



RAY~Link

Issue Forty Eight
October 2003

The Regular Newsletter of The Radio Amateurs' Emergency Network

This edition of RAY~Link has been sent to all registered members who have provided an e-mail address, and to Group Controllers who do not have e-mail facilities, and they are asked to let their members who do not have e-mail facilities see it

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RAYNET AGM

The Network's Annual General Meeting will be held in County Hall, Finchdale Road, Framwellgate Moor, DURHAM, on Saturday 1st. November. A full day's programme has been arranged, and it will broadly cover the past, the present and the future. Doors open at 09:45, with the Welcome and first presentation starting at 10:15 hrs.

Three souvenirs have been arranged, but members are asked to note that these must be ordered in advance. As there will only be one purchasing run, no re-ordering will be possible. A description of the items, and an order form appear elsewhere.

RAYNET Supplies will be in attendance, but to ensure that your order is complete, please send it to RAYNET Supplies, 85 Eastwoodmains Road., Clarkston, GLASGOW G76 7HG to arrive by 15 October 2003

NEW CHAIR-ELECT

Cathy Clark, G1GQJ, was unanimously elected Chair-Elect at the September Committee of Management Meeting. She will succeed Ron Cowan, GM4SRL, when he stands down at the end of the year.

Cathy does not need any introduction, as she is one of our most active members, She is currently ZC6, group controller of the Aylesbury Group, is minute secretary for the Committee of Management, and chairs the Emergency Planning Committee. She has had a major input in the RAYNET Manual update, and formerly chaired the Training Team.

Cathy said that she is content with the way the Committee of Management has been responding to the many challenges it faces on a regular basis, and will continue with the policies which it is currently following. Whilst doing so, she is certain to put her own stamp on many of the projects which the Network undertakes over the next few years, thus ensuring that we go from strength to strength.

**Membership Fee 45p. per month.
PAI £1.37 per year or part year
(1st May - 30 April).**

*All correspondence and membership registrations should be sent to:-
"Hunters Moon", Newton-le-Willows,
BEDALE, North Yorks, DL8 1SX*

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“SEE HEAR” Autumn 2003 - Geoff Griffiths, G3STG

I guess that most RAYNET members will either get the usual UK Radio Amateur magazines, or be able to get access to them through their Group or Club.

Over the years, it has always proved very difficult to get RAYNET items into the magazines. Radcom used to carry bi-monthly column devoted to our activities, and this was always a good way of getting our information and publicity out to Society members, but no more. “Practically Witless” has a very supportive editor who always says he will publish any good items from the Network, but they never seem to appear. Where are all our budding authors?

The situation is quite different in the States. Both QST (Radcom ARRL equivalent) and CQ magazines, that delight of the DXer always carry a lot of items of interest, and news of the latest Volunteer Comms activity, especially after September 11!

Here are some brief notes on items you may not have seen, or maybe missed.

Hardware I know that making RF connections is a basic skill, but are we all confident in dealing with a Female N-type on W103 for instance. Easy after the first couple of times, but where do we get the advice from the first time? Try CQ May 2003 pp73 and save lots of cash.

An interesting article on the use of **ATV for Emergency operations**. SSTV was put to practical use in California during a simulated exercise about a volcanic eruption, and SSTV pictures were transmitted on 40m across the State. In another operation, a Pennsylvania Group successfully sent FSTV over a 17 mile path length on 1.2GHz under emergency conditions. (CQ January 2003 pp56-58)

If your Group needs a **stand-by generator**, then read the review of the Honda EU2000i in QST November 2002 p61, and contact Honda at www.hondapowerequipment.com/gen.htm for UK equivalents

Construction A very useful article on practical methods of using surface mount devices, and gave lots of useful tips for constructors. (CQ April 2003 pp36-40)

And some very neat mobile installation ideas in CQ May 2003 pp62-66

Ever been caught with a flat car battery at the end of an event? Try looking at the **Load Shedder** project which is easily put together, and provides warning of falling voltages, eventually disconnecting the rig, so that you can start the car and give your battery a boost. (QST February 2003 pp61-63)

