Radio Controls for Orienteering – Quick Guide for SOA Events

Introduction Orienteers may be familiar with the "radio control" symbol in control descriptions – in the "old days" manned radio controls were commonplace at major events, providing feedback to the commentary team and organiser. In the modern context radio controls are unmanned units which relay information i.e. competitor has punched back to a central point. In *some* circumstances a manned control may be the better option, especially if there are concerns over competitor safety in rugged or remote terrain. There is no requirement to mark modern radio controls on the map or on the description sheet.

Purpose Radio controls are an essential component of Level A or major events e.g. Scottish 6 Day as they provide the commentary team with information as to the progress of competitors in different stages of a race. Organisers and planners need to think of which race or races are important – it is prohibitively expensive and impossible to manage the coverage of every race. For example the focus could be on the Elite or FCC or Masters Cup race. The radio controls act as a useful pre-warning before a spectator control, or in the case of a relay a pre-warning to waiting runners.

Technology In the UK there is currently one main provider – GP Projects who provide a range of different units. These are compatible with both EMIT and SportIdent and work with the three common results systems - SportIdent AutoDownload, Sport Software OE and OS and Mike Napier's MERCS. Cables from the SI or EMIT unit attach to a small clear plastic box (usually waterproof but the connectors are not!) which connects to the results system in one of several ways – cable, radio (walkie talkie), SMS or GPRS. Differences in the units, their capacity, latency (delay), cost and range are summarised below:

	Name	Capacity	Latency	Cost	Range
Cable	OTS Merge	250/min	<10 sec	Fixed	<500m
Radio	OTS Radio	30/min	<20 sec	Fixed	<1 km
SMS	Osprey	20/min	<60 sec	Variable (6 p per punch)	Unlimited (GSM)
GPRS	Eider	40/min	<30 sec	Fixed	Unlimited (GSM)

The SOA and Scottish 6 Day Co currently own an OTS Merge, 2 x OTS radios and an Osprey Unit. We have only 3 suitable SI units (Master Stations with BSM7 Serial) that can connect with these units. Additional Radio Control units and compatible SI Units can be hired in from GP Projects.

Course Planning The need for suitable information for Commentary should be taken into account by planners and controllers when selecting and positioning 'radio' controls. Early liaison between the planner and commentary team is desirable, but in practice planning is usually well advanced before this happens. As a rough guide radio controls should be placed as follows:

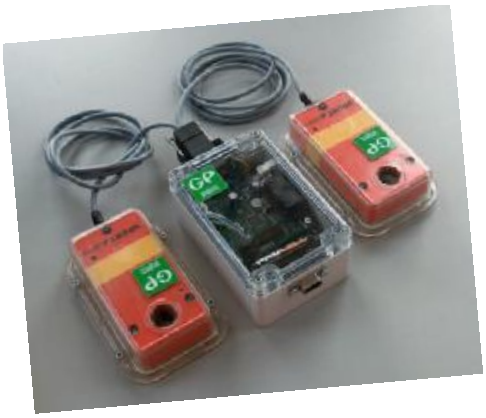
- Elite @ 33% and 66% of Course (particularly Classic distance)
- Pre-Spectator (1-2 mins before expected)
- Pre-Finish (For priority classes)
- Last (Everybody) (unless run in is very short)
- Finish (Everybody)
- Road Crossings (If timed)

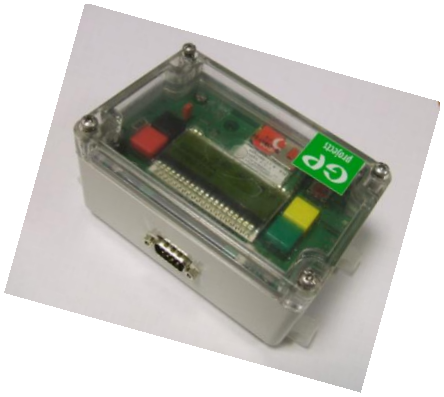
Remember that the commentators want to have the information on runners *before* they are *visible* to the crowd, so they are looking for controls 1-2mins before a spectator or finish control, not [just] on it.

Opinions as to the best placements of radio controls will differ – consultation at an early stage will help. The commentators should not need to see control sites on the map during the planning phase, but this can be relaxed if it is felt that the courses will not be compromised by the commentator and/or professional assistance from GP Projects. For IOF events there are strict protocols on map availability, but consideration can be given to issuing degraded maps of course shapes to aid commentary as well as for early display on screens and web sites.

The choice of technology will be driven by many factors. These include:

- Availability of existing units
- Cost of hire units
- Variable costs and competitor numbers (Osprey with SMS)
- Geographic extent of area
- Visibility and length of run-in (note latency times)
- Terrain including topography and vegetation cover affecting line of sight
- Mobile phone coverage (check when in the terrain)
- Pedestrian traffic and configuration of event arena (cables may need to be buried and this takes effort of 5 mins per metre to protect)
- Cables cannot be laid in concrete (<5 m of rubber protector available)
- Accessibility of terrain and resources to place units (on correct T bars)





Future Developments Wireless links between the SI unit and radio control are being developed. Currently the radio control tends to be mounted (gaffer tape around a polybag) under the SI unit. There are instances where competitors have tripped over the unit destroying the capability and of course in terms of broadcast/line of sight the situation is far from ideal. Future units might be high up a tree out of the way!

Commentators currently have the luxury of being able to talk up “live” reports from the course even if the competitors had passed by some time previously. Who is to know? With emerging technology

including GPS and live TV feeds this may not be possible. Production (to include commentary) will become more and more important for that great event.

Further Information A PowerPoint presentation "Commentary, radio controls and systems for Major events" by Ian Marsden from the 2011 Major Events Conference is available through the SOA Professional Officer. For additional information see Planners Guide to Orienteering Commentary presentation (from GP Projects website).

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