



*This edition of RAY~Link has been sent to all registered members who have provided an e-mail address, and by post to Group Controllers who do not have e-mail facilities. Controllers are asked to ensure that all members of their group have sight of a copy of this edition*

**Membership Fee 45p. per month.  
PAI £1.50 per year or part year  
(1st May - 30 April).**

## In This Issue

**Emergency Planning - Pages 3**

**Zone Reports - Pages 4 - 9**

**Revolution in Glasgow - Pages 10**

**Portable masts - Pages 11- 13**

**Employer Liability Certificate - Page 14**

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## 2005 AGM 5th November - Coventry

Accommodation is available at the Innkeepers Lodge, Brinklow Road, Binley, Coventry, CV3 2DS at a cost of £49.95 per room per night. Booking can be done on-line at [www.innkeeperslodge.com](http://www.innkeeperslodge.com), selecting "Coventry" as the location, or by telephone to 0870 243 0500

A meal is being arranged at the Toby Carvery at 19:00 hrs on the evening of Saturday 5 November at a cost of £6.45 - choice of turkey, gammon or rib of beef with vegetables and all the trimmings; vegetarian, other alternatives and a variety of salads will also be available. Starters and desserts are also available at extra cost.

Places are limited to 30, and they do not require a deposit, but obviously would like to know numbers. I would suggest a deadline of 1st November and Cathy Clark is happy to collate bookings ([chairman@raynet-uk.net](mailto:chairman@raynet-uk.net))

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## **What's in a Name? - Ron Cowan, GM4SRL**

There is, unfortunately, still a lot of confusion about what the The Radio Amateurs' Emergency Network is, and who are members of it. Each time there is a 'Network' stand at a rally or show, RAYNET members come, sometimes to buy Supplies items, sometimes to chat or to ask about services, and they really think that they are members of The Radio Amateurs' Emergency Network, because they are RAYNET members. Whilst it is good that RAYNET members work together no matter their affiliation, it is a pity that some don't know that they are not members of our organisation, thinking that being a RAYNET member is sufficient to use all of the services which we provide. The Radio Amateurs' Emergency Network is a limited company, (as is The Radio Society of Great Britain) and it is also a registered charity. Meeting this dual role can be challenging at times, but there are real advantages to having our 'company' set up in this way.

As you are aware, RAYNET groups can be totally independent, can be affiliated to the Radio Society of Great Britain, or can be Network Groups, forming part of The Radio Amateurs' Emergency Network. In this case it is the members, rather than the groups, which are part of The Network, or 'RAEN' as we are sometimes known. Some groups have members who are 'Network' members and the group itself is affiliated to the RSGB. Whilst it is good that in most cases we provide a seamless organisation to our user services, we should always take the opportunity to promote our organisation and the services and benefits which it provides.

The Radio Amateurs' Emergency Network provides 3<sup>rd</sup>. party insurance liability, has an optional personal accident insurance scheme, has an excellent award winning website, provides secure identity cards, has a national structure with zonal co-ordinators who act in administration roles, has a Supplies section which attends rallies and trades on a mail order basis. We also have a technical team which looks at ways of improving our service and solving technical problems, and a training team which provides training and advice so that Network members can train to a national standard at a local level. We provide a 24 hrs. emergency contact telephone line which User Services can use in emergency should they not be able to make contact with a local group. This service is national, and we will take calls for non Network groups and pass details on as necessary. We also have a recruitment section on our website, and details of those wishing to join are passed to the appropriate Zonal co-ordinator for action within the Network, or, if there is no local Network group, to the appropriate non-Network controller.

Nationally the 'Network' is the recognised lead in discussions with the User Services and Government Departments, and currently the Emergencies Planning Team is in discussions with a view to ensuring that the country has a reliable and functional back-up communications system in place in times of emergency and disaster. The work of this group has, to some extent, remain confidential, although decisions and actions have, and will be, made available to the membership as appropriate.

RAYNET has come a long way since it was founded in 1953 following the East Coast Floods, and our methods of providing service are constantly evolving to keep pace with technical progress. Despite the enormous advances being made in the communications field, there is still a definite need and place for RAYNET, and we will continue to provide emergency communications for many years to come, not only because of our technical skills, but also because of our message handling capabilities, and the additional trained personnel which we are able to provide when required.

Please take any opportunity to promote our organisation, and to explain to members of RAYNET who are not members of The Radio Amateurs' Emergency Network what we do, and why it would benefit both us and them if they would join us.

## Emergency Planning Team Report, August 2005

### Liaison with Central Government

Another meeting was held on June 1<sup>st</sup> in London. The main purpose was to review the outcome of the actions placed on various bodies in December 2004.

### GAREC 2005 – Tampere, Finland

This conference was attended on behalf of the Network by David G8IDL. Considerable discussions were held with Paul G4MWO over the content for the joint presentation, and from all reports, it was well received. It has certainly prompted an increase in contact with similar organisations worldwide.

