

GRAMPIAN RAYNET GROUP

Manual

Document Control

Issue	Date	Written By	Approved by	Comments
01				Original issue
02	29/02/04	GM1XEA	Committee	Total revision
03	10/05/07	GM1XEA	Committee	Section 1 & 2 revised to align with licence changes. Section 3 minor changes + UHF repeater removed. Section 7.3 expanded. Appendices G, H & I added. Appendices A-J updated.
03.1	24/07/07	GM1XEA		Repaginated for double sided printing. No information changed
04	21/10/08	GM1XEA	Committee	Section 2 Talk through added Section 3.4 minor changes

Note: this revision record applies to the main body of the document only. Appendices have their own revision record

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Appendix A – Call Out Information (for User Services)

Appendix B – Working Frequencies

Appendix C – Contact Details for adjacent groups

Appendix D – Committee Members

Appendix E – Grampian Raynet Constitution

Appendix F – Distribution List

Appendix G – User Services

Appendix H – Call-out Details

Appendix I – Mobilisation of Members

Note: Some appendices contain confidential information and will not be issued to all manual holders.

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1 Introduction

This handbook is intended for members of the Grampian Raynet Group. It can also be issued to other interested parties to provide information of the operation of Grampian Raynet Group.

Under the terms of the Amateur Radio Licence, Amateur Radio Operators are permitted to provide emergency communications either during exercises or during emergencies for specified User Services. These User Services are specified in the Licence as being:

British Red Cross

St John's Ambulance Brigade

St Andrews Ambulance Association

The Women's Royal Voluntary Service

The Salvation Army

Any Government Departments

Any "Category 1" responder

Any "Category 2" responder as defined in the Civil Contingencies Act 2004

(See Appendix G for interpretation of user services)

RAYNET (the Radio Amateurs Emergency Network) is the title used by organised groups of Amateur Radio Operators who wish to utilise their hobby for the benefit of the community by providing emergency communications under disaster situations, and to practice in anticipation of such an event. Such practice is obtained by providing communications for events such as car rallies, equestrian events, marathons etc.

Grampian Raynet Group is affiliated to the two major co-ordinating bodies for Raynet groups; namely the Radio Society of Great Britain and the Radio Amateurs' Emergency Network. Both of these bodies are not for profit limited companies.

Contact Details:

Group Controller	gc@grampian-raynet.org.uk
Deputy Group Controller	dgc@grampian-raynet.org.uk
Secretary	sec@grampian-raynet.org.uk
Treasurer	treas@grampian-raynet.org.uk

Also see Appendix A or website www.grampian-raynet.org.uk

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2 Permitted operations

The Amateur Radio Licence permits the following:

The Licensee shall ensure that the Radio Equipment is only used:

- (a) for the purpose of self-training in radio communications, including conducting technical investigations; and
- (b) as a leisure activity and not for commercial purposes of any kind.

The Licensee may use or permit the use of the Radio Equipment by a member of a User Service during any operation conducted by a User Service or during any exercise relating to such an operation in each case for the purpose of sending Messages on behalf of the User Service.

The Licensee may use the Radio Equipment to assist with communications in times of disaster or national or international emergency.

Additionally the group normally holds a talk through permit which allows the use of one or more “talk through” repeaters which can be sited almost anywhere in the UK provided that it does not cause interference to other users. This can be very useful to get round or over hills etc. The permit covers VHF : VHF, UHF : UHF and VHF:UHF (cross band) operation. The latter is particularly useful as no special antenna filters are required making them easily deployed. The talk through permit requires to be renewed every 6 months.

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3 The Grampian Raynet Group

3.1 Mobile Control Unit

The Group has its own mobile control unit, which can be brought into use at short notice. This unit is a caravan which can provide both an operating base and rest facilities.

The unit is kept in Aberdeen and much of the radio/electrical equipment is kept in the control room below.

