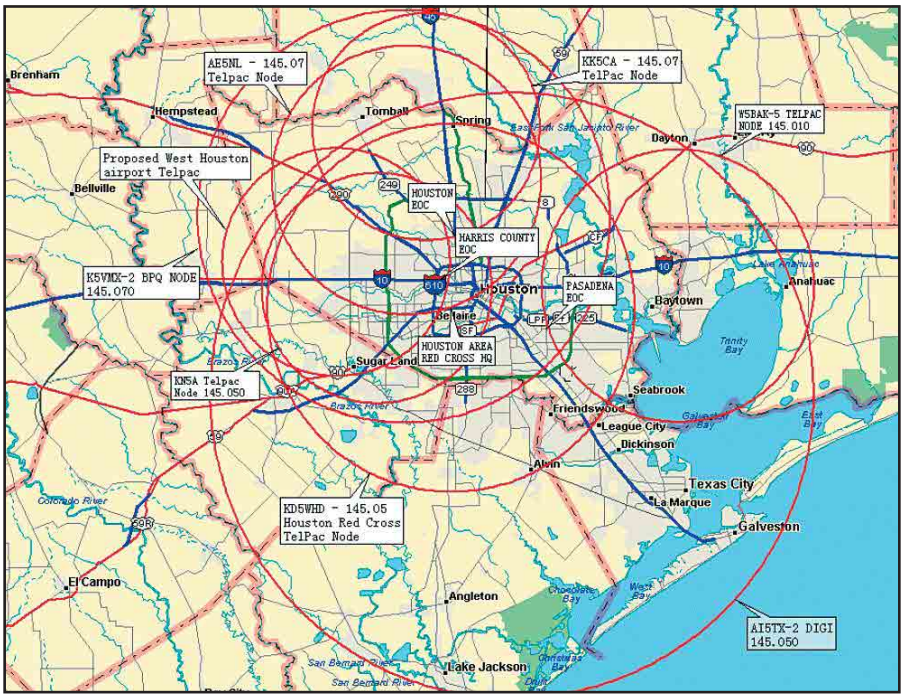
Winlink for ARES—Part II

By Jerry Reimer, KK5CA
ARRL South Texas Section Emergency Coordinator
Note: Part I appeared in August 2004, QST, *pp 82 –83.*



The map showing the Harris County (Texas) ARES Winlink 2000 Digital Packet Network.

Sharing the Knowledge

A presentation was prepared for the ARRL West Gulf Division convention in Austin, Texas in August 2003. On July 23, 2003, the ARRL Board of Directors said there are situations when ARES "…must have the capability to pass traffic across the nation quickly and accurately." This was the perfect statement to introduce the power of the Winlink 2000 modules and features to the ARRL, NTS and ARES leadership assembled at the convention. Compact disks containing the presentation, plans, instructions and software, were distributed to the sixteen ARES Emergency Coordinators in attendance. During the weeks following the convention, additional TELPAC gateway stations became operational in several other Texas cities and counties.

A revision to the Section Emergency Plan recommends ARES groups in the largest population counties utilize Paclink, TELPAC Internet gateway stations and possibly a local PMBO. Less populated counties are encouraged to consider at least one Winlink capable HF PACTOR station. All ARES groups should have portable digital message terminal capabilities, using Airmail or Paclink and hardware controllers. With the various available Winlink 2000 module combinations, an ARES group can now provide maximum flexibility to meet nearly any digital message requirement, local or nationwide.

Paclink

Introduced at the September 2003 ARRL/TAPR Digital Communications Conference, Paclink, a Winlink 2000 client module, interfaces commercial e-mail programs such as MS *Outlook* or MS *Outlook Express* to packet radio. This provides a countywide and nearly transparent, Internet substitute for those agencies using it. Paclink serves as a miniature e-mail server on any *Windows 2000 Pro*, *XP Pro* or *XP Home* edition. It can operate as a single fixed or mobile user, or may be located on a single computer on a LAN that supports multiple user computers within a served agency. To the e-mail program, Paclink is set up as a separate account, just as would be set up for any other e-mail account. The same e-mail program can be used for normal Internet e-mail and for packet. The Paclink mini-server program simply gives the e-mail program access to packet radio, where it continues to use the SMTP e-mail protocol uninterrupted. This greatly simplifies training new users amid the confusion and stress of an emergency incident. It allows the served agency employees to use their *own* e-mail program in their *own* offices transparently, and without having to quickly learn unfamiliar procedures.