Operations “Hams” were reported as playing a vital role in the search for Shuttle wreckage over an enormous area of the Western USA in February. ARES members in Anderson County Texas, said that they immediately opened up their 2m nets upon hearing of the tragedy. KB5JHW said that they “don’t generally wait to be called out. We hear about the need and just go ahead and respond.” Debris was eventually identified in no less than 38 Counties by many Groups. The operation eventually lasted over a three week period with about 75 operators a day for the entire period. The official reports said “FBI teams specifically requested amateur radio operators for their team due to their excellent

reliability and efficiency” The tragedy was made all the more poignant since three licensed amateurs were in the shuttle crew. (CQ April 2003 p4,11-16: May 2003 pp36-39) “Hams helped when massive power failures struck North Carolina in December 2002, and the RED Cross said “you guys are life savers!” (QST April 2003 pp80) and worked with the local Sheriffs in the Los Angeles area during extensive bush fires in January (QST August 2003 pp) Grab bag - what one American volunteer has in his grab-bag -- good practical reminders of what we should all know. (CQ April 2003 pp81-83)

MARS has been providing Radio Communications back home for American troops stationed in the middle-east. A combination of radio and internet was used to ensure that enemy forces were unable to DF the location of the signals. (CQ June 2003 p45)

Other **ARES and RACES** operations reported this year include wildfires in Western USA (QST June 2003 pp78,79) and Arizona (QST November 2002 pp50-52)

An article in September entitled **APRS and Search and Rescue** contains lots of information about the practical use of APRS during SAR, including the use of mobile digipeaters to extend the range as the search area widens. There are also some useful insights into preparing suitable equipment, for what can be an arduous task. (QST September 2003 pp75-77) Training Following the massive financial support given to ARRL by the US government, the Amateur Radio Emergency Communications Courses are going strong at three progressive levels. Don’t forget that these courses are available through the web, and I am reliably told that they are well worth doing for UK members. (ARRL <http://www.arrl.org>)

The **annual simulated emergency** test in the USA is scheduled this year for 4 and 5th October. This sees tests of Amateur Radio emergency-operating skills on a national basis. The test is a great opportunity to show local communities how communications Volunteers can support them in times of real emergency. (QST September 2003 p47)

Politics? The August 2003 CQ announces that ARRL and the USA Homeland Security Department have signed a formal affiliation agreement. This calls for collaboration on promoting public awareness, and providing training and accreditation for volunteer “hams” Wouldn’t it be if the UK government were as positive about relations with volunteers! (p4)

The ARRL and the American Red Cross announced a renewed and updated joint **Statement of Understanding** in January this year. This develops the joint working agreement and practices between the Red Cross and Emergency Comms volunteers, including the sharing of current data and plans for disaster relief. (QST January 2003 p12)

And finally? Well if all that hasn’t provided some ideas for the 2003/2004 programme, then I will eat my RAYNET cap! Due acknowledgement is made to QST published monthly by the American Radio Relay League, 225 Main Street, Newington, CT 06111-1494 and to CQ published monthly by CQ the Radio Amateur’s Journal, 25 Newbridge Road, Hicksville, NY 11901-9962. If you have major problems finding any of the articles quoted here, then please send me an SASAE and I’ll see if I can help.

73 until next time G3STG

EXERCISE "IRONMAN 2003" - Rob Burrows, G6DUN John Stacey, G0VPJ

Dorset RAYNET was approached early this year by the organisers of "Ironman Inc." to provide communications for an event scheduled for the 31st. August which was being moved from the Llanberis area in North Wales and based on the Sherborne Castle estate in North Dorset.

The event this year was to be a Half-Triathlon comprising:
1. A 1.2-mile swim in the Castle Lake; 2. A 56-mile cycle-ride on a road course from Sherborne towards Dorchester and back. 3. A Half Marathon (13.5 miles).

The Dorset RAYNET management committee considered what was involved with the event and it immediately became apparent that the main problem would be communications over the cycle course, which was to run from Sherborne to the north of Dorchester and back. This was due to the nature of the terrain and the number of radio "Black Holes" in deepest Dorset. This training exercise was thus to become the largest communications event put in place by Dorset RAYNET.