### SJA Radio Forum meeting

A meeting of the SJA Radio Forum in Northampton at the beginning of May was attended by Trevor Groves G4KUJ, of the Network's Emergency Planning Team. Matters of mutual interest were discussed, and it is hoped that this will lead to further liaison at a national level with this group.

### Voluntary Sector meeting – 12<sup>th</sup> May

This meeting was held just before the guidance for the Civil Contingencies Act was issued. There was little need for comment, as those points raised previously had been noted and actioned.

Following the questionnaire issued last year, there was general support for a forum to represent the interests of voluntary organisations. The Government was also keen for this to happen. The results of the questionnaire will be published shortly.

## Some Sound Advice - Jim Burke GM4TMP Fife RAYNET

Following the disaster in London East Anglian Ambulance Service have launched a national "In case of Emergency ( ICE ) " campaign with the support of Falklands war hero Simon Weston.

The idea is that you store the word " ICE " in your mobile phone address book, and against it enter the number of the person you would want to be contacted "In Case of Emergency".

In an emergency situation ambulance and hospital staff will then be able to quickly find out who your next of kin are and be able to contact them. It's so simple that everyone can do it. It really could save your life, or put a loved one's mind at rest.

For more than one contact name ICE1, ICE2, ICE3 etc.

More details can be found on the following link

<http://news.bbc.co.uk/1/hi/england/4667193.stm>

**Note:- Since Jim sent in this item it has been reported that ICE numbers have been used in hoax situations following the theft of phones, causing distress to relatives. Please also remember that if your phone is locked, the emergency services cannot access the ICE numbers. - Ed**

## Zone Reports

### Zone 1 Report - September 2005- Tom G0JRT ZC 1

The groups have been quite busy throughout the year with a number of events.

**North West Durham** Have provided communications for:

The LDWA 18, 26 and 50 mile Challenge Hike in the Durham Dales on Saturday and Sunday 25-26<sup>th</sup> June.

The YMCA Charity walk on Sunday 21<sup>st</sup> August in the Tyne Valley.

Members of the group assisted East Durham group with The Great North Cycle Ride

**East Durham** The group provided communications for the The Great North Cycle Ride of 50 miles from Seahouses in Northumberland to Tynemouth on Sunday 28<sup>th</sup> August.

They have also assisted other groups with their events throughout the year.

**Sunderland** - No report received

**Northumberland** - No report received

**Cleveland.** - No report received.

### Zone 3 Report September 2005 - Roger Beever, G6CQR

Zone 3 is comprised of Derbyshire, Leicestershire, Lincolnshire, Northamptonshire, Nottinghamshire and Rutland.

With the arrival of the **Civil Contingency's Act** Geoff Griffiths G3STG has kindly taken on the role of Civil Contingency's Officer for the Zone and has been attending meetings with the Government Office for the Region. Geoff is in the process of arranging a meeting for all Controllers and Deputies within the Zone and invitations will be sent once the venue and date have been finalised.

Leicestershire sends feedback from an event held earlier in the year.

"One of these events produced a large financial loss for the organisers due to the Local Authority reportedly hiking the road closure fees by 150%! So I guess we won't be seeing them again next year." Is this the norm or has the East Midlands been hit hard I wonder?

Both Leicester and Melton Groups will be involved with various tasks at the Leicester Amateur Radio Show held once again at Donnington Park at the end of September.

### Zone 4 Report - September 2005 - Philip Webber

Zone 4 comprises Norfolk, Suffolk, Cambridgeshire, Bedfordshire, Essex and Hertfordshire officially, but some times Essex stops at the M25, which make life interesting! The summer has, as expected, caused a lot of man hours in planning events, the usual flower shows, long distance walks and rides etc. New to this year's long list of activities have been a number of user service exercises, not from the usual CEPO but from the government offices and Railtrack.

Unfortunately most of the Government Office exercises were cancelled or postponed due to some of the agencies wanting more time to sort out their internal responses (RAYNET have always been ready). The Railtrack event was interesting on two counts - firstly nobody was allowed in the tunnel without full PPE (boots, Hi-vis tabard and hard hats); secondly Railtrack insisted on there being a hard line to the engine so that the supervisor could talk direct to the driver (who overshot the agreed stop and the phone had to be moved). How many groups have this capability?

A comment from a tame Voluntary Sector Rep suggests that we may not be all talking from the same songbook or at least he is not sure we are. The concern is that we don't appear to have a coherent approach to the local authorities; I will have to chase this one up and discuss it at the next zone meeting.

The above notwithstanding, there have been a number of good contacts made in the medical trusts, with permanent equipment being moved and/or updated, and group controllers making local contact with ambulance trust.. More to follow on this as it develops.

