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Exercise Magpie Report for WICEN

Summary
A communications exercise involving Baw Baw Shire, Latrobe City and DHHS was held on Monday 10th December. The background scenario was that there was a widespread electricity grid failure, resulting in loss of power, telephone and internet services. Six WICEN personnel provided radio communication links between the two shires and a relief centre in each. Messages were successfully passed between shires, and within each shire. As an independent part of the exercise, sat phones belonging to the shires and DHHS were tested.

Objectives (and *outcomes*)

1. Demonstrate the ability to establish and operate independent communications between Latrobe City and Baw Baw Shire.

   A secure data link on 3640 kHz, using EMCOM for message handling, was established between Baw Baw Shire's MEC in Trafalgar (Mark VK3MDH) and Latrobe City's MECC at the Traralgon Airfield (John VK3ZRX).

2. Within each LGA, establish a separate communications link between the nominated MECC and a remote location (where a Relief Centre would be established).

   A voice link, using the VK3RWD UHF repeater at Seaview, was established between Baw Baw Shire's MEC in Trafalgar (Gerard VK3GER) and the Relief Centre at the Warragul Leisure Centre (Graeme VK3BXG). In Latrobe Shire, a simplex VHF voice link was established between the MECC at the Traralgon Airfield (John VK3ZRX) and the Relief Centre located at Kernot Hall in Morwell (John VK3JSN).

3. Test the interface between the LGAs (and any other participating organisation that needs messages to be passed) and WICEN.

   Messages handed to WICEN operators were successfully transmitted either via HF data or via voice. A paper-based system was used by WICEN, namely Formal Message forms. In most cases, the messages were received verbally then written onto the forms prior to sending. At the receiving end, the completed forms were handed to the recipients.

   Messages transmitted via the HF data link were printed (at Latrobe MECC) then handed to the recipient. There was no printer at the Baw Baw MEC.

4. Test satellite phone comms between LGAs and other nominated agencies or MEMPC members (eg. DHHS, Loy Yang Power).

Six sat phones (two from each shire plus two from DHHS) were tested successfully, although a couple of calls were directed to voice mail. Each phone made and received a call.

Summary of feedback received from shires, radio operators & DHHS

1. Both shires welcomed the opportunity to see first-hand what communication capability WICEN has and how its radio operators were able to send and receive messages. "This was the first of its kind that I have been involved in but also provided some valuable experience for our fairly inexperienced EMCG staff."

2. WICEN personnel welcomed the chance to work with key emergency personnel from the shires.

3. Messages received by the shire personnel were clear and easily understood.

4. Timing, set up of radio equipment and locations would be more complex for an unplanned event. Need to consider a central meeting point for deployment.

5. Use of a scribe alongside radio operators would be useful. (This is actually done at large activations.)

6. Council staff were not familiar with WICEN's paper-based process (but soon got the hang of it.)

7. Use of 'IN' and 'OUT' trays would improve the flow of paper. (Once again, this is actually done at large activations.)

8. WICEN operators addressed and rectified a number of equipment issues that occurred before and during the exercise - see below for detail.

9. How to contact WICEN if the usual contacts are n/a? (Can be called by VicPol, or can call the State Duty Officer on 8866 1556.)

10. Satellite phones worked satisfactorily, albeit with delays on some calls. Both calls to Latrobe City sat phones reached voice mail; one call was successfully returned. Other calls all worked as planned. It is understood that all sat phone operators went outdoors to make or receive calls, thus highlighting an inherent limitation of sat phones in the context of being set up within a MECC or other indoor location.

11. It is suggested that sat phone callers use a simple efficient format such as exercise name (in this case), name of caller, agency and message.

12. It was suggested that VicPol could have got some value from seeing WICEN's capabilities in this scenario.

Issues specific to WICEN

Technical

a. A short loaded vertical HF antenna on top of a vehicle could not be tuned (later found to be a faulty coax extension cable) so an 80 m dipole supported by a 7 m squid pole was hastily erected. *Learnings: check your gear before an event, or have spares available.*

b. Loss of Bluetooth link between laptop and modem/radio. Resolved by using a cable connection. Fault was in the 2.4 GHz antenna. *Learning: know how your equipment works so that a work-around can be found.*

c. Fault with an RS232/USB dongle used to interface the modem to the laptop. Replaced with a spare to resolve. *Learning: carrying spares can get you out of trouble quickly.*

d. Subsequently discovered: the dongle had the wrong driver due to a Windows10 "update". Reversion to the correct (older) driver cured the problem. *Learning: Beware of undesirable Win10 updates. If possible, block updates for that class of device.*

e. Intermittent loss of audio line on mic cable for VHF radio. Resolved by using a spare mic. *Learning: carrying spares can get you out of trouble quickly.*

f. Intermittent poor SWR on HF vertical, indicating possible intermittent open or short circuit. Equipment will be modified to eliminate a potential cause. *Learning: Wear and tear on equipment can catch us out.*

g. Propagation from the UHF repeater to both Trafalgar and to a link set up at Moe South proved, on the day, to be sub optimal – indeed much more so than was apparent during a test some days earlier. It also seems that the repeater lacked good receive sensitivity. These two factors made copy difficult or impossible at times. A message was passed via the HF data link requesting stations to QSY to VK3RWG. This alternate channel worked well for the short time that it was needed. *Learning: Always have a back-up comms plan and be aware of the possibility of propagation vagaries.*

Procedural

a. Correct addressing (to/from) on the HF data system was not always used. To be resolved with follow-up training.

b. Tracking the delivery of messages received over the data system could be improved. How are we sure that a printed message has been delivered? More work required on the message handling system.

c. On the data system, attempting to send a message when one is already being sent from the other end. To be resolved by further training.

d. WICEN Formal Message pad – what is the correct procedure for handling the pink and white copies? WICEN procedures to be checked for compliance with accepted legal practice for original / copy documents, updated as necessary, and any changes communicated to WICEN operators.

e. Some operators were a bit rusty on formal message procedure, but picked up with practice. One operator has not yet undertaken the message handling training or AIIMS Awareness training. The exercise provided good exposure for both of these areas.

General

a. The two shires chose the exercise date to suit themselves and not WICEN (and this, of course, was perfectly ok). As a result of the exercise being held on a weekday and being scheduled at short notice, we struggled to get sufficient local operators who were not already otherwise engaged on that day.

b. The exercise was 20 minutes late starting mainly due to some of the issues listed in the Technical section above.

c. A noisy environment (at one particular location) made copy difficult. A set of headphones would have been useful (for one operator). (Headphones should be on everyone's equipment list.)

d. Did not have a clock handy, so had to resort to the mobile phone. (Equipment list, again.)

e. A portable 80 m vertical antenna for ease of erection in tight spaces would have been handy. (Exercises are good for identifying shortfalls.)

f. A printer with each of the HF data stations would have improved the message flow. Printers can be modified for LV operation.

g. MECC operators to have name tags and vests displaying their roles. (For a genuine operation, all MECC personnel would generally have name tags and tabards showing their role. This exercise was not testing that particular aspect of MECC operation.)

Exercise Control

a. A slow start on the HF backbone link, combined with less than satisfactory performance of the VHF/UHF link into RWD made initial control difficult, however once the backbone was working, control messages were passed

between shires when there was a gap in official message handling.

b. For a genuine activation, MECC personnel would send messages as soon as the communication channels were working. For this exercise, the staff did not seize the opportunity.

Conclusion

The exercise objectives were successfully achieved and a number of learnings have been identified. These should be taken on board for future exercises and activations.

I would like to thank all those who participated and especially those who travelled from Melbourne.

Chris Morley VK3CJK