John, G0SKR, Controller for SE Dorset and Keith, G4GCA, Deputy County Controller, and Terry, 2E1EJC as Police liaison, agreed to take on the co-ordination task. Signal paths were checked with several mapping exercises, and it was decided that two talk-through units would be required working back-to-back, i.e. VHF to UHF/UHF link to VHF. One talkthrough unit was to be located adjacent to the Dorset Police Mobile Control Vehicle positioned on a high point in the Castle grounds, and the second to be sited on Giant's Head Hill above Cerne Abbas.

The Dorset RAYNET Mobile Communications Support Unit (CSU) was located at the hub of the event in the Castle grounds where the action at the Start/Finish could be observed. Operators were reminded at the pre-event briefing to allow a short pause at the beginning of all transmissions for the two talk-through units to latch. The excellent planning by John, Keith and Terry paid off, and with operators drawn from groups within and outside the county the event ran like clockwork. Due to the early start required, operators had to be on station by 06.45 and with road closures in place from 07.00, many members travelled to the site on the Saturday and brought their caravans, motor homes and tents to stay overnight. This brought a nice social aspect ~~to the event that was enjoyed by all.~~

Sadly John G0SKR was taken ill a few days beforehand and was unable to enjoy the benefit of his efforts on the day, so County Controller Rob G6DUN stepped in to run Control. At short notice the organisers requested operators for two additional lead cars and an extra ambulance. All communications changes were catered for, proving the flexibility of the event planning and how RAYNET could adapt to the challenge. As well as the fixed bases, RAYNET provided two highly effective motorcycle patrols. A total of 38 RAYNET Members were operational on the event.

The User Service for the event was Dorset Police Service and their Mobile Control Unit was operated by one of their staff who is also a Dorset RAYNET member. This worked well providing even better co-operation. Another operator was also a recently retired member of Dorset Police and with his assistance we were able to communicate directly with Dorset Police Control throughout the event.

All operators were on station on time. However, fog, which had formed overnight on the lake, delayed the start of the event by 1-1/2 hours. This gave all operators the benefit of additional time to recheck equipment. It was all functioning perfectly, with information flowing to and from the organisers and the Police. RAYNET traffic was monitored in the Police Control Unit, and the only problem that occurred during the event was when a distant station was picked up by the talk-through on the UHF back to back frequency (438.500), effectively locking the system up. The operator at the Giant's Head talk-through location immediately lowered his mast, thus eliminating the interfering signals and 100% communications were restored.

Five emergency calls were received during the event; each being passed to the St John Ambulance team within seconds due to the collaboration set up with the Blue Light services. There were 1600+ entrants plus their supporters and spectators. The first 30 competitors from this year's event go forward to Ironman in Hawaii in 2004. Next year's event is expected to be a Full Ironman Triathlon comprising a 2.2 mile swim, a 112 mile cycle ride and a full marathon.

Dorset Police have advised that they were very impressed with the RAYNET communications capability on the event. An article will be appearing shortly in Practical Wireless magazine with full details of Ironman 2003.

Details of Dorset RAYNET are available on our website at www.dorsetraynet.org.uk

HERTFORDSHIRE RAYNET (AND FRIENDS!) AT ROBBIE WILLIAMS CONCERT - Martin Green, G4PMG

Hertfordshire were asked in March by St John Ambulance to support them at a major event to be held over 3 days in Knebworth Park, nr Stevenage following their appointment by the promoters as prime First Aid provider.

The event took place on Friday, Saturday and Sunday the 1st, 2nd and 3rd of August 2003 and RAYNET's prime role was to provide the logistics and administration net for St John Ambulance and to provide an overlay/backup for their 4 nets. The size of the event saw ticket sales of some 125,000 people each day which together with people working on site saw over 400,000 on the site, this is believed to be the largest planned gathering in Europe in 2003.

The requirement was to provide communications at 6 First Aid Posts in the main arena area, the Medical Centre, St John HQ in Stevenage and the Railway Station (towards the end of each day) as well as a control co-sited with the St. John Control & BHAPS (Bedfordshire & Hertfordshire Ambulance Paramedic Service) local control. The operation was from 1000 to 0200 the next day on all 3 days.

As the planning progressed and the role of RAYNET became firmer it became obvious that support from outside the County would be necessary. Eventually this event would also involve RAYNET members from London, Suffolk, Wiltshire and Cheshire working for single or multiple days. Indeed some 1450 man-hours by 33 people were recorded. This group of people, who had probably never met before, let alone worked together, showed the strength of RAYNET in producing a seamless response.