## **Zone 5 Report- September 2005 - Phil Williams, G6AQP**

In the hours following the July terrorist attacks on the transport infrastructure in London many of the County Groups from the Home Counties notified London RAYNET that they had been put onto standby by their respective County Emergency Planning Officers. While no requests for assistance were received from User Services it is gratifying to know that the mutual aid principal between County Groups in the south East is alive and well. It is particularly pleasing to report that offers of assistance were also received from groups not affiliated to the Network.

The usual cluster of bike ride training opportunities have taken place during the summer. September will bring a cluster of more unusual events, including working with London Coastguard by providing radio cover for the "Nelson Funeral Flotilla", a re-enactment of Nelson's funeral procession Between Greenwich and Whitehall. While river based events are becoming more popular, this will be the first time that Raynet members will be dressed in period naval rating costume when they are on the river. Watch out for photographs in the next edition of Raylink. My sympathy to the family and friends of my predecessor as ZC5, Dave Whiteman G1ADW who died suddenly at the end of August.

## **Zone 6 Report- September 2005- Nigel Watson G1XBV**

### **User Services**

As some of you will know there has been a problem with the Kent groups when covering charity events. A zealous Field Officer covering the Southern UK mistakenly became involved. However the problem has apparently become quiescent. The lesson learnt is to ensure that groups have written request from the User Service involved or have your EPU provide written agreement to use the event for 'training purposes'

There has been a problem with certain SJA personnel stating that RAYNET is not necessary. and they can rely on mobile phones. Event organisers should be advised this reliance on mobile phones is totally misplaced as past incidents have shown.

Also with SJA, several of the County Radio Communications Officers are insisting that any request for RAYNET assistance should be vetted along with the Risk Assessment documentation. Many of the Divisional Controllers are taking exception to this unapproved procedure. This is purely an SJA internal problem – don't get involved!!

### **Zone 6 RAYNET Groups**

Since taking on this role I have contacted Groups and County Controller (Kent) who are either independent or RSGB affiliated. In addition I have persuaded those groups who don't have a registered Group Controller – for the Secretaries to act & report as such. This has involved South Sussex and East Berks, which will appoint Controllers at their next AGMs. You will be pleased to know that they all seem happy for me to represent them as Acting Zone 6 Representative with the GO-SE VSSG .!!

### **Government Office – South East Resilience Team**

This newish organisation is located in the centre of Guildford near to the railway station.

RAYNET have been invited to be a member of the **Voluntary Services Sub Group (VSSG)** which reports to the main Team, and I have already attended two meetings on behalf of Zone 6 RAYNET.

The VSSG is mainly concerned on strategy matters and supporting the individual County

## Zone 6 Report- September 2005- (continued)

Resilience Teams. It is acknowledged that a major local / county incident, could well have regional implications as shown for example with Lockaby and the recent London Bombings. The London Bombing took up most of the last VSSG meeting, which highlighted at least two areas that need early review.

1 Given that adjacent county Ambulance Trusts sent a high number of vehicles into Central London in response to London Resilience request, what would have been the situation if there was a further Major Incident in one of those counties ?

2 The question of inadequate communications was mentioned by one of the GOSE Resilience team members. No details of the shortcomings were available. With no contact by Surrey EPU– I could shed no light on this topic. I suspect there would be a problem with comms in the Underground given the personnel were in full hazard suites. Also it would be interesting to learn how AirWave digital comms coped with the situation. !

Several RAYNET members advised that the mobile phone systems locked up in NW & W London – in some areas until 1600 hrs on the 7<sup>th</sup> July.

I was advised by a Resilience Team member that there is a LGA National Communications Committee on which I understand RAEN has a representative.

However I have learnt that there is to be a Zone 6 LGA Communications Group and have contact its Chairman who is interested in involving RAYNET, in future meetings.

### **ITAP ( Inter Agency Telecommunications Plan**

I have to report that Surrey ITAP has become into being as a 'virtual organisation' having representatives on its secretariat from the **Surrey** organisations of BRC, SJA 7 Surrey RAYNET As the RAYNET representative I'm the Hon. Sec. And have been dealing with Surrey County Council in respect to the availability of certain comms facilities owned by them. A Memorandum of Understanding is required to be put in place and a draft of this hopefully developed for use nationally. An Operating Protocol has been agreed with Surrey BRC, SJA & Surrey RAYNET.

### **RAYNET POLLS**

Both the Emergency Availability and High Ground T/T Station Locations are being gathered but certain sources need chasing up so that Zone 6 data can be collated without further delay.

Ofcom Radio Amateur Proposals.

From comments originating from Groups and clubs – there has been a good response to the 'Consultative Document'. Hopefully some notice will be taken of the individual and group responses, and acted upon accordingly.

At least each submission was acknowledged with thanks.

It is some current comfort that to fully deregulate would involve major changes to the WT Act and several international agreements.

