Raynet Exercise

David Townsend, G0WVA*, Kent County Raynet Controller, Joint Thanet Raynet Controller, describes how the use of SSTV during a Raynet exercise added another dimension of great benefit to the council emergency planning department.

E XERCISE RO-RO was originally planned to be a local council exercise with the purpose of testing both the local council's emergency planning department and the emergency plan for the Ramsgate New Port (ferry terminal). Raynet's involvement came about after a discussion with the County's Emergency Planning Officer at a previous Kent County Controller's meeting regarding Thanet Raynet's tests with SSTV.

I have always been amazed by the use of mobile telephone during exercises, as although they are a very useful tool, a danger of complacence can arise. During any major incident this technology could be one of the first to fail, for this reason they were (from a Raynet perspective) banned. After all, if we cannot set up a professional system that would enable us to communicate not only with audio but in this case also visually, what use would we be in a real emergency?

Although we did not know the scope of the exercise, we knew that we would need access to Ramsgate New Port, so a meeting was arranged several weeks in advance. They very kindly offered us free movement within the port and this turned out to be invaluable during the exercise.

SCENARIO

RAYNET WENT into this exercise unaware of the scenario, indeed we were unaware of our role other than to use SSTV. It transpired that the scenario was that a lorry containing chemicals had slid down a wet unloading ramp while the ferry was discharging, overturned, and after several other incidents produced a toxic cloud, which threatened the residents of Thanet.

EQUIPMENT

THE DECISION TO use the KISS approach was taken at a very early stage by the

* E-mail: David.Townsend@eurotunnel.com

From left to right, operating the SSTV, camera, and radio are Shane, M1AJU, and Stuart, 2E1GTF, while Derek, G0DFI, ran the SSTV repeater. The County's EPO Stephen Scully is keeping a keen eye on them.

technical working group within Thanet Raynet. We wanted to prove not only that we could achieve our objective, but also with minimal training and equipment.

After several tests with various equipment and software we decided to use the Kenwood TH-D7E, its companion the VC-H1 and a relatively low-spec laptop computer running *Chroma Pix* for the SSTV pictures.

For the audio system, rather than set up another talk-through station, and for several other reasons, we decided to use one of our local repeaters, GB3EK, which is located in Margate.

This was chosen, not only for its location but also because in a real situation this repeater would be an ideal first-use system, as it is fitted with a battery back-up facility which would provide several hours of use should we have a district / county power grid failure. This would give good communications not only around Thanet but also further afield until such a time that Raynet had set up its own communication system.

The system was first tested using simplex frequencies. Once any technical issues were overcome a single cross-band repeater was set up to see if we encountered any picture degradation. This proved to work satisfactorily and the number was increased one at a time until in total four repeaters were used with no loss of picture quality.


Series of actual SSTV images received during the exercise. From top to bottom: general view of Ramsgate New Port ferry terminal; the ferry about to dock; the ferry discharging its 'real' cargo; the ferry's loading ramp (now considered to be discharging its 'imaginary' lorry); the imaginary toxic cloud moves out to sea.

Ro-Ro

The complete transmit and receive SSTV system: the Kenwood TH-D7E, VC-H1, TNC and laptop.
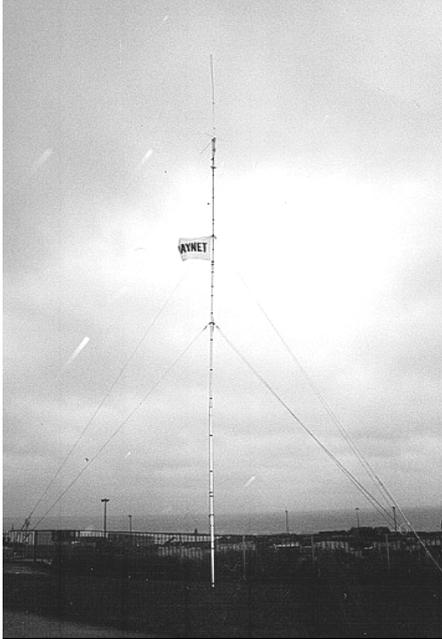
The SSTV repeater located on the east cliff just above the Royal Harbour, Ramsgate.

THE EXERCISE

THE DAY HAD arrived. It was a cold and wet November day and the weather forecast proved to be accurate, with wind from the SSE gusting force eight with heavy rain at times. This indeed made a change from the weather normally experienced during exercises. If we could set-up and produce good results in these conditions, that would be a good result in itself.

