Command	SEOC	Data & Maps successfully passed between statewide sites	
10/21/2015	100				**Telephone / PBX**					
10/21/2015	101	IL-TERT / RADO	**Statewide**	1430-1600 hours	Exchange messages via telephone with the SEOC	Send SITREPS	RADO at Area Command	SEOC	Messages successfully passed between statewide sites	
10/21/2015	102				**Data Networks**					
10/21/2015	103	IL-TERT / RADO	**Statewide**	1430-1600 hours	Establish e-mail or other electronic communications with the SEOC	via Satellite only, no local or cellular data.				
10/21/2015	104	IL-TERT / RADO	**Statewide**	1430-1600 hours	Exchange exercise deliverables with the SEOC	IAP's, ICS205's, GPS/GIS locations & maps, photos, etc.	RADO at Area Command	SEOC	Data & Maps successfully passed between statewide sites	
10/21/2015	107	**All**	**DEMOB Plan**	1600 hours	**Begin Demod**					
10/21/2015	108	All	**DEMOB Plan**	1600 hours	Break down sites, stow all equipment, prepare to leave site	Safety Officer per site should inspect vehicles to ensure site safety.			Safe Travels by all participants to all home locations.	
10/21/2015		COML(s)	**DEMOB Plan**	1600 hours	Verify all equipment has been turned in and accounted for. Inventory should be performed.				All equipment present and accounted for.	
10/21/2015	109	All	**DEMOB Plan**	1600 hours	All participants travel to home locations				Safe Travels by all participants to all home locations.	

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for IEMA and Madison County EMA as a result of this exercise conducted on 10/20/2015 - 10/21/2015

CORE CAPABILITY: OPERATIONAL COMMUNICATIONS

Issue/Area for Improvement 1- Demonstrate Communications Unit Capabilities	
Some ITECS trailers had equipment issues, for example, two of the repeaters had damaged power supplies, cache radios had out of date code plug configurations, and other equipment seemed inoperable.	
Corrective Action	
Ensure that more scheduled testing and maintenance is implemented	
Capability Element	
Equipment	
Primary Responsible Organization	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/06/2016**

Issue/Area for Improvement 2- Demonstrate Communications Capabilities Area Wide	
HF SSB Communications using the State's Automatic Link Establishment (ALE) network was not available and was not used in this exercise. This is a long range direct communications method that does not require infrastructure, aircraft, or anything other than a HF radio at each end.	
Corrective Action	
Develop training programs that familiarize personnel to the operation of Micom radios and properly program all radios.	
Capability Element	
Equipment	
Primary Responsible Organization	
All Regional UCP's	
Organization POC	
All Regional UCP's	
Start Date: 11/06/2015	**Completion Date: 11/06/2016**

Issue/Area for Improvement 3- Demonstrate Communications Capabilities Area Wide	
Airborne Repeater coverage anomalies on 700MHz	
Corrective Action	
Permanently install a 700MHz antenna to the aircraft	
Capability Element	
Equipment	
Primary Responsible Organization	
Civil Air Patrol (CAP)	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/06/2016**

Issue/Area for Improvement 4- Demonstrate Communications Capabilities Area Wide	
Poor bandwidth on satellite communications	
Corrective Action	
Install 4G technology to all UCP's and ITECS	
Capability Element	
Equipment	
Primary Responsible Organization	
All regional UCP's and ITECS	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/06/2016**

Issue/Area for Improvement 5- Demonstrate Communications Capabilities Area Wide	
Poor bandwidth on satellite communications	
Corrective Action	
Install 4G technology to all UCP's and ITECS	
Capability Element	
Equipment	
Primary Responsible Organization	
All regional UCP's and ITECS	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/06/2016**

Issue/Area for Improvement 6- Demonstrate Communications Capabilities Area Wide	
STR assets have no common frequencies with their area communications centers	
Corrective Action	
Implement a communications plan that provides a local communications centers and response organizations with necessary frequencies.	
Capability Element	
Equipment	
Primary Responsible Organization	
All regional UCP's and ITECS	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/06/2016**