Members Minimum Age

This topic was first raised at our last Zone 6 meeting by Surrey, in response to the latest Persons at Risk legislation. It was considered by their Committee the raising of the min. age from 14 to 18 years old was the only practical protection for members against possible fraudulent malicious claims by unaccompanied minors. The Surrey Constitution has consequently been so amended.

## ZONE 7 REPORT- AUGUST 2005 - CHRIS HAMPSON G8RXA ZC7

**Zone 7 General** – The Zone 7/EPO meeting at Exeter on 13 July saw representation from all RAYNET Counties except Dorset and most County/Unitary EPOs were present. The Terms of Reference were agreed and representation formalised. Exercise ICE 3 on 20 November was discussed and aims and objectives decided. A standard message form was suggested but this has given rise to strong objections from Gloucester and revisions are being considered. The meeting concluded with a presentation to Tracey Quinn (M1ZZY) of flowers from West Devon RAYNET and a RAYNET key fob from the Zone. Tracey has left the GOSW and is working from home. She was thanked for hosting this meeting and for her support to both the Zone and Nationally over the last 2 years.

The HF antenna at the GOSW has been checked and replaced but the SWR on 80 metres causes the rig to shut down.

Exercise SABRINA 4, organised by Gwent RAYNET on 24 September, will be monitored by GOSW.

The formation of the South West RAYNET Association is progressing and it is expected that this will be completed at the next Zone meeting in Exeter on 22 October.

During my August absence on holiday Ian Harley (G6BJJ) agreed to look after Cornwall, Devon and Dorset and Noel Woolrych (G4TIX) agreed to oversee Wiltshire, Avon, Gloucester and Somerset on my behalf.

**Avon Area** - The RAYNET room at Lansdown is still not available and due to increased interference on 2 metres at the site filters are being developed to allow this important location to continue to be used for RAYNET activities.

The future events include: AR100 Bike Ride on 28 August; Exercise Sabrina 4 on 24 September (Gwent); Wansdyke Triathlon on 4 September; Trafalgar Day Celebration on 29 October (B&NES); Weston-super-Mare Carnival on 14 November.

**West Devon** – Recruitment has resulted in more M3s and a few M0s joining and these younger members have been encouraged to take part in exercises accompanied by their parents.

It is noted that Chris Peacock (G8LNT), who has been a member of the Group for more than 30 years, has moved to Bideford to take up employment in that location. Chris was Secretary of the Group and his wife Val (M3COO) was Treasurer and they are both thanked for their help and support over many years. They will remain members of West Devon RAYNET.

Bernie Probert (M3WGP), a member for more than 20 years and a avid supporter of integration between the Voluntary Aid Agencies, has been diagnosed with Kidney Cancer with major complications. He continues to support the Group between dialysis and chemo treatment and hopes to receive a transplant at the end of the year.

Notified events are: Sabrina 4 on 24 September (Gwent); Foresters Walk 25 September; Pedal for Medal; Goose Fair, Tavistock on 12 October.

**Exeter Area**- Recruitment continues and hopefully 3 more members are likely to join the Group. Training sessions and assistance to West Devon continue and assistance/observation with Mid Devon on Sabrina 4 will demonstrate operations to new members.

**Wiltshire** – Further tests on LA equipped installations are still pending.

Negotiations with the Police for an installation at their HQ at South Marston are progressing.

Radio cover for the Melksham Carnival enabled the Police to monitor activities during the whole event for the first time.

Forthcoming events are: BHF Bike Ride on 4 September; Devizes Carnival on 3 September; Trowbridge Carnival 10 September; Salisbury Plain Mountain Bikers 11 September, Pewsey Carnival 17 September, CEPO Exercise 22 September – a very busy period with activities each weekend during September, hence involvement with Sabrina 4 on 24 September may not be possible.

**South Wiltshire Group** is continuing to find it very difficult to recruit members.

**Dorset** - Dorset RAYNET has had a very “event-full” summer with two new equestrian events.

Ironman was very successful with 51 of our 61 members in attendance. Three RAYNET members from outside of Dorset also took part. The radio side of Ironman started at 05.00 on the 21<sup>st</sup> August and due to mist over Sherborne Castle lake, the event was delayed by 2 hours. Because of this, RAYNET was finally stood down at 01.00 on the 22<sup>nd</sup>.

Many RAYNET operators stayed at the campsite over the weekend and enjoyed a BBQ on the Saturday evening.

## Zone 10 RAYNET Report - David Hicks, G6IFA

The Zone generally has been busy and all Counties have been operating well. **Cumbria** RAYNET's two new Groups have been in training and have started to work with the EPU in Carlisle. The West Cumbria Group is fast getting the 100 foot trailer mast refurbished and have said that they hope to give it its first outing soon.

**Isle of Man** RAYNET is involved in the summer round of motor events on the island with old and new members reaping the rewards of training together.

**Lancashire** RAYNET are now called out on all evacuation incidents as standard practice by the Emergency Planning Unit. This has resulted in several call-outs recently including fires and one siege involving an armed man in Rossendale.

