What are Maidenhead locators and how are they calculated?

The Maidenhead locator system is a shorthand method of identifying the location of an amateur radio station. It has its origins in Europe and was initially designed for use by VHF enthusiasts as a way of providing a quick and simple way of communicating a stations location within Europe.

For a long time, European amateurs had been using a system called "QRA (or QTH) locator system". When radio amateurs outside of Europe wanted to use a similar locator system, it was found that the QRA system would not work and resulted in stations in different parts of the world having the same QRA and thereby resulting in some potentially confusing QSOs!

A meeting of VHF Managers in 1980, at Maidenhead in England conceived the "Maidenhead locator system". It has been adopted worldwide.

What are the Maidenhead locator squares?

The Earth's surface is divided into 18 by 18 (324) "Fields", each one 20 degrees longitude by 10 degrees latitude. Each Field is divided into 10 by 10 (100) "Squares", each one 2 degrees longitude by 1 degree latitude. Each square is finally divided into 24 by 24 (576) "Sub squares", each one 5 minutes longitude by 2,5 minutes latitude.

The Fields are indicated by two letters AA - RR, the Squares by two digits 00 - 99 and the Sub squares by two letters aa - xx. The first character is the longitude and the second character is the latitude at each level. The complete locator is the sum of all 6 characters, for example "IO92nb".

At VHF, all six characters are usually given; for HF work it is more usual to give only the first four characters.

The attached map shows an extract from the Maidenhead locator map. The UK is almost wholly in the ‘Field’ ‘IO’, with East Anglia and Essex being in ‘JO’ Field. Square ‘92’ covers a large part of central England; Wales resides in three squares – 81, 82 and 83, for example.

Do I need to know my locator square?

The answer to this question is ‘it depends’! It depends on whether you want to know where an amateur radio station is located with a reasonable degree of precision. If they are located in a city then this is easy to find on the map. But if they are located rurally and the nearby towns are very small, the task of locating them is much more difficult. So, Maidenhead locators help you to locate a station with a reasonable degree of precision.

Locations can of course be given very accurately with latitudes and longitudes. However, latitudes and longitudes can be expressed in different ways – traditional or decimal for example. In poor or weak signal conditions, latitudes and longitudes this can become very confusing. Not only is it difficult

to ascertain the format in which the information is being sent, but also asking for a repeat of certain characters can be very difficult indeed. The Maidenhead locator makes this task much easier. It provides a standard format of two letters, two numbers and two letters. No misinterpretation there then. It is also much easier to ask for repeated information, for example, to repeat the numbers or the last two letters, etc.

VHF operators, almost as a matter of routine, will quote – and ask for – a locator, so it is as well to know yours. Additionally, most VHF contests will use locator squares as a basis for scoring. In the same way that many HF contests use DXCC entities as a key component of the score, VHF operators are likely to work far fewer countries (or DXCCs) in a contest and so use locator squares as a way of spreading out the scores.

There are also many VHF and UHF awards that are based on locator squares – usually the first four characters. In the UK, for example, the RSGB provide a number of locator-based awards. There is the 50MHz squares award, starting at 25 squares and working upwards in increments of 25 squares. There is also the 144MHz squares award that requires both a set number of countries and squares to be worked. The basic award is for 10 countries and 40 (four character) squares. CQ magazine also now offer a 'Fields' Award, with a certificate for working a minimum of 50 Fields, rising in multiples of 50 additional Fields.

How do I calculate the Maidenhead locator for my QTH?

- Use a grid square calculator such as the one found at: http://www.amsat.org/cgi-bin/gridconv . You will need to know your longitude and latitude in degrees, minutes and seconds. The on-line calculator is virtually instant and will provide both lat/long to grid square and grid square to lat/long conversions. You can find your latitude and longitude with a reasonable degree of accuracy from any map (particularly maps used by walkers).

  The following site allows latitude and longitude to be entered in a number of formats and will also calculate the distance between two locator squares: http://www.qsl.net/dk3vn/fmaidenhead.html .