3.2 Control Room

The Group is responsible for a Control Room sited in Red Cross HQ Aberdeen, which contains radio transmitters, and other equipment that may be useful during an emergency. All equipment can operate independent of mains electricity.

3.3 Mobile repeaters

The Group owns two repeaters;

- one VHF in band repeater – single antenna - 10W

- one VHF/UHF cross band repeater – single antenna – 10/30W

The Group also has access to a number of mobile repeaters (VHF-UHF), owned by members of the Group, many of which are fitted into vehicles and can be rapidly deployed. If located on high ground or at the ends of valleys they provide links between locations which are not line-of-sight with each other.

3.4 Use of HF

With the removal from the licence of class A and Class B operations, HF is likely to become more common in Raynet operations. This may be either ground wave or NVIS and could cover mountainous terrain or large areas of the UK without the use of repeaters. The Group will be conducting trials to determine the effectiveness of using HF .

If you have mobile HF capability, please bring it to exercises.

So far NVIS the 80m band has been the most useful. 6m has also proved useful when 2m was poor.

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4 Preparation by members

You are not ready for emergencies simply because you operate your radio equipment on a day-to-day basis. You should do your best to participate in exercises, since the normal amateur traffic bears little resemblance to how you would require to operate in an emergency. Do not assume that you can turn up during an emergency and operate without previous practice - you will almost certainly end up clogging the frequency with long-winded transmissions.

4.1 Equipment

The following is a list of equipment, as well as your radios, which you should take with you if called out:

Thermos flask with hot drink, sandwiches & quick energy foods (chocolate etc.)

Paper for recording messages and at least 2 pens or pencils

Money (including small change)

Torch and spare batteries

Maps & compass

Portable transceiver and spare battery

Portable mast and antenna

Lengths of coax with connectors

Spare fuses for radio equipment

Lengths of electrical cable for repairs

Screwdrivers, wire-cutters, pliers, insulating tape

Soldering equipment (gas or 12 volts)

Raynet ID card (or other means of identification)

High visibility jacket

Thick pullover

Hat and gloves

Waterproof outer clothing

Boots (wellington or hiking)

Small amount of first aid equipment

Spare pullover

Spare trousers

Spare socks

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5 Call-out procedures

5.1 Standby Periods

Whilst the Group would normally be called out for an unforeseen event, we have in the past been asked to be on standby for a short notice activation. On these occasions call out would still normally be by telephone, but there could be circumstances where members could be asked to monitor their radios during a period of emergency. In this situation, any of the following frequencies should be monitored for the first 5 minutes of each hour.:

Repeaters R7 GB3GN (145.775 MHz)
R1 GB3NG (145.625 MHz)
2 metres 144.650 MHz if in an agreed coverage area.

5.2 Call-out by User Service

A User Service wishing to instigate a call-out will contact one of the persons listed in the Call-out List (Appendix A). The following information will be required, and this page can be used to note the details:

- (i) User Service calling
- (ii) Name, rank and phone number of person calling
- (iii) Location of incident (NGR and name of location)
- (iv) Exercise or Emergency
- (v) Nature of incident
- (vi) Location of place to report to (User Service Control Point or similar)
- (vii) If possible, purpose of call-out (e.g. comms from incident site to Aberdeen, or portable at scene to Control Unit etc.)

NOTE: Items (iv) to (vii) are the ones to be passed on to those being called out.

5.3 Mobilisation of members

The person receiving the initial call-out (usually a Committee member) will undertake a call-out of the members of the Group; but first make decisions as follows:

- a) Number of members needed - decide how many members you need to get going initially, based on the following:

Incident Controller	one member to go direct to incident to make contact with the User Service before arrival of mobile control. He/she will then be the incident controller for the Raynet activity until relieved of that task.
Mobile Control	one or two member(s) to load equipment into the unit and to transport (tow) the unit.
Control Room (or wherever the link is to be to)	two members.
Mobile Repeater	one member if a repeater is necessary