Because Paclink may use the optional *AGW Packet Engine* (AGWPE) as a control interface, it enables a wider variety of hardware packet controllers to be used, including packet controller emulation with the computer sound card. Paclink uses the new Microsoft .NET Framework 1.1, which is downloadable as an update for *Windows 2000* or *XP*.

To the e-mail program, Paclink appears as a separate account, much as would be set up for different e-mail users or POP3 servers. The same e-mail program can be used for normal Internet e-mail and for packet. Paclink simply gives the e-mail program access to the packet radio account.

Installing and initially configuring Paclink is a bit more challenging than installing a simple terminal program and hardware TNC, but the capabilities it provides are astounding.

ARES Dedicated Winlink PMBO

To reduce any possible vulnerability and dependence upon the nine existing Winlink mail servers, an ARES dedicated Winlink PMBO has been established in Harris County. Intended to operate primarily on VHF FM, this PMBO distributes ARES digital messages both locally and across the Internet.

Like politics, emergency incidents are overwhelmingly local events. The presence of an ARES dedicated PMBO all but guarantees the ability to move digital messages among the local ARES groups and their customers, quickly and accurately, even when Internet access is not available. When outside Internet access is available, customers outside the local area are served as easily, and nearly as

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quickly, as are local customers. Should all else fail, messages may still be moved beyond the affected area on HF using an SCS PACTOR 3 controller to a myriad of existing Winlink HF PMBOs.

An Addition to ARES Capabilities

Winlink 2000 is proving to be an outstanding addition to the capabilities of ARRL Field Services, providing nearly real-time radio e-mail service for all served agencies and the public. It can work in harmony with the resources of the existing manually operated NTS (National Traffic System) and the NTS Digital services to cover all parts of our county, region and country with ARES providing the connections to the served agencies within the ARRL Sections. Winlink 2000 can greatly enhance the operation of all these combined resources. It is robust in speed, interoperability and ease of use, and can survive the loss of infrastructure. It can provide those we serve with what they need.

With encouragement and support from Harris County Emergency Management and many selfless Amateur Radio operators, the plan continues towards full implementation. Periodic workshops are providing the knowledge and hands-on experience enabling ARES members and the agencies they serve to become confident and efficient in using this system.

There are many packet compatible terminal programs and hardware TNCs with unique features. Some of these are well suited for keyboard-to-keyboard communications. None can approach the integration with the existing Internet e-mail infrastructure and provide our community's served agencies with the capabilities of the Winlink 2000 TELPAC and Paclink modules. Where an existing packet radio network exists, Winlink can become operational very quickly, but an existing packet network is not a requirement. The only question remaining to be answered is which other ARES groups will recognize the imperative need of their served agencies for a flexible and powerful digital message system and simply implement the components of an already existing, reliable and operationally proven digital system. Perhaps, it would be best to ask the agencies we serve. After all, the customer is king!

References

- Winlink Development Team: Vic Poor, W5SMM; Rick Mouthing, KN6KB; Steve Waterman, K4CJX; Hans Kessler, N8PGR.
- Introduction to Winlink 2000, *QST*, June 2002, page 31.
- TELPAC-Winlink 2000's New Telnet Packet Bridge, *QST*, October 2003, page 39.
- TELPAC and Paclink—Streamlined AX.25 Packet Radio Server and Client for a Full Service Ham Radio Messaging Network, ARRL/TAPR Digital Communications Conference, September 2003.
- **www.winlink.org, www.airmail2000.com, groups.yahoo.com/group/telpac-paclink/, groups.yahoo.com/group/wl2kecomm/**.

