

Newsletter

Chesham & District Amateur Radio Society

www.g3mdg.org.uk

August 2022

We meet the 2nd and 4th Wednesdays of the month at the Ashley Green Village Hall, Ashley Green, HP5 3PP

Welcome

No HF contests this month.

This month we look at the clubs Baofeng BF-888S handhelds in detail and delve into how to program them.

Thanks to Peter (M7CKP/2E0PTH) for his article on the 70cm Moxon, well designed and with easy to follow instructions, why not have a go yourself, it could make a useful antenna for little cost.

QRM has now prevented me using my radio between 13:50 and 23:05 daily, it appears something may be on a time switch. I now have the task of finding out what's causing the problem.

Thanks to Jeremy for his Spotlight on Brainerd, Minnesota, this month it's the turn of the Baby Face Nelson gang to have their 5 minutes of fame!

Matt (M1DTG) gave a demonstration of his BuddiStick vertical antenna at the club meeting of the 27th of July, I found it very interesting with thoughts on whether we could make this a club 'build' project?

Normally I'm hunting for articles to put in the newsletter, but as you can see, we have a 'full house' this month, thanks.

Bryan M0IHY

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Contact details

Chairman - Jeremy Brown (G3XZG)
- Guy Plunkett (M0GUY)

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Treasurer - Matt Whitchurch (M1DTG)

All the above are members of the committee and can be contacted on cdars-committee@googlegroups.com

Editor - Bryan Page (M0IHY)

Chairman's Ramble

Morning all and after the heat in the middle of the month, it feels somewhat cold this morning, ridiculous really as the weather forecasters are saying that the temperature is now about average for July.

Band conditions have been a bit variable, or perhaps better described as random, particularly on 50 MHz, with sporadic E appearing and disappearing at very short notice. I have not worked outside Europe in this year's E's season so far, but that may be more to do with when I have actually been able to get on the air.

The month started with a very successful VHF field-day entry, and many thanks to all those who contributed. We entered the MS section, (note to self to get those letters round the right way), and certainly seem to have come near the top, with our main activity on 144 MHz, and incursions on to 50 and 70 MHz. This seems a good way for a club to go that doesn't have the resources to throw lots of hardware into the air.

We have also had successful meetings, the first one demonstrating what handhelds can do from Ashley Green, and the second with Matt demonstrating his Buddistick antenna, and even managing a QRP contact, albeit a bit plagued by some idiot who must have been able to hear the QSO, tuning on the frequency. Both meetings have been held outside, though I suspect the meeting on 27th July will be the last one outside this year, as it was getting a bit cold after 9 o'clock.

We now need to look ahead to the SSB field-day in September and the Affiliated Societies contests through the autumn and winter.

We are starting to put together a programme for the autumn, with an emphasis on antennas. We will have Peter showing his home-made 70cms Moxon and talks on simple HF antennas (Roger G3MEH), and on coax cables and connectors.

We also have the annual quiz with Aylesbury in November, which this year will be at the Doghouse, as they are hosting.

But I find it hard to imagine the winter when there is still some summer to come, though I hope we get enough rain to be able to get tent-pegs into the ground in Wigginton in September, otherwise the tent will have to be kept on the ground by the weight of the people and equipment in it.

I'm off to Shropshire for a couple of weeks and will see what I can do with a handheld at the Long Mind, as we are staying close to there.

In the meantime thanks again to all those who have contributed in many ways to the club over the last month.

73, Jeremy G3XZG

Editor's Muse

As I said on page 1, I'm suffering severe QRM at my QTH, it completely kills 80m and 20m (160m less so) with enhanced background noise on the other HF bands between 13:50 and 23:05 on a daily basis, time to check out the September 2021 edition of RadCom, page 58, where finding QRM is the subject.

The building of the loop took some 15 minutes, I was fortunate enough to have spare coax with a PL259 attached, a PL259 'T' piece, a spare PL259, an old broom handle and a couple of tie-wraps.