**Greater Manchester** RAYNET is continuing exercises with the Rail Authorities on Tunnel Radio Communications. This has resulted in improved relations with the Fire Service to whom presentations have been made on the capabilities of RAYNET. They are also to provide a demonstration at a major Fire and Rescue Carnival at Rochdale in September.

**Merseyside** RAYNET has recently carried out a major training exercise, which has resulted in more efficient operation. The Liverpool Chester Liverpool Bike Ride in July was covered without major incident.

**Cheshire** RAYNET is about to start its busiest season. The West of the county has been involved in a live River Dee Exercise with the Fire Service. West Cheshire also provide radio control services for SJA & BRC at Chester Races. This is a combined operation with the Voluntary Aid Services, County Ambulance, Cheshire Police and the Fire Service. This operation is invaluable in furthering good relations with the user services.

Work continues with the **Regional Resilience Forum** of the Government Office North West, with several meetings attended and a demonstration of RAYNET Capabilities given at an exhibition of emergency responders at Bolton Football Club in June. This was useful in promoting RAYNET to the user services and obtaining new contacts with, for instance, the Army.

The Zonal Coordinator also attended the RSGB forums on the **Ofcom Consultation** at Preston and Tylesley Manchester. They were both well attended particularly by RAYNET Members and it was also interesting to note that Ofcom observers were at the Manchester meeting. It was also put over that RAYNET had high standing in Government circles and that the RSGB should remember this.

## Zone 12 RAYNET Report - August - Tom Stewart GM0BKX

Things are going very well in the Zone at the moment, and it has been a busy year with events, however most Groups are struggling for numbers and members are traveling some distance to assist at some relatively small events.

**West of Scotland Area:** - The next West of Scotland Area Controllers meeting takes place on Friday 16<sup>th</sup> September at Braehead near Glasgow.

**All Group Controllers in WOS & Zone 12,** Network and Non Network will be invited to the meeting and are likely to be represented if they cannot attend themselves.

**North Argyll Group:** - Only thing to report from Argyll North is the Oban half marathon on 2 Oct 05. The group will be helping South Argyll with a Triathlon the week before

**South Argyll Group:** -Very little to report this year I'm afraid.

Assisting at the Mid Argyll Triathlon on 25th Sept, with assistance from North Argyll.

Then it's helping North Argyll in Oban for their Half Marathon on 9th October, and then the Mull Rally the weekend after that.

**Clyde Coast Group:** - Clyde Coast report, 3 members, no local events planned on the calendar yet. The group had an enquiry from local community police for stewarding at the Port Glasgow comet festival in July but it wasn't taken any further after initial phone call as reading between the lines they were looking for bouncers to steward at the evening function.

Assisted at most Greater Glasgow events including the Special Olympics for 6 days.

Future assistance offered for other Scottish events so far including Bobath this Sunday, Great Scottish Run in September, Mull Rally in October or anyone else needing a assistance.

**Lothian's Group:** - The group has held some 4 or 5 meetings since the last report; all bar one, at the Emergency Planning Unit in the City of Edinburgh.

## Zone 12 RAYNET Report - (Continued)

Members have been out on some 6 Scottish Endurance Riding Club event; 2 of which were 2-day events covering Saturday and Sunday in both cases. By far the biggest event was the Scottish Championships which took place in the Scottish Borders based at Town Yetholm. We manned 10 checkpoints plus the Start-Finish area as well as 2 Vet Gates (Veterinary Checkpoints for the horses). In all I think we had some 15 operators out at one point including a Talk-Through on Hownam Law. One checkpoint was actually just over the border was a successful event which we were only able to take onboard with assistance from The Scottish Off-Road Club. They provided some 5 operators each with suitable 4x4 vehicles for getting to some of the most inaccessible checkpoints up on The Pennine Way etc. on the edge of the Cheviot Hills. We still have another 2 or 3 SERC events to cover during September and October.

As always our biggest problem is to get more radio amateurs to take an active interest and coming out to assist at some of these events. Many of the events are in The Scottish Borders area; Peebles, Kelso and Newton St. Boswell to name but a few of the places, and there is a considerable amount of travel involved to get to some of the events. With the escalating fuel costs I can see a day when we will just have to say "sorry can't do it" to some of the events we are being asked to cover.

**Ayrshire Group:** - The Group provided communications at nine events in our own area so far this year plus assisted the at the Canal Event, the Run the Road Event, the Ladies 10km Road Race and the week long Special Olympics which were held in the Greater Glasgow Area. The Group also attended a voluntary organisations evening in May which was organised by the three Ayrshire Emergency Planning Officers.

### **Greater Glasgow Group: -**

The Group has been involved in the following this year.