MOVING TARGET 2004

By Frank Drake, Jr, KL7IPV
Las Vegas Radio Amateur Club Public Information Officer

On April 1, 2004, local emergency services, FEMA and other national organizations held an emergency exercise to test the reactions and capabilities of Nevada's and national emergency services. Personnel in Las Vegas, Laughlin, Carson City, Nevada and Bullhead City and Kingman, Arizona were involved in the exercise called "Moving Target 04." The major incident took place in Laughlin, Nevada, involving a terrorist plan to explode a large dirty bomb in that area. The exercise took place when the terrorist bomb exploded prematurely along the Colorado River in Laughlin and required the response of all agencies. Ham radio operators in Laughlin and Las Vegas were on hand to support the exercise.

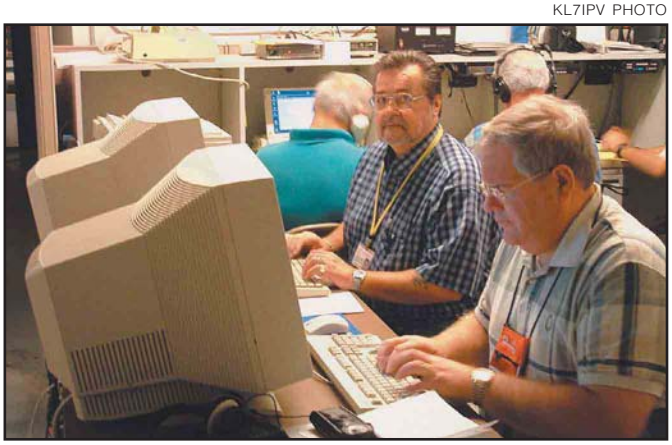
Prior to the exercise, amateurs were asked to sign up to take part in the exercise and were told no more than the name of the exercise and the time of the event. The probable location was known but the timetable and the scenario were unknown to all. Amateur operators were stationed in Laughlin and Las Vegas hospitals, the Clark County Health District and the Clark County Government Center Building. Howard Mark, K3HM, coordinated the amateurs assigned to Lake Mead Hospital, Sunrise Hospital and other hospitals. Coordinating the use of Amateur Radio operators in the Clark County Government Center Building (CCGC) and the Laughlin was Clark County Nevada ARES Emergency Coordinator Charlie Kunz, AA5QJ.

In the Clark County Government Center, the upper level of the building housed the Emergency Communications Center (ECC) for Amateur Radio operators. The building's cafeteria in the lower level had a section separated from the rest of the floor for use by emergency services from Las Vegas Metro Police Dept, Clark County Fire Dept, Clark County Health District, FBI, FEMA by telephone, Clark County, Nevada, ARES and others involved in the exercise.

The exercise was coordinated by the Clark County Office of Emergency Management (CCOEM) in the CCGC and as each part of the scenario was completed, the next step was allowed to proceed. Jim O'Brien, CCOEM Manager, instructed when the next step was to start. Vern Garman, KØEGA, was in the section with FEMA and the others. Vern was the interface for the Amateur Radio community and was in direct contact with the ECC. The ECC relayed to him all traffic received from the amateurs at the hospital locations, CC Health District and CC Laughlin. As each step advanced, Vern let each location know the step and coordinated the Amateur Radio activity with the activity of the exercise.

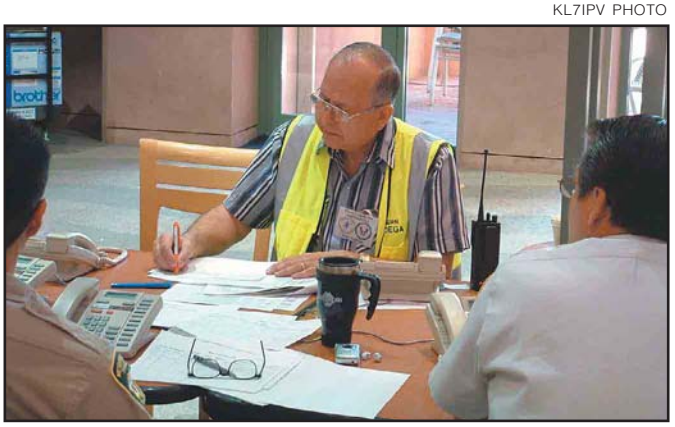
In the ECC, Amateurs manned radio and computers that allowed them to communicate with each of the hospitals, the various emergency services in Southern Nevada, government agencies in Carson City, Nevada and Bullhead City, Arizona and the CC in Laughlin. Radio was used on 40 meters to communicate to Carson City, CB REACT radio on standby