CORE CAPABILITY: OPERATIONAL CORDINATION

Issue/Area for Improvement 1- Establish Area Command	
EOC operations – Only one resource book available to all ICS staff members created delays in decision making between Operations and Logistics	
Corrective Action	
Implement resource data file that can be shared between all ICS Staff members through IPA software	
Capability Element	
Equipment	
Primary Responsible Organization	
Madison County Emergency Management Agency	
Organization POC	
Director Larry Ringering	
Start Date: 11/06/2015	**Completion Date: 11/30/2015**

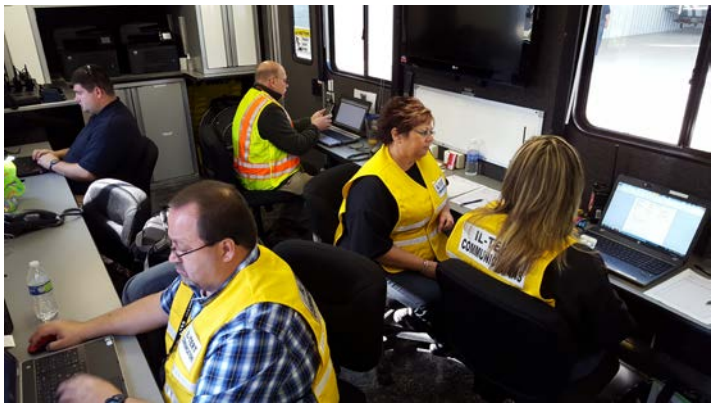
Issue/Area for Improvement 2- Establish Area Command	
EOC operations – Video conferencing technology was available at the time of this exercise but had not been tested prior. Overall this technology work well but procedures need to be put in place to reduce failures in a real event.	
Corrective Action	
Implement training and exercise program for the Polycom video conferencing equipment to all UCP's, and IEMA	
Capability Element	
Equipment	
Primary Responsible Organization	
SRT committee	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/30/2016**

Issue/Area for Improvement 3- Establish Area Command	
EOC operations – IT and GIS technologies need to have a more critical role in EM.	
Corrective Action	
Implement training and exercise program based around emerging technology and consider providing a permeant position within the ICS structure	
Capability Element	
Planning, Organization	
Primary Responsible Organization	
Emergency Management	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/30/2016**

Issue/Area for Improvement 4- Establish Area Command	
EOC operations/Forward Command – The majority of the equipment in the State's NOMAD which was serving as the Area Command was not functional	
Corrective Action	
Implement maintenance and training programs for all personnel responsible for he operation of the NOMADS	
Capability Element	
Planning, Organization	
Primary Responsible Organization	
IEMA	
Organization POC	
Director	
Start Date: 11/06/2015	**Completion Date: 11/30/2016**

Issue/Area for Improvement 5- Demonstrate Coordinated use of COML's, IL-TERT, and Auxcomm	
IL-TERT showed some initial confusion about their role, and how they should initially proceed.	
Corrective Action	
This was IL-TERT's first deployment. They showed that they could rely on their training and quickly overcame their lack of experience in working during this type of exercise/incident. Engage IL-TERT in more exercises	
Capability Element	
Planning, Training	
Primary Responsible Organization	
IL-TERT	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/30/2016**

Issue/Area for Improvement 6- Demonstrate Coordinated use of COML's, IL-TERT, and Auxcomm	
Auxcomm volunteers seemed unsure of their role, and how they should integrate into an ICS communications unit.	
Corrective Action	
This is most likely due to a lack of training and experience. There have only been two Auxcomm courses taught (by DHS OEC), and there are only a small number of graduates in the state. The Illinois led Auxcomm training program has just started up in October. Hold monthly trainings on the equipment in small sections at a time to get people up to speed on what all is available as a resource and to keep the equipment updated and maintained properly.	
Capability Element	
Planning, Training	
Primary Responsible Organization	
EM	
Organization POC	
Start Date: 11/06/2015	**Completion Date: 11/30/2016**



State – Wide Communications Exercise

Madison County Emergency Management Agency

October 20-21, 2015

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