

ENIGMA 2000

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Frequently Asked Questions

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Number Stations - FAQ's

How are Number Stations received?

A variety of Number Stations can be received off the Short Wave using a suitable receiver and antennae.

What sort of Radio Receiver is best?

There is no particular model or make of receiver needed. Many enthusiasts use the modern portable receivers badged with the names of Roberts, Sangean and Sony. [Many receivers can be obtained from the second hand market at sensible prices].

Analogue vs Digital readout?

Most modern enthusiasts prefer the apparent accuracy of a digital readout; the analogue does have its place within the interest. [The more enthusiastic monitor may use the fast tuning rate of the analogue readout to locate an unknown frequency. Whilst convenient the question of analogue frequency readout accuracy cannot be ignored. This is where a calibrated frequency standard is of great help].

Modes?

Any receiver used for Number Station Monitoring should be capable of demodulating transmissions sent in AM and Single Side Band [USB and LSB viz Upper and Lower Side Band].

Morse [or CW] can be resolved using the Side Band mode. The more expensive Radios will have a separate setting for CW and may switch in narrower filters to enhance the received Morse. Such filters can also be applied to AM and SSB as well, but are beyond the scope of this document.

Antenna

Apart from your receiver your antenna is the most important piece of equipment you have. A poor antenna will lead to constantly poor results so a little time reading up on the basic theory of antennae is not wasted. Such information can be found on the Internet or in publications published by, or recommended by the Radio Society of Great Britain or the American Radio Relay League.

A majority of Number Station enthusiasts use the Random Length Antenna. It is often referred to as the 'Long wire' or the 'Marconi Wire'. Here a length of wire of no particular dimension is strung up between two points, as high as possible, with one end connected to your receiver. Check the Receiver's manual for any special arrangements or requirements you need to take into consideration when connecting and use an earth or ground connection.

If an external antenna is used with a modern portable receiver be aware that even a conservatively long antenna may cause an overload. It is for this reason that we suggest a three metre length of wire to start. Try to string up roughly east to west.

What Frequencies and when?

Perusal of the ENIGMA 2000 Newsletter and the ENIGMA 2000 Prediction List [both available from the file section of 'ENIGMA Monitors Group' <http://groups.yahoo.com/group/enigma2000>] will provide an accurate suggestion of a frequency to use as a start for certain stations.

Looking at the frequency listings available from a variety of sources one would expect to reasonably discover transmissions between 2100 to 25000kHz [2.100 to 25.000MHz]. However, it is never that easy. Three factors will affect your ability to receive any particular station:

- The location of the target station *and/or* the receiving station,
- The time and frequency used
- Propagation effects.

Obviously attempting to receive E03a, believed to be sent from Guam, on a frequency of 21866kHz at 2300z [UTC/GMT] from Great Britain will not be successful.

Given this particular station can be heard on 23461kHz at 1300z in summertime it is unlikely that excellent signals would be heard at that time and frequency in mid-winter. Either way the signal would not be heard in the middle of a sun storm, so one needs to be aware of propagational matters. Again, publications from the RSGB and ARRL are of great assistance as are space weather forecasts from the Internet.

What mode will I receive the station in?

What mode depends on the particular station. Use of the ENIGMA Control List [available from 'Files' section of Group] will greatly assist. Another useful document is the ENIGMA 2000 Hitch Hiker's Guide, recently updated.

You can expect to encounter AM, CW or ICW, MCW, USB, LSB and Polytones.

Identification of a particular station.

There are a host of ways in which a station can be identified:

Always record Frequency used, time heard, date and day.

Use a set standard: Freqs in kHz, Time in UTC[same as GMT]. Show this by inserting a lower case 'z' after the time which is always in 24 hour clock. Write the date in an unambiguous way:

24th April, 2005 is easily understood as is 24/04/05.

Assuming we hear a station at 1.00 pm sending on that date on 14.487MHz, the log might read:

14487kHz 1300z 24/04/05

That gives the basic information necessary to perhaps locate the station again, but there is no descriptive detail pertaining to the station itself.

The transmission started with a tuning signal followed by a female voice repeating a five figure group followed by a few more bars of the same music. After ten minutes two chimes from a Glockenspiel signal the start of two hundred five figure groups, each repeated once. At the conclusion of the message to two chimes are heard again followed by the same few bars that acted as a tuning signal at the beginning.

We now have sufficient detail to allow identification; the log would now read:

14487kHz 1300z 24/04/05 [mx chimes x2 5f/ee/yl ends 1346z]

Knowing the music to be the English folk song 'The Lincolnshire Poacher' would greatly help with the identification of this station as E03 The Lincolnshire Poacher. The start and finish times of this station are generally the same, it also sends the same number of groups - 200 repeated twice.

To recap: Each station has its own peculiarities and those peculiarities can be used in a similar way to build up knowledge of any particular station.

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There is a wealth of information to be had from the ENIGMA 2000 newsletter, the ENIGMA Control List and a host of other supportive documents available from the 'Files' section of Group.

Remember, when buying a receiver look for a digital display with continual short wave coverage that can demodulate AM and SSB.

Good listening; whatever you hear please post your logs to ENIGMA 2000 for inclusion in its Newsletter.

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