KL7IPV PHOTO



Art Sheldon, K7ZE (left), and Jack Cook, N8RRL, watch the two computer monitors as the exercise progresses.

KL7IPV PHOTO



Vern Garman, KØEGA, was the interface for the Amateur Radio community and was in direct contact with the Emergency Communications Center.

for local communications, VHF and UHF radios on local repeaters located on 7 surrounding mountain tops and 1 repeater in Arizona. Repeaters were also used for the 927 MHz frequencies. Simplex VHF frequencies were used as well, giving the Amateur Radio operators 20 assigned frequencies for the exercise. Two computers allowed the amateurs to follow the events as they occurred from Laughlin and also be in touch with every agency within the CCGC on the closed in-house EOC Web and the Internet. The total communications effort encompassed all the technologies open to the Amateur Radio operators and showed the capabilities available when Amateur Radio ops are asked to participate in an emergency.

The exercise went as expected and the response to the effort was well received by all the agencies involved. The exercise was resolved and closed at approximately noon. Each location of radio operators was secured and most amateurs were released shortly thereafter. Vern Garman, KØEGA, stayed and took part in the final critique. The exercise critique ended at approximately 4 PM.

The Final Message

This was the final message to all after the event took place: "Thank you very much for your participation and execution of the Moving Target 04 exercise which took place yesterday in Laughlin and Las Vegas. We couldn't have done it without you."

From the County's Official Press Release:

"Representatives from more than 30 organizations will participate in a hazardous materials exercise dubbed 'Exercise Moving Target.' The exercise scenario depicts a national threat alert that terrorists may have access to a 'dirty bomb' that they plan to detonate in a metropolitan area in the western United States.

"For the purpose of exercise play only, on the morning of April 1, a white van loaded with terrorists and a radiological dispersion device are traveling through Laughlin. A routine traffic accident investigation on the corner of State Route 163 and Casino Drive in Laughlin prompts the anxiety-ridden terrorists, whose van is close to an accident, to detonate their dirty bomb.

"The explosion creates massive damage, a crater that measures four feet deep and a chaotic scene. First responders arrive on the scene to battle a blaze with the initial thought that this may be the vehicle law enforcement has been looking for.

"One of the training objectives of this exercise is for Clark County's Office of Emergency Management and the Nuclear Waste Division of Comprehensive Planning to refine our impact assessment studies," said Jim O'Brien, Office of Emergency Management Manager.

"Under the Nuclear Waste Policy Act, Clark County is responsible for assessing economic, social, public health, safety and environmental impacts that are likely to result from the Yucca Mountain Project.

"Clark County plays a leading role when emergencies happen, particularly when they rise to the level of a statewide or national crisis. Since the events of September 11th, we have continued to facilitate various exercises, with a stronger emphasis on terrorism and hazardous materials,' said O'Brien."

Amateur Radio was able to provide backup communications to all participating agencies with the 29 Clark County ARES/RACES and 5 Mohave County ARES/RACES volunteers. We tested the capabilities of communications systems including the ARES/RACES, Tri-State 440 MHz, and the MCARS VHF linked repeaters.

Thanks to Charlie Kunz, AA5QJ; Dan Starr, AA7I; Art Sheldon, K7ZE, and Vern Garman, KØEGA, for their help in producing the summary of this article.