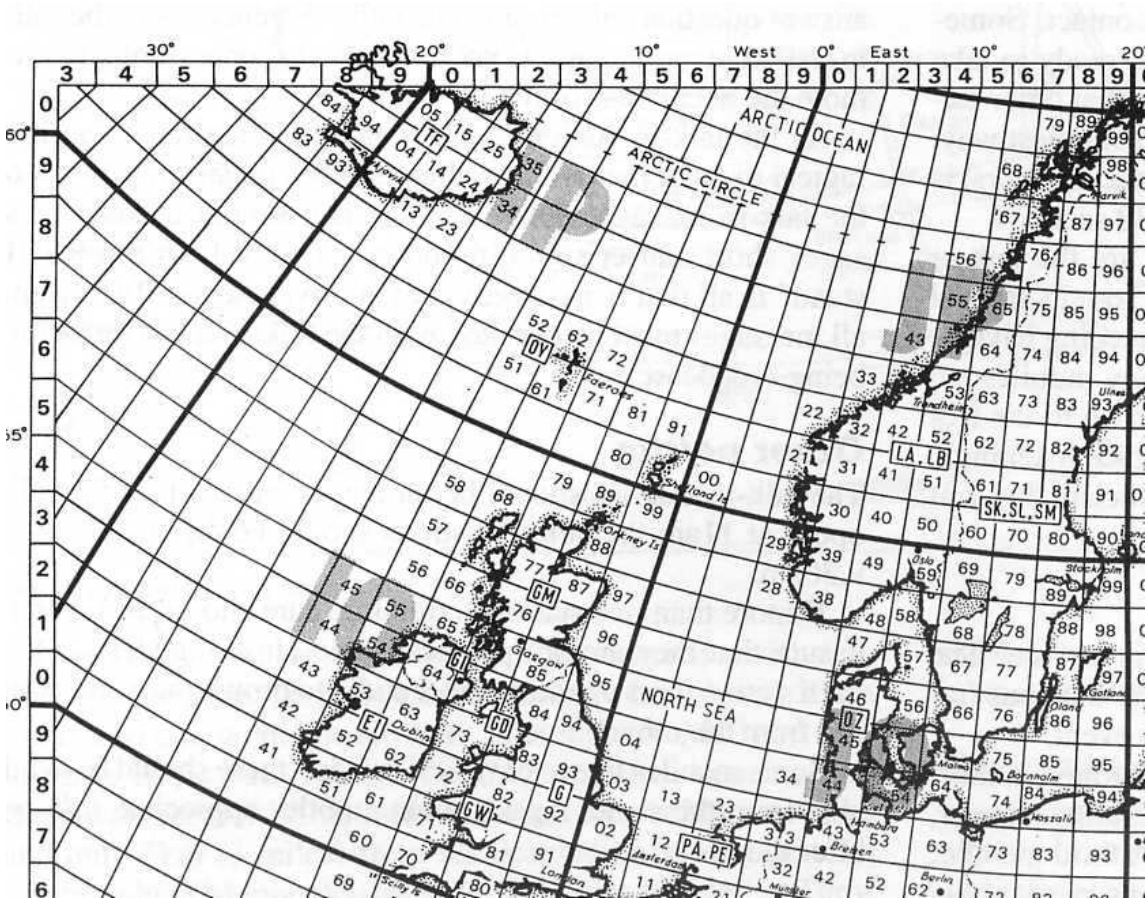
  The following site provides a small program that you can download and use (free) – and very useful it is too: http://users.skynet.be/on1dht/tinylocator.htm .

  This site provides the text of a BASIC program that one could adapt and modify to suit ones own requirements: http://www.trade80.com/trs80/files/maidnhed.msb .

- Have a look at any of the Maidenhead (grid square) locator maps that are available form the RSGB and the ARRL.

- Use a GPS unit as many of these will provide a readout of Maidenhead locator.

- Calculate it by hand. This is quite complicated and takes a lot of paper to describe. The ARRL provide an excellent paper on how to calculate a Maidenhead locator by hand. It may be found at: http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=1996 and scroll down the web page until you see a section on hand calculation and a reference to a pdf file.



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