

What is Amateur Radio Direction Finding (ARDF)



In simple terms amateur radio direction finding (ARDF) is looking for a radio transmitter. In IARU Region 3 ARDF is played on 80 m and 2 m. The competition would normally be in a rural area, preferably wooded valleys. Within this area are placed 5 transmitters that have to be found by the competitors. A sixth transmitter is usually provided at the finish line to help lost competitors find their way home. Each transmitter will be keying a unique identification code in the form MOE, MOI, MOS, MOH, MO5. From the MOE transmitter you would hear: da da da da da dit. From the MOI transmitter you would hear: da da da da da dit dit. The difference between the two transmitters being the number of dits in the last character. The last three transmitters produce sounds of three dits—S, four dits—H and five dits—5. On VHF this will be MCW, a tone, and CW on HF. These correspond to transmitter number one through five.

At the competition there may be several classes of competitor, not all classes are required to find all transmitters.

Contestants are free to find the transmitters in any order they wish.

There is a time limit set for the course. Any competitor who has not finished within this time is disqualified.



This time limit is set by the organizing group and takes into account, the number of competitors, the terrain and the length of the course. Region 3 IARU rules recommends that it should be 100 to 140 minutes for a 4 to 7 km course. The five transmitters on the course operate sequentially on a common frequency. Each transmitter will operate for 1 minute and then be silent for 4 minutes, during which the other 4 transmitters will operate. In ARDF the transmitters are not usually "hidden", and infact a competitor is only required to find the control point, which will be within 2 metres of the transmitter. Photo 1 shows a typical control point. Included at the control point is a "punch" that is used to mark your card to prove that you have visited the control point.

At each transmitter a referee will be sited to ensure there is no collusion between competitors as ARDF is an individual sport. Also the referee will ensure there is no "foul play" etc.

The "winner" of the event is the competitor who finds the most number of transmitters for their class, in the shortest time.

What is needed to participate

That depends a little bit on you and on the course. It is possible to use simply a handheld. Any form of directional aerial can be used for ARDF, additionally an attenuator and a method of accurately determining signal strength would be useful. As the level of competition becomes "keener" your equipment needs to become more refined. There are a number of commercial receivers available at a range of prices. Most of these receivers provide attenuators to cover a wide dynamic range and audible and visual signal strength indicators.



Figure 2 shows a Japanese ARDF receiver. This is an excellent commercial design packed full of features. The unit is available from Apex Communications. (1)

A full set of equipment is available from Australia from Ron Graham's,(2) see footnotes for his contact details.



Figure 3 and 4 are a couple of views of Ron Graham VHF receiver. This is an AM dual conversion superhet' based on the MC6632 chip. It is tuneable over the bottom part of 2 metres and includes an audio signal strength indicator. The antenna is a modified HB9V.



The Auckland VHF (3) group has available a microprocessor key that will meet most requirements. Figure 5. This was designed to interface with handhelds to provide clubs a quick and easy way to provide VHF ARDF transmitters, it also includes a output for key a 80 m transmitter.

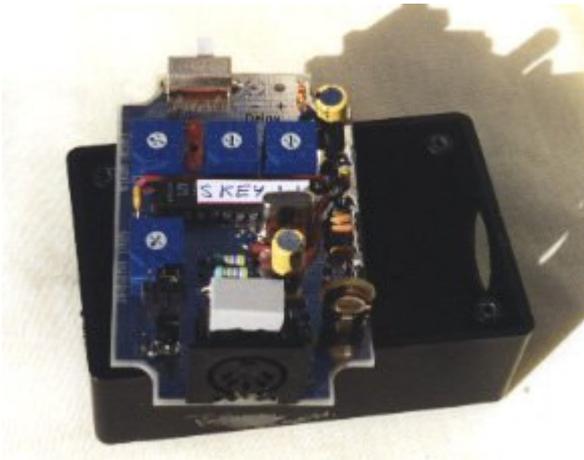
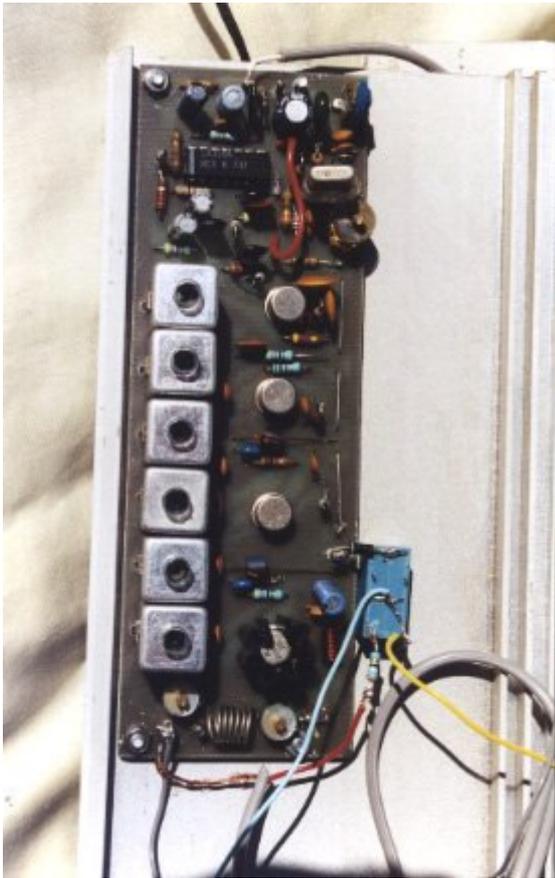


Figure 6 shows a typical 2 metre transmitter that can be used as the hidden transmitter.



How fit to I need to be

If you can walk 5 km, then you will be able to compete in club events with a degree of success. As the level of competition increases, so must your physical “prowess”. To become a Regional or World champion, you should expect to become very much more athletic. For most people there is a great amount of participation and fun that can be had between these two extremes.

Footnotes

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