Field Organization Reports

Compiled by Linda Mullally, KB1HSV

Public Service Honor Roll
June 2004

This listing is to recognize radio amateurs whose public service performance during the month indicated qualifies for 70 or more total points in the following 6 categories (as reported to their Section Managers). Please note the maximum points for each category:
1) Participating in a public service net, using any mode. —1 point per net session; maximum 40.
2) Handling formal messages (radiograms) via any mode. —1 point for each message handled; maximum 40.
3) Serving in an ARRL-sponsored volunteer position: ARRL Field Organization appointee or Section Manager, NTS Net Manager, TCC Director, TCC member, NTS official or appointee above the Section level. —10 points for each position; maximum 30.
4) Participation in scheduled short-term public service events such as walk-a-thons, bike-a-thons, parades, simulated emergency tests and related practice events. This includes off-the-air meetings and coordination efforts with related emergency groups and served agencies. —5 points per hour (or any portion thereof) of time spent in either coordinating and/or operating in the public service event; no limit.
5) Participation in an unplanned emergency response when the Amateur Radio operator is on the scene. This also includes unplanned incident requests by public or served agencies for Amateur Radio participation. —5 points per hour (or any portion thereof) of time spent directly involved in the emergency operation; no limit.
6) Providing and maintaining a) an automated digital system that handles ARRL radiogram-formatted messages; b) a Web page or e-mail list server oriented toward Amateur Radio public service —10 points per item.

Amateur Radio stations that qualify for PSHR 12 consecutive months, or 18 out of a 24- month period, will be awarded a certificate from Headquarters upon written notification of qualifying months to the Public Service Branch of Field and Educational Services at ARRL HQ.

845 AB2IZ
555 W7TVA
545 N2LTC
435 KC2HUV
410 N2YJZ
392 W2MTA
378 N2YBB
370 KB2DQ
365 KA2ZNZ
340 K4BEH
330 KC2MBC
322 AD5KE
290 K8AE
280 K2MPE
275 WB1CHU
265 W5IM
250 WA9ZTY
240 KB2KOJ
KZ7T KB2SNP
236 KA2GJV
234 KC2MHI
231 WA1QAA
227 N7EIE
225 WB1CHU KB2CCD N2ECR
221 NN2H
220 W2FPG
WB2ZCM W2LC
215 N2QZ
205 WI2G
204 KK3F AL7N
203 W5OMG
202 KB5PGY K2ABX
200 W8MMN KB3GFC W7ARC
AC5XK KB2SNP
195 K9JPS
191 KA0DBK
190 N8IO
185 K2AN KC2MQU
177 KA2BCE
176 N2JRS
171 KC0HOX
170 N3YTD K5ER
159 AD4BL
158 KC8VOA
156 KB5JBV
154 NC2F
153 KD5CZM
150 N2JBA WA2YBM N1LKJ K5DPG
149 K7EAJ
143 K8KHZ KB2ETO
142 KA9RZL
140 K9LGU K7BFL KA5KLU WB5ZED
139 WB4NCW
138 N9VE
135 WB7WOW KE4JHJ
133 NN7H KO4SY
131 KA0O KV5AN
130 W3ZQN N9RGX WX4J W4EAT N2GJ
125 N1IST
124 WB8RCR
120 K2UL KW1U W1GMF K9FHI AG9G N5OUJ K4IWW AD4XV W4DAC AC5VN W3BBQ N2AKZ
118 KD5TXD KD5ONS
115 WA2YL W7QM N8IY N3RB WA9JWL
111 N7LV
110 WD8Q N3SW N1IQI KB9KEG W9BHL KC5OZT KD4CQJ WX4H W7GB K3JL K6YR W5GKH AD5IS W0UCE AB0WR NF5B N5KWB K5MC AF4NS WA5OUV KE4OLE AB4XK N7CM N7YSS
109 N0ZIZ
WB2KNS
108 KB5ILY
107 K2GW WA2GUP W5CU
106 W3CB
104 N8FXH W5PY
102 W2DWR KB0DTI N4FNT
100 WN0Y WA8SSI K1YCQ N1TPU W9CBE KB5TCH W4ZJY NR2F N9MN W7GHT N5SIG AA8SN KG4OQA KC2EOT WB2QIX KK5GY KG4OTL W4CAC N4ABM K0IBS KB4LCI K3SS N1VXP K4SCL W1QU KB2KLH KC2GOW
99 W0HXB
98 W1ALE
96 KJ7SI K8CQF WD4LSS AI4DV
95 WG8Z AA3SB K3CN KK1A
94 W6QZ W4NTI
92 W9NXC
91 W2CC WA1JVV
90 KCUTL W3TWV N3KB N3WK N3OR WA2CUW W2QOB W9RCW W4CKS K2BCL W8IM K1JPG KF4WIJ N7YSS W7ZIW W5UYH WB7VYH W6ZOH KF6OIF KG2D WB2IJH K4FUM WB4GGS W4WXA N1JX K2VX KA1GWE KA1RMV N7DRP
89 WB2LEZ W7VSE
88 N0QR
86 WB6UZB
85 AA3GV K9DQ
K2YYF W5XX AF2K W2DSX
84 AE5V
82 K3IN W4FAL
81 KC2IYC KA7TTY W3NJ K4WKT KC7SGM
80 WW3JC N3ZOC AB7AN K7MQF K7GXZ W8CPG K8KV AA4YW WA0LYK W2MTO NX1Q KC4ZHF KD7ZLF
76 KI0BK AC5SU
75 KA2YKN WB4BIK
74 K6JT
73 KC6SKK WA1YOF K4DND
72 KC6NBI K4BMH
71 W4DLZ
70 KB1CVH W4DGH KC8BTE N2VDK