13th March Glasgow Underground Radio Tests  
20th March Canal Trust Event  
14th April Table top Exercise with Underground  
24th April Run the Road Event  
1st May Glasgow Maydaze Event  
5th May Ladies 10k Tabletop Exercise  
15th May Ladies 10k Event  
18th June BHF Cycle event Isle of Bute  
2nd - 8th July Special Olympics 2005 Glasgow  
13th August World Pipe Band Championships Glasgow  
20th -21st August Glasgow Show  
21st August Glasgow Bikeathon  
27th August Bobath Cycle SECC Glasgow - Balloch

### **Future Events:**

**4th Sept Great Scottish Run 2005**  
**10th Sept BBC Proms Glasgow Green**  
**5th Nov Glasgow Fireworks Display**  
**27th Nov Glasgow Xmas Lights swith on**  
**31st Dec Hogmanay Celebration George Square Glasgow**

## **REVOLUTION IN GLASGOW. - RON COWAN, GM4SRL**

The Greater Glasgow RAYNET Group was tasked with providing communications for the Exercise directors and the umpires of 'Exercise Revolution' which was run by the Strathclyde Emergencies Co-ordination Group on the Subway (Underground Railway) within the City of Glasgow on Sunday 11<sup>th</sup> September. The exercise centred round a broken rail which caused a derailment within a tunnel section of the system, and the consequential release and removal of casualties by Strathclyde Fire & Rescue through a triage point established by the Scottish Ambulance Service at a nearby station. The exercise was co-ordinated by Strathclyde Police Emergencies Planning Section.

The Greater Glasgow Group had undertaken a series of communication tests earlier this year, and the knowledge gained at that time was used in the planning of the exercise. About forty 'casualties' were provided by British Red Cross. Assistance was also obtained from the Strathclyde RAYNET Group, with their controller operating 'RAYNET Control'. Two RAYNET operators were placed within the crashed train, not only to provide the communications for the directing staff, but also to provide a radio link to the Police Forward Control Point should assistance be urgently required in the event of a real incident occurring during the exercise. RAYNET operators were placed on the platforms of two adjacent stations, and others were tasked with providing communications at ground level, and within the Police Forward Incident Control vehicle.

The communications provided by RAYNET were described as excellent by those taking part, and further raised the profile of the group which already works closely with the User Services at many events throughout the year.

# INTRODUCTION TO PORTABLE MASTS AND ANTENNAS FOR RAYNET USE.

Bernard Spencer G3SMW

## 1. OBJECT

The use of a light-weight mast and antenna, carried by each Member in his car at all times, is not a new idea. It allows Members to be deployed directly from home or work to the scene of an incident, or to a desired relay point. Members of at least one Group carried a plastic-pipe mast and a modified Slim Jim antenna in their cars in the 1970's. When fibre-glass Roach Poles became available, some other Groups carried them, and have developed ingenious stands and fittings for them

This Note is a brief introduction for the present (2005) use of portable masts and antennas for RAYNET, and suggests two easily made antennas for this.

The greater antenna height using a mast, compared with the height of a car-roof antenna, gives a greatly increased chance of setting-up a successful communication link. This applies in most terrain, urban or rural. While the theoretical height-gain for doubling moderate VHF antenna heights is only 3dB over smooth flat ground i.e. half an S-Point, getting the antenna above much of the natural and man-made clutter (vegetation, buildings and road vehicles etc) by using a mast of about 5 metres height often results in 6 to 12 dB (1 to 2 S-Points) increase in VHF and UHF signal strength. If on arrival it is found that the car-roof antenna will not provide a link, the use of a modest mast often will.

Points to bear in mind are firstly, that simple light-weight antennas will not have as much gain as the commercial vertical colinear antennas used by Radio Amateurs on buildings, (but these require heavier masts). Secondly, that feeder loss should be kept to a minimum, as with all elevated antennas. Nevertheless, such simple antennas and light-weight masts, with a feeder as short and low-loss as practicable, will generally give greatly increased communication capability compared with car-roof antennas, and are quicker to deploy and erect than heavier masts and higher gain antennas kept in a central store.

## 2. MASTS

What is comparatively new is the availability of light-weight and inexpensive fibre-glass telescopic masts, closing down to less than 1.2m (48in) in length.

They can be stored in most cars. Also, having a weight of less than 1 Kg they can be carried easily on-foot. The top section is very thin and bends easily in the wind, but that section need not be used. So, for example, a 6m telescopic fibre-glass mast without the top section will be about 5m in height, and sufficiently rigid at the top for a light-weight and low-windage antenna to be used without signal flutter in the wind. This height is quite a good choice, but similar masts up to 9m are available. A 6m fibre-glass telescopic mast can be bought for as little as £10.

Carbon-fibre masts should not be used because they are conductive, and this restricts the choice of antennas.

As these masts are very light and easy to handle, it is possible to tie them to a fence, car, or other convenient object with string. It is even possible for an operator to hold the mast vertical with one hand while using the radio. Of course a light-weight stand of some kind is useful.

