RAG CHEW

GLOUCESTER AMATEUR RADIO AND ELECTONICS SOCIETY

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Go to the GARES web site for all the latest news www.g4aym.org.uk
This paper is formed of articles offered by you the members of the club:

A Tale to Tell

A great suggestion from Graeme is for club members tell the story with the theme of "How I Became Interested In Radio." or maybe "Before I Found Amateur Radio", It could become a series.

WHO WAS HANS BEGGEROW

At the end of the nineteenth century wireless telegraphy was on the verge of becoming a commercial reality. The fundamental aerial was considered to be the half-wave resonant arrangement used originally by Hertz, and the Marconi/Lodge development in which a quarter-wave radiator was tuned against ground or a counterpoise. As the twentieth century began the problem of ground to air communication began to be of importance. Balloons had been used militarily for some time, the dirigible or air-ship was in an advanced stage of development, and the usefulness of these craft would be considerably increased if they could be in wireless communication with other stations on the ground and at sea. Transmitting and receiving equipment was fairly well developed by this time, but there was a problem with airborne aerials. The Marconi/Lodge aerial was unsuitable because of the difficulty of providing a ground connection when airborne, and anything which brought the high-voltage ends of aerials near to the highly inflammable hydrogen used to provide the lift for these craft was understandably hazardous. This ruled out the end-fed Hertz, and the centre-fed version did not appear to be promising since the two halves would trail in close proximity below the the basket or gondola, the radiation from one half being largely cancelled by the radiation from the other.

The problem was solved in a German patent of 1908. Dr. Hans Beggerow (what a wonderful name - try saying it with the correct middle-European pronunciation and you will see what I mean) suggested the form of aerial shown in diagram1. It is a full-wave current-fed aerial with one half folded back upon itself giving, in modern terms, a half-wave radiator end-fed via a quarter-wave matching transformer. In the original patent it was shown hanging with the high voltage bits safely out of the way below an observation balloon and looking very much like an inverted J-pole. The main reservation about this type of feed involves the attempt to go from what should be a balanced feeder to an unbalanced radiator, but it has to be admitted that the system usually works quite well.

The Zepp, (diagram 2) as it came to be known, enjoyed considerable vogue in the inter-war period since it could work well with a bit of adjustment not only on its fundamental frequency but also on harmonics. It was well suited also to the standard garden of the long, narrow, house-at-one-end variety. Those of you who are mature enough to remember this aerial probably think that it is of historical interest only. Until recently I was of the same opinion and then discovered, somewhat to my surprise, that I am actually using one. If you are, like me, using a J-pole or Slim-Jim at VHF then you are using a version of an aerial which will reach the grand old age of one hundred and five sometime this year.

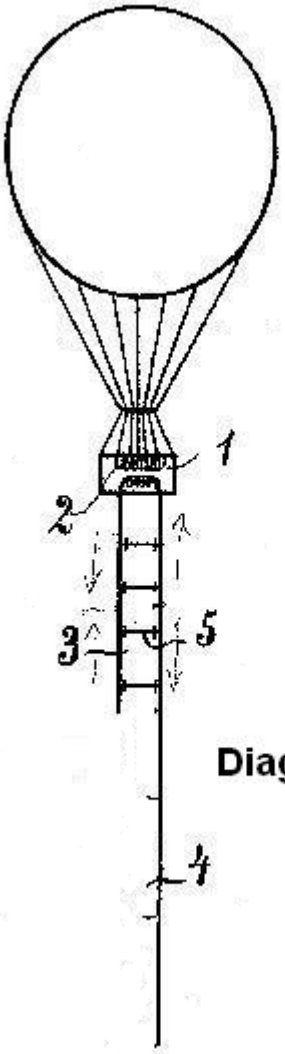


Diagram 1

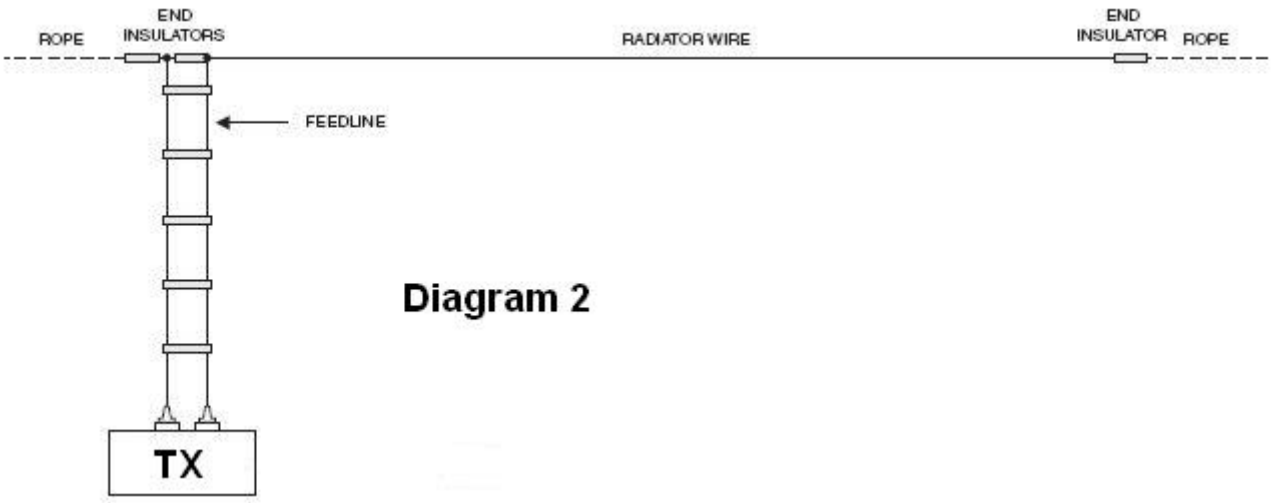


Diagram 2

A Quick, Cheap and Easy Desk Microphone Project
Costing less than £30.00 - and finished in 60 minutes.