The following stations qualified for PSHR in previous months, but were not recognized in this column: (April) AB0WR 110, KB0DTI 97, AB0UY 95, N0ZIZ 93, KI0BK 92, WA0LYK 80. (May) KZ7T 310, K4BEH 120, AF4NS 110, N1YQU 100, K4FUM 90, W4WXA 90, K4WKT 90, WB4GGS 90, W9NXC 90, WB4BIK 80.

Section Traffic Manager Reports
June 2004

The following ARRL Section Traffic Managers reported: AK, AL, AR, AZ, CO, CT, DE, EMA, ENY, EPA, EWA, GA, ID, IL, IN, KS, LA, MDC, ME, MI, MO, MS, NC, NE, NFL, NH, NLI, NNJ, NNY, NTX, OH, OK, ORG, SB, SDG, SFL, SJV, SNJ, STX, TN, VA, VT, WCF, WI, WMA, WNY, WPA, WV, WWA, WY.

Section Emergency Coordinator Reports
June 2004

The following ARRL Section Emergency Coordinators reported: AK, AZ, CO, EWA, GA, IN, KY, LA, MI, MO, NC, NE, NFL, NLI, NNJ, SD, SFL, SJV, SNJ, STX, SV, VA, VT, WMA.

Brass Pounders League
June 2004

The BPL is open to all amateurs in the US, Canada and US possessions who report to their SMs a total of 500 points or a sum of 100 or more origination and delivery points for any calendar month. All messages must be handled on amateur frequencies within 48 hours of receipt in standard ARRL radiogram format.

Call	*Orig*	*Rcvd*	*Sent*	*Dlvd*	*Total*
KK3F	26	1166	1122	44	2358
WB5ZED	70	1127	1054	42	2293
KA5KLU	0	954	883	37	1874
N2LTC	0	789	789	43	1621
KW1U	0	805	722	3	1530
N1IQI	0	365	1129	0	1494
W1GMF	0	382	998	35	1415
W4EAT	0	693	668	3	1364
AB0WR	0	541	623	0	1164
N5SIG	12	599	460	56	1127
K7BDU	16	535	562	6	1119
K9JPS	0	524	32	511	1067
AE5V	3	497	426	40	966
W4DAC	9	430	413	26	878
WX4H	0	324	464	11	799
KF4WIJ	0	345	342	21	708
W7TVA	51	233	206	78	568
NRZF	70	198	254	7	529
KA2ZNZ	34	233	226	23	516
W9IHW	0	252	43	216	511

BPL for 100 or more originations plus deliveries: KK5GY 186.

The following station qualified for BPL in previous months, but was not recognized in this column: (May) WB4GGS 502. (April) K2YFF 133.