To minimize net traffic the need to seek permission to take breaks at the First Aid points was overcome by staffing each point with at least 2 operators who mutually agreed cover at all times. This worked particularly well.

Some RAYNET personnel were asked to accompany First Aiders into the crowd. This was invaluable but daunting work for those involved but it provided essential links back to their First Aid Posts and of course Control. This was purely a voluntary activity as it was quite a challenging environment in which to work.

Handhelds capable of operating on 2 and 70cm were required together with spare charged batteries. Apart from one or two isolated battery failures towards the end of the day, quickly rectified, there were no equipment problems.

Whilst the Controls were co-sited it was noticeable all 3 Service Controllers (SJA, BHAPS & RAYNET) stood in the common grass area outside the control vehicles when life was becoming a little "interesting". In the debrief all 3 parties agreed that a common control room was desirable at any future event.

Noise levels, sorry Music levels, were such that traffic was

passed during the quieter times between numbers. Even noise canceling mikes could not cope with the levels making receiving at control impossible at times. Ear defenders at the First Aid points aided traffic reception in that direction

RAYNET car parking was off-site in Stevenage and a dedicated shuttle bus using emergency services routes transported people onto the site, after a first night hic-up this generally worked well. Especially as the Car Parks took up to 5 hours to clear!

RAYNET expertise was to be found to be useful in many ways, and not just passing traffic on our net. This included an ambulance that saw its dashboard dismantled whilst the SJA radio was transplanted for another (apparently the patient continues to make good progress following our intervention!) One first Aid point saw the SJA frequencies suffer from emc problems from the stage rig and RAYNET was able to provide the only comms to this location during the event - underlining the importance of our attendance.

We were pleased to support St John Ambulance at this large high profile public event and welcomed the opportunity it gave to publicise RAYNET with our user services and work with RAYNET members from other groups. The St John Ambulance "washup" session was extremely complimentary at the level of professionalism and the way RAYNET rolled their sleeves up. Indeed we elicited a spontaneous round of applause in appreciation of our work!

Following the event Brian Heron-Edmonds, St John Assistant County Commissioner (Operations), wished both St John Ambulance and his personal thanks to be communicated to RAYNET for a job well done. He was very pleased with the balance achieved in support of his people between involvement and remaining independent message handlers. He acknowledged the skills that we showed in passing messages under difficult circumstances, together with how we deployed our technical skills.

If you are ever in the position of having to respond to an event of this size and would like more information or support then please contact Martin Green, G4PMG, who learnt a few things(!) in managing this event. Martin can be contacted by e-mail at g4pmg@raynet-uk.net.

Oh, and if you didn't know the performers were The Darkness, Ash, Kelly Osbourne and the headline act of Robbie Williams. You may have seen the live coverage by channel 4, but despite being briefed to ensure RAYNET badges were turned to the cameras picking out our 30 folk from amongst the 125,000 crowd proved just a little too difficult!

Letter to the Editor 7 June 2003 - from Warwick Hospital 10-11 May 2003

Dear Sir,

May I through your columns express a public thanks to all of the RAYNET members who travelled to Warwick Hospital for the night of the 10 to 11th May 2003 to assist the Facilities Department of the Hospital with Emergency communications while the main telephone switchboard was undergoing an upgrade.

A total of 26 members attended from as far away as Cumbria in the north and Luton (from South London Group) in the south to assist the local Warwickshire members and their friends from Banbury, Coventry, Milton Keynes, Oxford and West Midlands

.After what was initially a short notice call from the hospital, the date was changed allowing for a more leisurely preparation period. In several ways this was to complicate matters because there was time to think of all the other alternative ways of fulfilling the basic requirements. The revised dates also clashed for some groups with pre-booked and long standing regular commitments which still had to be honoured. It took a considerable number of telephone calls and e-mail messages to resolve the different situations.

To summarise the technical side of the operation the 'KISS' principle was used to good effect. Two separate 2 Metre channels were used, one designated for 'Admin' and the second for 'Emergency' use only. The 'Emergency' channel being the one that would be continually monitored by everyone using earpieces or headphones. All other traffic was handled on the 'Admin' channel. Only if requested by a member of the emergency on-call staff were our members told to use an 'open' speaker.