The only communications we had received prior to the exercise stated that the exercise was 'fluid'; the emergency response team located at Thanet District Council office and at the Ramsgate New Port would be left to decide when we would be required. Should they fail to realise this by 0830 the Thanet District Council's Emergency Planning Officer would intervene and advise them not only of our availability but the assistance that we could offer.

Eventually we received the call out at 0915. The primary call-out team was notified, and by 0925 we had arrived at Thanet District Council offices. However, a small technical problem at the office in which we were located meant that we had no mains power; this delayed our start by some 10 minutes. Eventually the problem was traced back to the power sockets not being connected to the internal building's mains ring. Once an alternative supply was located, control was operational at 0935.

By 0945 the SSTV repeater was up and running. The repeater located on the cliff-top just above the harbour enabled the SSTV operators located within the harbour area below to run on very low power levels, therefore enabling the maximum possible operational period. The communications established for the exercise are shown in **Fig 1**.

At 1000, the secondary call-out team comprising of members from Medway Raynet were put on standby. However, due to the nature of this exercise and the manning requirements, they participated only as observers.

After a brief discussion with the Emergency Planning Officer, it was agreed that small groups from the emergency response team would visit our control; they would then instruct us as to the images they required. In all we transmitted 50-plus images from Ramsgate harbour into Thanet District Council offices during the three-hour operation. These images related to certain incidents as the scenario unfolded.

Once the ferry had moored and finished discharging its 'real' cargo, the next stage of the exercise would begin. As the lorry approached the bottom of the ramp, it overturned causing the chemicals to spill. After several other events the leaking chemicals caused a toxic cloud to from. Concern was raised that the cloud might threaten local residents.

At approximately 1300 the exercise wound down, we were invited back to Thanet District Council's offices for lunch prior to the exercise debrief.
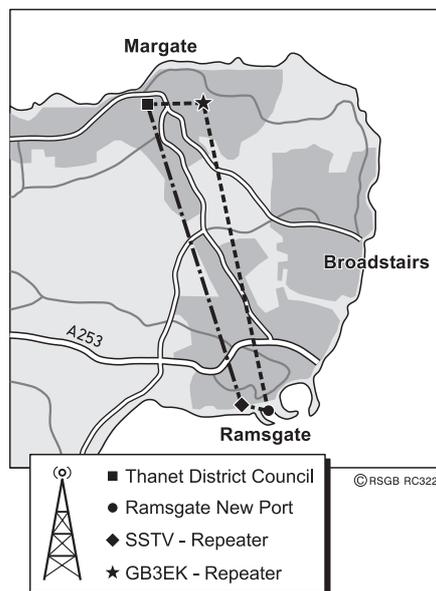

Fig 1: Communications map for Exercise 'Ro-Ro'.

DEBRIEF

ALL THROUGH THE exercise, I received comments regarding Raynet; these comments were a reflection on how far Raynet has moved on, technology-wise. I received the impression that the famous *Hancock* sketch still lives on as many people's perspective of amateur radio.

I am not in a position to comment on the exercise other than as it related to Raynet. Those comments were all very favourable with one common theme: they all agreed that "a picture paints a thousand words". For this reason, it was suggested that in future exercises, or indeed in live situations, when Raynet uses SSTV an LCD projector should be used so that the received pictures could be displayed on the main wall.

THE FUTURE

SINCE THE EXERCISE, the news has spread throughout the local emergency services and emergency planning community, with requests either for further information or a demonstration. As a result of the exercise we were invited to demonstrate SSTV to all the district Emergency Planning Officers in Kent with another date, yet to be decided, arranged to demonstrate SSTV to the emergency services in Kent. The plan is to feed in two SSTV signals, each having its own repeater. These will then feed one main repeater which in turn will feed County Hall in Maidstone. In preparation for this the Raynet groups held a county SSTV exercise on 17 February.

The county has also formed an SSTV Working Group with the aims of researching software, hardware and then standardising the system, so that all groups within the county are operating using one system.

We will shortly be starting an FSTV and ATV working group, with the aim of building upon the SSTV system so that we will be able to offer the User Services various other options should they require this technology.

I would like to thank the RSGB, RA, Kent Repeater Group and the Ramsgate New Port not only for their assistance and advice regarding permits, licensing issues and access to repeaters, but also for their positive approach and professional attitude, for without such assistance our participation in the exercise would have not been possible. ♦