Testing the loop was quite simple although the strange part was the fact the signal almost disappeared on leaving the house, thus suggesting the source was within. Shutting individual circuits off proved fruitless, next was to ask the neighbours if they had anything on a timer at the times I suffered QRM, the answer (unfortunately) was 'no', time to rethink on strategy.

Bryan M0IHY

Baofeng BF-888A



So, what's in the box?

The radio comes boxed with:

- a mains charger
- belt clip
- strap
- earpiece & mic (not shown)
- battery
- small 12 page manual
- 11cm SMA antenna

Like many other Baofeng radios, it has a panic alarm and an LED torch.

AT the club meeting of the 13th of July we decided to bring in our handhelds and see what repeaters we could contact from Ashley Green, the club also has 4 Baofeng BF-888S handhelds, which are the subject of the newsletter this month.

With 4 seemingly 'non-working/programmed' units I asked if I could take one home, do a write-up on programming it and include the contents of the sparse manual. Programming the 16 available channels turned out being far easier than I thought.

Baofeng BF-888A

Having spoken of what's in the box there is the inevitable question "what's not in the box", just 2 items:

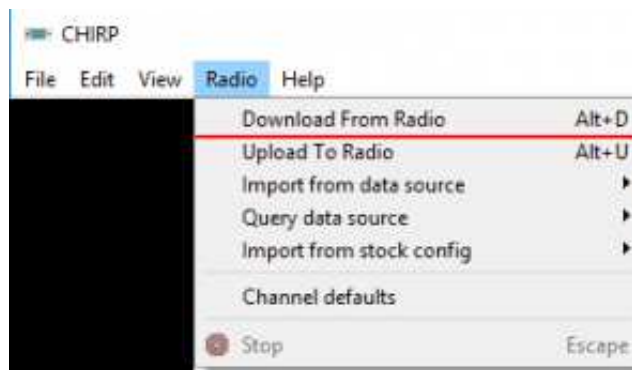
- programming cable
- programming software

Fortunately I had a programming cable for my SenHaix handheld that was suitable (I also have a lead for my TYT DMR which looks the same), all I had to do was download the software, initially this came from the BaoFeng website but as it only catered for COM ports 1-8 I chose the CHIRP software, which was the easiest to program.

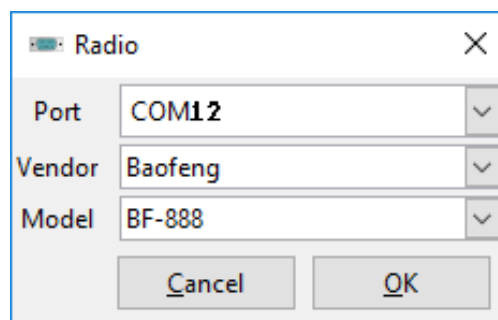
Note: *Connecting the programming lead to the radio and to the computer I found the computer unable to communicate with the radio, this, after a little reading on the Internet, proved to be the fact that I had the volume turned to zero (on but not turned up), it advised about half-way, which is what I set it to and everything worked!*

On initial connection to the PC it downloaded the appropriate driver to communicate with the radio and assigned it (in my case) to COM port 12.

Find where you installed the CHIRP software (mine was at C:\Program Files (x86)\Chirp\) and run it, you will be presented with the following screen:



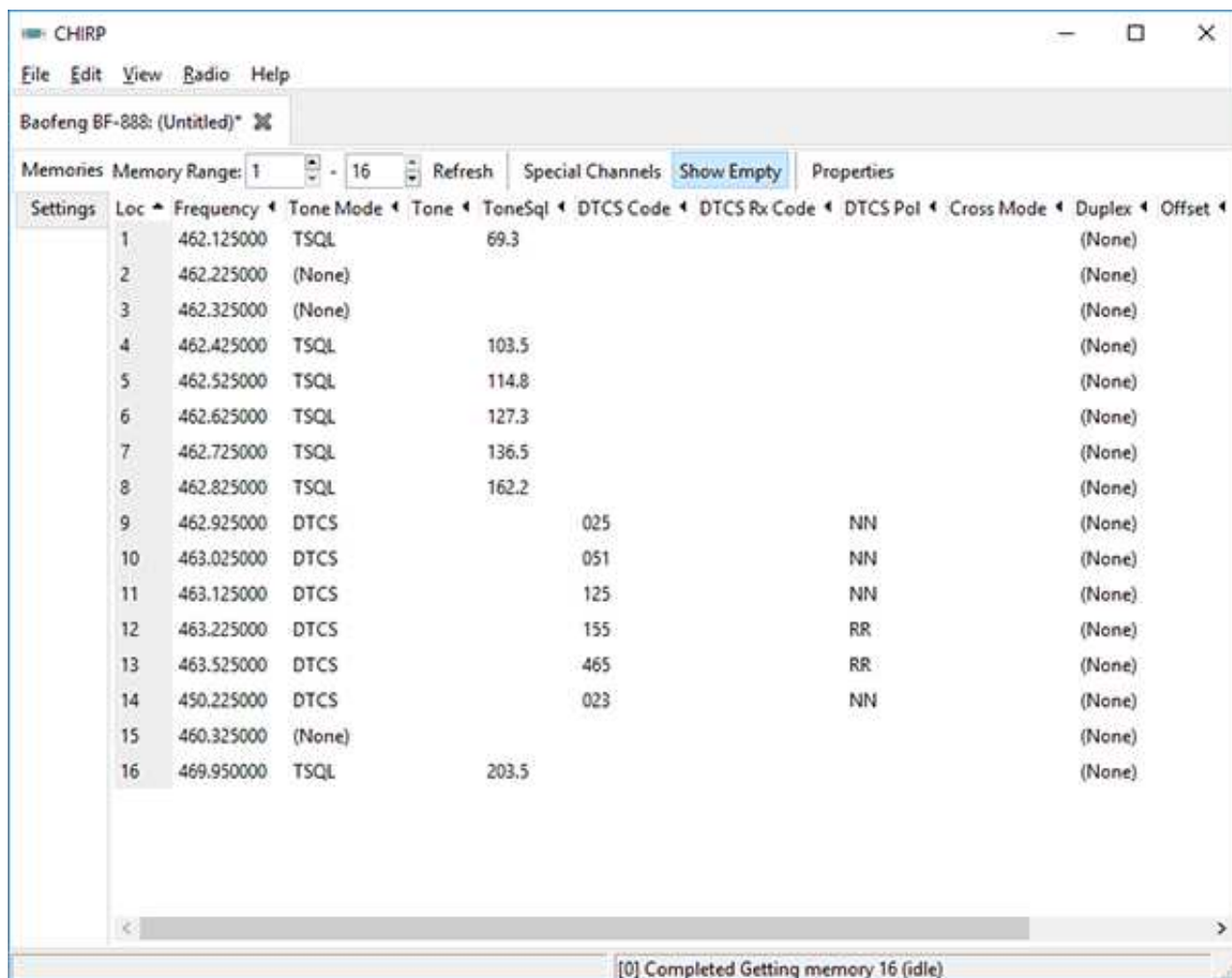
Select "**Radio**" from the dropdown list and then "**Download From Radio**", this then takes you to another window which offers COM port, Vendor and Model. Establish which COM port is being used by the radio (Control Panel -> Device Manager -> Ports (COM & LPT)) and set the Port accordingly.



Tip: *If the settings are correct but you get a message indicating the computer could not communicate with the radio, simply select each dropdown box and reselect the correct settings, I found this worked every time.*

The software will now read the contents of the 16 channels and display them on the screen.

Baofeng BF-888A



What you see above is a screenshot off the Internet (I'm doing this write-up after the event). I had already planned which repeaters I wanted to program into the radio, the closest to Berkhamsted and 70cm only.