Control operators monitored both channels continuously using separate transceivers co-located in a small temporary control room adjoining the main telephone operators room and near-by equipment room. A simple loudspeaker extension was set up using the **CAIRO** system so that the telephonists and senior

managers in attendance could hear any traffic on the emergency channel and so get instant knowledge of activity while remaining detached from the support type of radio traffic.

Temporary 'white stick' type omni-directional antennas were located externally at 18 and 23 feet. The hospital engineer required low power operation throughout to reduce or avoid any possibility of RF problems in sensitive areas. This arrangement worked excellently coupled with basically quiet operating and use of the Abbreviated Procedure technique as described in the Voice Procedure Manual. As it happened the night turned out to be one of the quietest experienced by the hospital for emergency and other incidences. Message traffic on the admin channel about telephones ringing in different areas when the system was supposedly turned off proved to be most useful to the managers who were in the control area, in effect monitoring the use of dedicated lines and progress of the work.

Unseen by the majority of the RAYNET members was the fact that the Accident and Emergency also Admissions Department were just moderately busy. Traffic on the emergency channel was only of the 'radio-check' type on specific request. However, thoughts were in the minds of several of the local Warwickshire members of the horrific collision on the M40 a few years ago involving a minibus loaded with school children and just how the night could have been a lot different.

Several times during the evening the control room operators received congratulations on the professionalism of the RAYNET operation and everyone was thanked for their part in it. The work was due to finish any time between 2 and 4 am but after successful tests the stand down came at about 1.30 am.

GOMRH CC. Warwickshire

Zone 6 involved in radio recycling programme - Cathy Clark, ZC6

Leicester Show 2002 and I arrived at the RAYNET stand on the Saturday morning, prepared to lay out Supplies ready for the opening of the show. But something else has caught the eyes of my companions - a stack of radios on the Rugby Amateur Transmitting Society's stand next to ours. So began the zone's association with the Ascom SE 550 4m radios (also known as a Condor).

Being a firm believer of "use it or lose it" as far as frequencies are concerned, we had for some time been looking at the possibility of reasonably priced radios on bands other than 2m and 70cm. These radios were ex-Severn Trent Water and had been pre-programmed for the 4m FM channels.

Initially, ten radios were purchased. However, RAYNET members who visited the stand were directed towards the source!

Zone 6 have around sixty of these units throughout the various counties, and are currently conducting inter-area comms tests,

prior to a zonal coverage test during the winter of 2003-4.

On the Philips Tour of Mull Rally in October 2002, the APRS net was partially conducted using these radios. This year, the entire data network will use Ascoms.

The radio itself is fully synthesised, programmable with the right leads and software if required. Programming software is available on a Dutch website, but needs translation! RATS also had a CD-Rom available, which contained a full workshop manual, though the quality of the circuit diagrams was not brilliant. A user group has been set up - Ascom-Radio@yahoogroup.

Other water companies may also have these redundant units hidden away - and may be enticed to find them a good home.

Originally, these radios were sold for £15 each and may be available for similar prices at rallies. However they are now selling on e-Bay for £75-80 each!

5 MHz Experiment

The RA announced on the 23rd September that they were prepared to resume the issuing of Notices of Variation for the 5MHz Experiment. The experiment allows FULL Amateur Radio Licence holders access to five channels around 5MHz to undertake experiments. The aspect of interest to RAYNET operators is the reliability and predictability of the band for our use compared to the densely occupied 80 & 40m bands.

RAYNET members interested in joining the experiment can obtain the relevant application forms and further information from :-http://www.rsgb-hfc.org.uk/5MHz_nov.htm To assist in the processing of applications you are encouraged to mention the Emergency Communications aspects and your RAYNET group membership on the form.