## 3. ANTENNAS

The majority of RAYNET communication is in the 2m band, and some may feel that a portable

## INTRODUCTION TO PORTABLE MASTS AND ANTENNAS (Contd)

antenna for that band alone is sufficient. In that case a suitable and easily-made antenna is one of the 2m Band Ribbon-J Antennas such as that described by John Belrose VE2CV (1). This version can be rolled up when not in use. It incorporates a choke in the coaxial feeder, and this is desirable for most vertical VHF antennas. The dimensions given there are for the 144-148 MHz band, so for the 144-146 MHz band the lengths can be multiplied by 1.014. Larger and smaller versions could be made for other single bands.

On the other hand, links on 70cm and 'Talk-Through' on 2m/70cm are not uncommon now that most Hand-Held and Mobile Transceivers incorporate both bands. A dual-band antenna may therefore be preferred, if it is effective and can be made easily.

Some Groups have made and use the "Townsmen" Dual Band 2m/70cm antenna (2). This is a rigid antenna, and has a Patented impedance matching arrangement at its base. The desired radiation pattern on 70cm is achieved with a cylindrical metal sleeve over part of the radiator.

A simple dual-band 2m/70cm antenna that is easy to make, does not require difficult adjustment, and can be rolled up when not in use, is the "FBK 2/70 Portable Coax Antenna" designed by Frank Bremer PA0FBK (3).

It is made of RG58 coaxial cable, with some parts of the braid removed. The braid is retained over part of the radiator, for the same purpose as the rigid sleeve in the case of the Townsman.

We have added an RG58 "tail", part of which is coiled to form a choke. This choke is to reduce currents on the outside of the feeder that could tilt the main lobes of the vertical radiation patterns (VRP) of both bands up or down. It also avoids possible matching problems at the transceiver. This air-cored choke construction, winding the coax tail inside a PVC tube (wound with 6 turns of the PVC cable jacket touching), is satisfactory and reliable. It avoids the cost and difficulty of obtaining a suitable ferrite choke.

In the design of dual-band 2m/70cm vertical antennas generally, the harmonic relationship makes it relatively easy to obtain acceptable impedance matching on both bands, but it is not easy to obtain the desired VRP for the 70cm band.

It is difficult to avoid an upward or downward tilt of the main lobe, or a null in the horizontal plane. The braid on part of the vertical radiator of the FBK antenna considerably improves the 70cm VRP.

The details of the FBK antenna are shown on the attached sheet, together with the tail/choke. In (2) PA0FBK mentions his previous use of the Townsman. We have made the FBK antenna and have tested it for impedance match and VRP on both bands, with the choke (4). We checked VRP's on a large flat open area (Playing Field). Whilst the 70cm VRP is not quite optimum, it does have one of its maxima in the horizontal plane and this is within about a decibel of the others. After initially trimming the top, the VSWR was below 1.5 at the centre of both bands, and below 2 at the band edges. The antenna performance is considered quite acceptable for its purpose on both bands. It is recommended that in the first instance the top (unsheathed) section of this antenna be made about a couple of centimetres longer than the figure given. By checking the VSWR in both bands (with the antenna attached to a fibreglass mast using sticky insulating tape), the top can be trimmed, say 2mm at a time, for the best compromise VSWR on both bands. It is best to tape the antenna to the mast at only three or four points, so that it is