						Miles from	
	Town	Callsign	Locator	Frequency	Shift	Berkhamsted	Tone
1	Amersham	GB3AU	IO91qp	433.175	1.6	11	82.5
2	Aylesbury	GB3AV	IO91ot	433.050	1.6	14	118.8
3	Basingstoke	GB3BA	IO91kh	433.325	1.6	27	71.9
4	Bracknell	GB3BN	IO91oj	433.000	1.6	29	118.8
5	Harrow	GB3HR	IO91to	433.350	1.6	12	82.5
6	Gidea Park	GB3HW	JO01cn	433.325	1.6	31	110.9
7	Luton	GB3LT	IO91sv	433.250	1.6	8	77.0
8	North London	GB3LV	IO91xp	433.050	1.6	19	82.5
9	Milton Keynes	GB3MK	IO92ob	433.000	1.6	24	77.0
10	Erith	GB3NK	JO01bl	433.100	1.6	32	103.5
11	Caterham	GB3NS	IO91wg	439.675	-9	37	82.5
12	St Neots	GB3OV	IO92vg	433.125	1.6	36	94.8
13	Reading	GB3RU	IO91lk	433.275	1.6	34	118.8
14	Tring	GB3TU	IO91ps	433.225	1.6	10	77.0
15	Welwyn Garden City	GB3VH	IO91vt	433.325	1.6	11	82.5
16	Hitchin	GB3SV	IO92uw	433.275	1.6	13	82.5

Baofeng BF-888A

The fields we're interested in are:

- Frequency
- Tone Mode
- Tone
- Duplex
- Offset
- Mode
- Power

To select a field, click to the right side of the field on the row you wish to edit.

Frequency

Type in the frequency you want.

Tone Mode

Select "TSQL" from the dropdown list.

Tone

Enter the tone for that repeater.

Duplex

Select either "+", or "-" depending on positive, or negative shift.

Offset

Enter the MHz shift, i.e. 1.6, 9.0, etc.

Mode

I selected "NBFM" (Narrow Band FM) from the dropdown list.

Power

I selected "High" from the dropdown list.

Repeat each step until you have all your repeaters programmed in, then save the file to somewhere secure, this will create an 'img' file.

When all is done select "**Radio**" from the top menu and "**Upload To Radio**", your radio is now programmed.

It's handy to have a piece of paper with the channel numbers and repeaters against them as there is no visual display as to what repeater you're working.

I tested the radio with its own antenna, which I didn't think much of (because I was indoors?), I then connected the radio to my Diamond V2000 tri-bander on the house roof and managed to 'wake up' the following repeaters:

Amersham
Harrow
Gidea Park
Luton
Tring
Welwyn Garden City

Spares seem plentiful and most parts (including original batteries) can be found at relatively cheap prices.

What follows is the reformatted contents of the included manual.

Baofeng BF-888A



TX / RX LED Indicator

Lights red during transmit, green when receiving a signal

Channel Switch

Rotate to select a channel. No. 16 is the scanning channel

Power Switch / Volume Control

Turn clockwise to switch ON the transceiver.

Turn counterclockwise to switch OFF transceiver.

Rotate to adjust volume.

PTT (Push-to-Talk)

Push button to transmit.

Release to receive.

RX Monitor

Press and Hold (Squelch OFF) to hear background noise; Release to return to normal operation.

Baofeng BF-888A

Flashlight key

Press to activate LED torch function.

Speaker Jack / Mic Jack

Speaker Microphone / Programming Cable Jack

OPERATION

Switching Power ON/OFF

Turn the Power switch/Volume control (A) clockwise. You will hear a beep and speech indicating the transceiver is ON.

Adjusting the Volume

Hold Monitor button (E) own to listen to audio level while rotating the Power switch/Volume control (A). Rotate Volume Control to increase / decrease the volume.

Selecting the Channel

Turn the Channel Switch (B) to the desired channel. No. 16 is the Scanning Channel.

Transmitting

To transmit, Press and Hold PTT (D) and speak into the microphone in a normal tone of voice.

The LED indicator lights continuously red when transmitting.