Portable Operators as many as required by the User Service at Incident

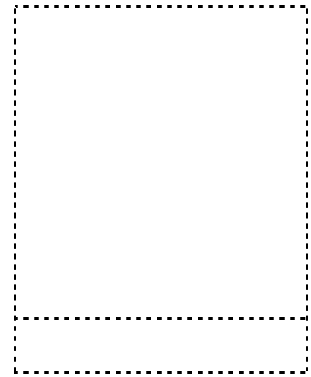
b) Frequencies - decide on frequencies - you will need:

Function	MHz	Default MHz
incident frequency (incident scene)		144.650
link frequency (incident to main control) OR link repeater frequencies		144.650 145.6875/145.0875 145.650/433.700
admin. simplex frequency (used by the person conducting the call-out)		145.225

c) Order of call-out

Task	Assigned to (callsign)
1 The first contact is the initial incident controller. Ask the person nominated to copy down the details from 5.1(iv) to (vii) above, the chosen incident frequency, and the admin. frequency. Their task is to go to the incident site, make contact with the User Services and be ready for the arrival of the mobile control and other members, providing talk-in.	
2 Next contact is one member with a mobile repeater (if this is needed). Ask the person nominated to copy down the details from 5.1(iv) to (vii) above, the chosen link frequencies and the admin. frequency.	
3 If portable operators are required at the scene, this is the next call. Ask the persons nominated to copy down the details from 5.1(iv) to (vii) above, the chosen incident frequency, and the admin. frequency.	
4 Next contact is the two members to go to the point to which the comms are required from the incident site (Red Cross HQ etc.). Ask the persons nominated to copy down the details from 5.1(iv) to (vii) above, the chosen link frequency, and the admin. frequency.	
5 If required contact a member who can tow the mobile control. If you cannot get one who can, consider seeking assistance from the User service. Ask the person nominated to copy down the relevent details from 5.1 (iv) to (vii) above, and the chosen incident frequency, and the admin. frequency.	
Keys to the mobile control are available in the control room. Next contact any member chosen to assist with the loading.	

- 6 Now start to consider whether shifts need to be set up, i.e. replacing those members already called out after some hours. If so, start arranging for more members over the phone. You may now need to look to other groups for assistance, or turn to lapsed members of this Group. Consider the possibility of setting up an arrival point, i.e. a location to which all stations go and from where they speak to Incident Control and obtain instructions.
- 7 Consider the need for food and drink for those called out.



5.4 Action by members on call out

Members called as above will take the following action:

- (i) if you receive a call-out and do not recognise the voice, don't assume that it is a hoax; contact a committee member if you are in doubt.
- (ii) ensure that you have all, or as many as practical, of the items listed in section 4.1 above.
- (iii) before leaving home ensure that your family know why you have left.
- (vi) go to the location instructed, monitoring the stated frequency; If nothing heard try calling on the admin. frequency.

5.5 Action by members on arrival

- (i) first member at the incident site: Put on a Raynet jacket to identify yourself, contact the User Services and seek instructions. Then act as talk-in for the mobile control and other members.
- (ii) member towing mobile control: maintain a listening watch on the agreed frequency, and take instructions from member (i). Set up the mobile control as quickly as possible.
- (iii) members at main control: go to the stated location, establish yourself on the VHF link frequency, and await a contact from the mobile control or the mobile repeater.
- (iv) member operating mobile cross-band repeater: decide on an appropriate location, and start using the link VHF frequency in both directions until you have established comms, and then move one of the stations, usually control, to UHF.
- (v) member operating mobile in-band repeater: decide on an appropriate location, and start using the link VHF frequency in both directions until you have established comms, and then make ready the repeater. Advise control when the repeater is operational and, when asked to do so by control, inform all stations to change to the repeater frequencies. Continue to monitor the repeater and the simplex link VFH frequency.
- (vi) other members: report to location they were asked to attend and call on the agreed frequency and act on controller's instructions.