Radio Tests Mike Hooles. G3LGR

(This item was submitted following the previous article on Tunnel Testing.) Ed

Following the loss of the Occidental Piper Offshore Oil Platform, in which it was alleged that radio communications could not be established between the people in the steel shelled living quarters and rescue vessels, Ray McDonald (BP) and Myself (Amerada Hess) performed a short series of trials to determine the effect of fire on UHF radio waves and possible plasma effects. We performed the tests in a specially fire brick lined tunnel at Buxton. Test 1 was free space - no problem Test 2, we sealed the tunnel with aluminium cooking foil - the signal dropped by 40dB plus confirming that there was no significant path round the tunnel through the granite walls. Test 3. Foil removed and a 1 metre deep oil based fire ignited. - less the 0.5dB extra loss due to the fire was measured. Following this a series of trials was performed elsewhere to determine the effect of UHF radio waves through a high density salt water deluge (20 tons per minute). Again no significant attenuation measured.

Surrey RAYNET computer program.

Surrey RAYNET have found it necessary to use beams on a couple of jobs recently and the minor problem of aiming accurately came up. To solve this problem, Brian Davies G3OYU has written a WINDOWS program to calculate both bearing and distance between any two NGRs. Nigel Watson G1XBV (CC Surrey) and a couple of other members have been testing the program and find it a great help.

If anyone is interested in the program, contact Brian at briandavies@thersgb.net

And Finally

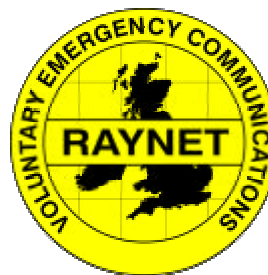
A Plea on behalf of Registrations.

Ron Cowan, GM4SRL

If you require to notify registrations about a change to your details, the preferred method is via our website. Please note, however, that although the forwarding of corrections is electronic, Mike Barker has to make the changes manually. He does this once each week, giving priority to new registrations.

Please, therefore, only make one notification. Multiple requests are time consuming as they have to be checked out each time.

All our "staff", including registrations, are volunteers, like you and me. Please help to make it easy for them!



“50 Years of Service” Souvenirs.

To mark 50 years of Service to the Community, the Radio Amateurs’ Emergency Network has arranged for three souvenir items. All will be available for collection at the AGM in Durham.

The first is a special mug, with the “50 Years of Service” artwork on one side, and the Network’s round logo on the other. The cost is £4.50 for one mug, or £25.00 for a pack of six.

The second item is a fold-over clipboard, which carries an outline sketch of the “50 Years of Service” logo. The cost of the clipboard is £6.00.

The third souvenir item is a PAL torch, which, although small enough to fit into the palm of your hand, has four functions (glow, battery save, bright and flashing) and runs off a PP3 battery. It carries the “50 Years of Service” logo on one side, and costs £11.00

All these items are special limited editions, and will not be re-ordered. It is suggested that groups/counties/zones pick up orders for any local members who cannot attend the AGM, and arrange for them to be collected locally. To facilitate easy ordering and dispatch, simplified post and packing charges will apply.

The post and packing charges for items not uplifted at the AGM are as follows:-

One Torch	£1.50
One Mug	£2.00
One Clipboard	£2.50
Two items	£4.00
Up to six mugs, one clipboard and one torch,	£5.50

Multiples will be charged as such, e.g. twelve mugs and one torch would cost £11.00 for post and packing.

Please fill in and return the attached order form, and send, with your remittance to:-

RAYNET Supplies, 85 Eastwoodmains Road, Clarkston, GLASGOW, G76 7HG, to arrive by 15th. October 2003.

Remember, this is a “once off” opportunity, marking 50 Years of Service to the Community.



RAYNET Supplies

85 Eastwoodmains Road, Clarkston, Glasgow. G76 7HG
Phone 0141-638 0732 Fax 0141-621 1000
email supplies@raynet-uk.net

“50 Years of Service” Souvenirs.

This form should not be used for regular RAYNET Supplies orders, or for orders which include regular Supplies items.

Purchaser's Details (Please print clearly!)

Name

Callsign

Address

Postcode

Date

Telephone

Group code (Printed on the back of your membership card.)

Email address

Qty	Description	Members' Price
		£
		£
		£
		£
		£
		£
		£
	Add Post & Packing (see below)	£
	TOTAL ENCLOSED	£

Post & Packing Charges

One Torch £1.50

One Mug, £2.00

One Clipboard, £2.50

Two items, £4.00

Up to six mugs, one torch and one clipboard, £5.50

For multiple orders, add the post & packing charges together
e.g. Twelve Mugs, two Clipboards and one Torch. £11.00