For maximum sound clarity at the receiving station, hold the transceiver 2 to 3 inches from mouth and talk in a normal tone of voice.

Note: Yelling does not make your signal louder.

CHARGING the LI-ION BATTERY PACK

Charge the battery pack before using it. The new or stored (more than 2 months) battery pack cannot reach full capacity after the first charge. After 2 or 3 charges and discharges, it will reach full charge.

1. Plug adapter into electrical socket.
2. Insert transceiver or battery into the charging tray.
3. Ensure that the battery contacts connect with the drop-in charging tray. While charging is taking place, the LED will glow Red.
4. After 3 hours charging, the LED indicator will light Green.
5. Remove battery or transceiver from the charging tray.

Asterisk [*] designates function changed via software

*** SQUELCH LEVEL**

The purpose of the Squelch is to mute the speaker when no signals are present. With the squelch correctly set, you will only hear sound when a signal is present.

*** TIME-OUT TIMER (TOT)**

The TOT limits the length of a users transmission. The purpose of the TOT is to prevent transmitting for a long period of time, causing thermal damage to the radio. An alert will sound when the limit for that transmission has been reached.

*** SCANNING**

Scanning is used for hands off monitoring of your favorite frequencies. When the transceiver options are set to SCAN (via software), setting the channel selector to channel 16 directs the radio to scan the selected

Baofeng BF-888A

channels from 1-15.

1. Transceiver stops scanning when a signal is detected and continues when signal is gone.
2. If there are less than 2 channels, it cannot scan. (Go figure)
3. On channel 16, Press and Hold the PTT and MONI buttons while switching ON the transceiver to turn the Scanning ON or OFF.
4. If FM radio function is activated, Radio cannot scan.

* VOICE PROMPT

1. VP can be set ON/OFF via software.
2. On channel 10, Press and Hold the PTT and MONI buttons while switching ON the transceiver to also Activate or Deactivate Voice Prompt.
3. On channel 15, Press and Hold the PTT and MONI buttons while switching ON the transceiver to change Voice Prompt Language (CHI / ENG)
4. Any channel 1-16, Press and Hold MONI only while switching ON the transceiver will Deactivate Voice Prompt for that session only.

* VOX (Voice Operated Transmit)

VOX eliminates the need for using the PTT key to transmit. The transmitter is keyed when the VOX circuit senses you are speaking into the microphone.

1. When operating the VOX function, set the VOX Gain level to recognize the desired sound level.
2. If level is too sensitive, transceiver will key with noise in the background.
3. If level is not sensitive enough, it will not pick up your voice. Set level for smooth transmission.
4. On channel 1-5, Press and Hold the PTT and MONI buttons while switching ON the transceiver to turn the VOX ON or OFF.

* EMERGENCY ALARM

On channel 11, Press and Hold the PTT and MONI buttons while switching ON the transceiver to turn the Alarm Function ON or OFF.

This is a function for your receiver only. You will Not transmit the alarm.

BATTERY SAVER

Reduces the battery power used when not receiving a signal. Battery saver turns on automatically 10 seconds after no signal is received and no operation is being performed.

BATTERY LOW ALERT

Reminds you that battery needs recharging. Alert tone will sound and Red LED will blink.

RX MONITOR

When no signal is being received, Press and Hold the MONI. This is helpful for adjusting volume level and receiving weak signals.

* BUSY CHANNEL LOCK-OUT (BCL)

BCL prevents you from transmitting on a channel if a signal is present. Pressing the PTT switch while a channel is in use will emit an alert tone and inhibit the transmitter.

* BEEP TONE

If turned on, radio will give short tone to indicate that there is nothing programmed for that channel.

* CTCSS / DCS

CTCSS (Continuous Tone Coded Squelch System) or (Digital Coded Squelch). CTCSS / DCS Description

You may sometimes want to hear calls only from specific persons or groups. This option allows you to ignore unwanted calls from others on the same frequency. These tones are sub-audible (cannot be heard) and are

Baofeng BF-888A

selectable via software.