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6 Controlling an Exercise

The following hints are provided to assist the Exercise/Incident Controller. Some of these points may be valid if you are operating in a real emergency, and you should be aware of them if you are to be the Controller for any event.

Remember that if you cannot control properly, the Exercise may well be a failure.

- a) Put on the GROUP CONTROLLER waistcoat immediately you arrive, and get a transceiver working on the agreed frequency for talk-in purposes.
- b) As soon as you have another member available, leave that member as talk-in, and to get the team working - mast up, antennas on, transceiver operational.
- c) Make yourself known to the Organisers, and any Emergency Services present. Tell them where your Control Point is. Discuss briefly what is required of us with whoever has called us out - task, locations, lists of competitors, time scale, and arrangements for feeding our members.
- d) Go back & brief your members - locations, task, use of tactical callsigns, brevity on the air. Make sure that they all have RAYNET waistcoats on.
- e) Check that the Control is fully operational, then send the members to their locations.
- f) Remember that you are the Controller (the Boss for the day) - control what is going on. Stop members being long-winded, and allow no chit-chat on the air. Don't be long-winded yourself, it is infectious. Make decisions - someone has to.
- g) Keep a log of what is going on, even if it is in rough form. For example, don't tell a station to "stand by" and then forget them. In some exercises report sheets will be provided to pass to the organisers.
- h) Use Tactical Callsigns, (except during the 15 minute check) because:
 - If the organisers are in the mobile control, they don't know where GM9ABC is,
 - You may make a mistake in converting "Point 2" to "GM9ABC",
 - It makes it easier to change members round.
- i) Remember a check-in every 15 minutes for 3 purposes:

To ensure that your team is alive and well

To allow them to comply with their Licence (giving their full Callsigns every 15 minutes)

To comply with the requirements of the Talk-through Permit (even if not using T/T, it keeps us in practice).

It tells other users of the frequency (if any) who is using the frequency, particularly if operating out of our own area.

- j) Record the call-signs on a sheet at the start of the exercise. You will then have a list which shows both Amateur Callsign and Tactical Callsigns on which you can record the 15 minute check- ins. If a station does not respond, try again, then move down the list and return at the end. If there is still no contact, check to see if any other stations can raise him/her.
- k) The check-in announcement is as follows:

"This is [Call-sign] the Control Station of Grampian Raynet located at [location or NGR] on behalf of [User Service], operating in the [2m/4m/70cm bands] with a Talk-through unit under Permit Number

All stations now check in.

GM9BCD QSL?"

(GM9BCD replies "GM9BCD QSL")

"GM9CDE QSL?"

(GM9CDE replies "GM9CDE QSL") etc.

7 Operational procedures

7.1 Message handling

During exercises, all messages which portray any information which could lead listeners to imagine that a real disaster has occurred must contain the words "Exercise Message" to ensure that the listeners are not misled.

7.2 Net discipline

This is important

- (i) do not transmit without first obtaining permission from Control.
- (ii) do not leave the frequency or your location without obtaining permission from Control.
- (iii) Be Brief - decide what you want to say before transmitting - remember the saying "put brain in gear before engaging mouth".
- (iv) Use tactical call-signs, with Amateur call-signs only every 15 minutes.
- (v) Remember that the person at the other end may be writing down the message - do not rush.
- (vi) Use the dropped carrier routine - send a phrase or two at dictation speed, followed by "QSL", then drop carrier long enough for the receiving station to acknowledge by repeating "QSL". This also allows other stations with urgent messages an opportunity to contact control.

7.3 Immediate messages

These are messages which must be passed without delay (typically this will be related to serious or life threatening injuries or the prevention of imminent such injuries). Control will respond immediately to any station which cuts in using the words "Immediate Message"; all other stations should remain silent.

For urgent messages a station should cut in using the words "Urgent Message". Control will handle this message before any other traffic except an "Immediate Message"; all other stations should remain silent.