If you are operating your rig at home using a hand held microphone and would like to own a desk mic, how do you decide what to buy and at what price? Is it necessary to buy a microphone made by the same company as the rig, or will any microphone do if the plug fits? Stick with the branded items if the look is more important than the cost, but if function at low cost is your ideal, read on.

The Monacor ECM 200 microphone has been designed to work with an Audio PA amplifier but is easily modifiable to work with any modern rig. I have been using one for several years and James 2E0JCA has one that I modified for him and to the best of my knowledge, neither of us has ever had any problem. As supplied, the microphone is battery powered and presents the audio on a standard 1/4” mono jack and there is no Push to Talk switching. The project will modify the unit to have a momentary push to talk capability and to connect to your existing rig.

What you need is:

1. ECM 200 Microphone: The unit is available from CPC and can be viewed at http:// cpc.farnell.com/_/ecm-200/p-a-microphone/dp/MP33107?Ntt=ecm+200 at a cost of £25.14 including VAT including a £5.45 minimum order handling charge. If you can find others to join you in this project a group buy will avoid the surcharge.
2. Microphone Cable: Good quality microphone cable long enough to fit your operating needs which for the moment I can provide. This is professional microphone cable.
3. A Microphone Plug: To fit your rig.
4. Tools: You will need hand tools and soldering equipment.

What you have to do.

Disassembly

Undo the two screws nearest to the battery compartment that hold the plastic feet on the underside of the stand and then the two plated screws and put them where you wont loose them, This will release the bottom of the unit. Unsolder and remove the output cable.

Fig. 1: Monacor ECM 200

Rewiring

Run the new cable through the grommet and pull enough cable through until it reaches beyond the left hand end of the compartment. Cut and remove the outer insulation just level the bottom right corner of the PCB. Push the wire gently between the edge of the battery compartment and the fixing pillar to act as strain relief.

Earthing via the Screen.

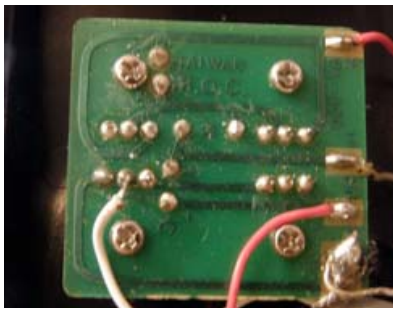
Taking care not to leave any stray wires, remove the outer insulation exposing about 2”. Twist the strands of screen together and solder them close to the cable. Cut off the excess leaving about ¼”, Solder the short end to the bottom right corner of the printed circuit board as shown in the photo. There are also connections to the screen from microphone and the negative wire from the battery.

The Audio via the Red Wire.

Measure a convenient length of the red wire to allow looping access as in the photo, Strip the end of the wire and solder to the pad.

Push to Talk via the White Wire.

Measure a convenient length of the white wire to allow looping access as in the photo, Strip the end of the wire and solder to the middle pin of three as shown in the photo.



Reassembly.
Replace the bottom plate to complete the microphone modification.
Rig connections.
A suitable connector for your rig is required at the other end of your new cable. If you have several rigs and would like your new microphone to work with then all, now is a good time to make a start. Fit a three pin latching connector, I have used the standard male Cannon three pin connector. I put this on all my DIY microphones. I then make up a short lead with a mike plug for each rig with a female cannon connector on the other. This allows complete interchangeability.

The above article is reproduced from the Cheltenham club's CARA news by kind permission of their editor James Stanway GM3CGC and author Giles Herbert G0NXA.

And now…how I made my own
By Mike G6OTP

I have always wanted a desk mike but was put off by the very high cost. I'm sure that HEIL mikes are very good but need they cost as much as that?
Converting the mike in Giles' article was an opportunity not to be missed so I did it and the audio, FM at least, seems to have been well received on the Gloucester Club net. What I have to add is how I wired it for the Yaesu FT897/857/817 range, which has RJ45 data type connectors. If anyone is familiar with crimping RJ45 plugs onto eight core data cable then read no more. The easy way though is to buy a ready made patch lead and cut it to length. I bought mine from Maplin but I wouldn't buy another one. The outer insulation is rather stiff and, being scrunched up into too small a package, tends to retain its folds. Flexible patch leads at half the price can be got from Harding's in Cheltenham's lower high street. There are two options, make up an adapter for Giles' three pin plug or wire directly to the microphone as I did. Either way, the interesting job is to identify the wires to the plug pins. Life is easier if you can get an RJ45 PCB socket which has some legs you can get a probe onto.

		Cable colour
Pin 1	Fast Scan	Brown
Pin 2	Ground	Brown/White
Pin 3	PTT	Green
Pin 4	Mic	Blue/White
Pin 5	Mic Ground	Blue
Pin 6	+5Volts	Green/White
Pin 7	Up	Orange
Pin 8	Down	Orange/White

Your cable colours may be quite different from mine so be sure to write them down. Looking into the Yaesu socket, pin 1 (fast scan) is on the left. Almost at the end now, after you have identified the wires you want, that is both grounds, PTT and Mike, make sure that you insulate the others separately as they will all 'do' things when plugged into a Yaesu and one carries +5volts. This particular microphone seems to a generic type. A similar one is advertised on E-bay and I bought a used one at the Harwell rally for a fiver. One last thing of all, although Giles' mike works fine and so does mine, I think it is appropriate to say that it is all at your own risk.

Thank you to those who have contributed to your issue
If you have an article to share projects, old stories, jokes or cartoons, trips, non radio interests
e-mail it to me or give it to me on paper
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