## INTRODUCTION TO PORTABLE MASTS AND ANTENNAS (Contd)

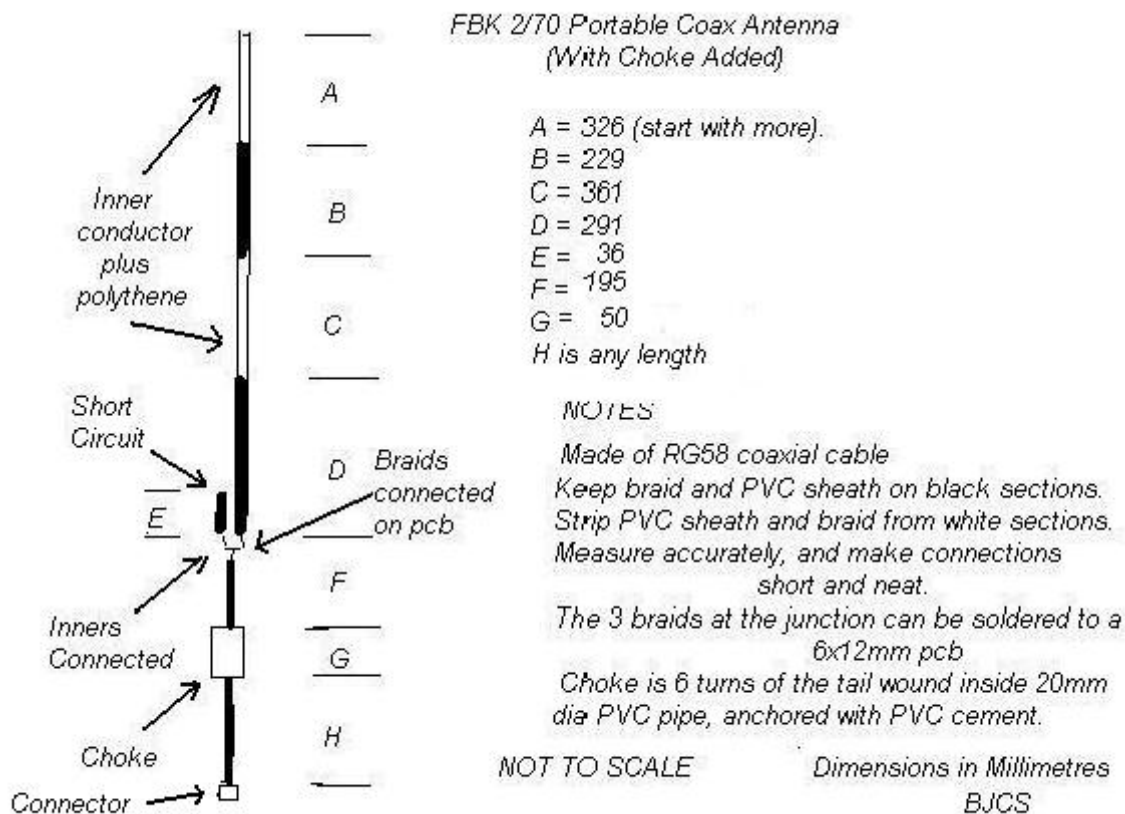
not held tightly against the mast over most of its length and therefore will not be affected appreciably by the dielectric of the mast. If desired, the ends of the braid can be covered with short pieces of heat-shrink tubing as a seal, taking care not to melt the polythene dielectric.

We have designed and made other flexible Dual Band 2m/70cm antennas, with the radiator centre-fed through the coax. These work well, but they incorporate traps that require accurate setting-up, and so are not as suitable for general DIY construction. No doubt other designs will emerge.

Flexible antennas can also be used conveniently without a mast. For example the top can be tied to a branch of a tree. If operating near the top of a building of several storeys height, it is sometimes possible to open a window and let the antenna dangle down outside from the window sill, or just to use the antenna inside the room. And so on.

If using any antenna on 70cm, remember that half a wavelength is only about 35 cm (approximately one foot), and that there may be a horizontal standing-wave pattern in space due to reflections, as well as a vertical pattern. Moving the antenna horizontally a few inches may then result in a considerable change in signal strength. For fixed commercial Point-to-Point links at similar frequencies, the antenna is often mounted on a "swan-neck". Antenna position then is adjusted horizontally and vertically during installation.

- (1) Technical Topics (Radcom May 1995)
- (2) B.Hewlett G3JAM (Wireless World February 1980) .
- (3) [Frank Bremer PA0FBK www.qsl.net/pa0fbk/hampage\\_uk.htm](http://www.qsl.net/pa0fbk/hampage_uk.htm)
- (4) Gerry Hussey G4PGZ assisted with the antenna tests.





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## CERTIFICATE OF EMPLOYERS' LIABILITY INSURANCE(a)

*(Where required by regulation 5 of the Employers' Liability (Compulsory Insurance) Regulations 1998 (the Regulations), one or more copies of this certificate must be displayed at each place of business at which the policyholder employs persons covered by the policy)*

**POLICY No.** **LC COM 1411791**

**1. NAME OF POLICYHOLDER** **The Radio Amateurs' Emergency Network**

**2. DATE OF COMMENCEMENT OF INSURANCE POLICY** **2nd July 2005**

**3. DATE OF EXPIRY OF INSURANCE POLICY** **1st July 2006**

We hereby certify that subject to paragraph 2:-

1. the policy to which this certificate relates satisfies the requirements of the relevant law applicable in Great Britain **(b)** Northern Ireland, the Isle of Man, the Island of Guernsey, the Island of Jersey and the Island of Alderney; and
2. (a) the minimum amount of cover provided by this policy is no less than £5 million **(c)**

Signed on behalf of AXA Insurance UK plc (Authorised insurer)

Chief Executive

### Notes

- (a)** Where the employer is a company to which regulation 3(2) of the Regulations applies, the certificate shall state in a prominent place, either that the policy covers the holding company and all its subsidiaries, or that the policy covers the holding company and all its subsidiaries except any specifically excluded by name, or that the policy covers the holding company and only the named subsidiaries.
- (b)** Specify applicable law as provided for in regulation 4(6) of the Regulations.
- (c)** See regulation 3(1) of the Regulations and delete whichever of paragraphs 2(a) or 2(b) does not apply. Where 2(b) is applicable, specify the amount of cover provided by the relevant policy.

LC COM 1411791

Page 1 of 1

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