Intruder Watch Coordinator's Spectrum Forum Report

Summary

After several relatively quiet years, 2018 has been busier for Intruder Watch.

A large number of reports of HF intruders have been sent to Ofcom and these have been acted on promptly. A few intruders have subsequently disappeared while others persist.

Intruder Watch is once more exchanging intruder reports with other societies in the IARU R1 Monitoring System. The Intruder Watch log now appears along with those of the other societies in the IARU R1 Monitoring System Newsletter, which is published monthly.

We now have a limited capability to get a 'fix' on transmitters using the KiwiSDR TDoA direction finding network. This is very new and under active development. Its accuracy on ground wave paths is good. The jury is still out on its accuracy on sky wave paths.

Reports sent to Baldock

- In the 6-month period ending 30th September 2018, 89 reports of HF intruders were sent by IW to Ofcom at Baldock.
- These reports related to intruders heard on 39 different frequencies. 32 of these were in the 7 MHz band (which is the lowest exclusive primary amateur allocation).
- Up to six reports related to a single intruder heard on different occasions.
- In each case, Baldock monitored the reported frequency, usually within minutes of receiving the email from IW, and tasked direction finders in the UK and other European countries.
- In 80 out of the 89 reports, Ofcom also heard the intruder at Baldock and opened a case. In the other nine, Baldock was unable to hear the intruder because (a) it had gone off the air in the meantime, (b) it was inaudible at Baldock because of propagation differences, or (c) it was inaudible because of amateur activity on the same frequency.
- In six cases, the intruder was heard on a particular frequency and DF'd to a particular location on three separate calendar dates. This met the threshold required by the process in the Radio Regulations for a formal complaint of interference to be made via the ITU to the administration concerned. Six complaints to other administrations were made by the UK.
- In some cases, direction finding showed the intruder to be ship-borne in international waters. The identity and therefore nationality of the vessel was unknown so no further action could be taken.

Types of Intruder

The most common types of intruding signal were:

- J7D: CIS-12 (31 reports)
- F1B: (24 reports)
- A3E: AM broadcasting (12 reports)
- B7D/J7D/G1D: Stanag 5511 (Link 11) (11 reports)

IARU Region 1 Monitoring System

RSGB Intruder Watch is a member of IARU R1 MS, and information about intruders is exchanged via a real-time web logger, a mailing list and a monthly newsletter.

There is a comprehensive web site with links to these resources at:

https://www.iarums-r1.org/

While input from other countries provides a useful stream of tip-offs about intruder activity, IW can only make reports to Ofcom on the basis of intruders heard by UK licensed amateurs. Also, to ensure that only regular and persistent intruders are reported, IW can only report intruders to Ofcom when they have been heard by UK amateurs on three occasions (e.g. one amateur on three occasions or three amateurs once each).

Amateurs in other countries should report intruders via their own monitoring systems.

KiwiSDR TDoA

A Time Difference of Arrival (TDoA) extension has been added to the KiwiSDR software, enabling any user with a web browser to carry out Direction Finding on an LF, MF or HF transmitter. The software incorporates a ray-tracing model for ionospheric paths, and the accuracy of the fixes depends on the willingness of the ionosphere to match the model.

This facility is no match for a good angle-of-arrival direction finder such as those used by Ofcom, which can often get an azimuth accurate to within 1 degree. It is sometimes useful, however, to be able to get an approximate fix. It is probably of greater use to IW's counterparts in other countries where the regulator may not have such a good HF/DF capability.

Richard Lamont G4DYA
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