Note: These tones do NOT cause your conversation to be private or scrambled. It only relieves you from listening to unwanted conversations.

SUMMARY of FUNCTION ACTIVATION

Ch 1-5, Press / Hold both PTT and MONI, and Power ON
VOX - ON / OFF.

Ch 10, Press / Hold both PTT and MONI, and Power ON
Voice Prompt - ON / OFF

Ch 11, Press / Hold both PTT and MONI, and Power ON
Alarm Function ON / OFF (if selected via SW)

Ch 15, Press / Hold both PTT and MONI, and Power ON
Change Language (CHI / ENG)

Ch 16, Press / Hold both PTT and MONI, and Power ON
Scan ON / OFF (if option set via software)

Ch 1-16, Press / Hold MONI only and Power ON
Deactivates Voice Prompt for that session only.

SPECIFICATIONS	
Frequency Range	400 - 470MHz
RF Rated Power	<= 5W
Channel Capacity	16
Operating Voltage	3.7V
Dimensions	115mm x 60mm x 33mm 4.53" x 2.36" x 1.30"
Weight	150g (5.3oz)

TROUBLESHOOTING GUIDE	
No Power	Check Battery Installation and/or replace/charge battery.
Can't communicate with other members	Verify that the frequency and CTCSS tones are the for all members. If all checks out okay, make sure you are all within range.
Hearing other stations	Change your CTCSS for that channel. Change to another channel.
I can clearly hear members of my group, but my voice is intermittent.	Check if microphone is blocked. If so, return radio to dealer for maintenance. Sometimes your frequency is the same as the frequency of other groups.
Can't turn on the radio, or it turns on and quickly shuts down.	Check the battery contacts on the radio. If they are broken or twisted, return your radio to an authorized dealer for maintenance.

I hope this article helps those wanting to program their Baofeng BF-888S radios.

Bryan M0IHY

70cm Moxon

Introduction

I've entered the FMAC contest three times this year in the 10W section. The location of my home is rather poor for VHF/UHF operating so I go up on a hill side overlooking Tring, it's just under a 2km walk from home. During the VHF Field Day I was talking to James about contesting and antennas, he suggested a directional antenna such as a moxon would be better than the $\frac{1}{4}$ wave ground plane I was using. There were less than 10 days between the Field Day and the next contest so it became bit of a challenge.

A moxon antenna takes its name from Les Moxon, now a silent key. I'd describe the antenna as a 2 element Yagi with the ends bent over to form a rectangle. See:

https://en.wikipedia.org/wiki/Moxon_antenna

<https://www.onallbands.com/remembering-hams-who-made-a-difference-leslie-les-moxon-g6xn-sk/>

<https://www.eham.net/article/7960>

Construction

A number of moxon calculators can be found on the internet, I used this one:

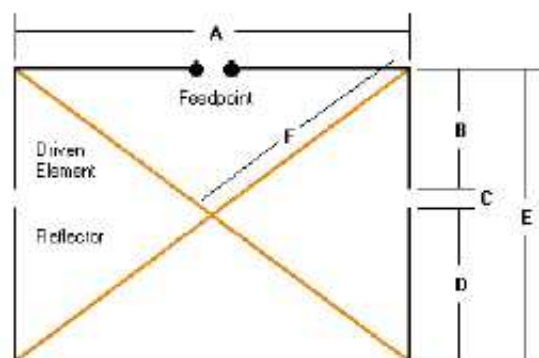
http://w4.vp9kf.com/moxon_design.htm.

I had to tweak the dimensions so the antenna tuned to 433MHz, dimension A ended up as 230mm.

Moxon antenna design calculator

Calculation Results

Frequency of Operation	433 MHz
Diameter of wire	3 mm
A	0.772 feet 0.235 metres
B	0.117 feet 0.036 metres
C	0.019 feet 0.006 metres
D	0.163 feet 0.05 metres
E	0.299 feet 0.091 metres
F	0.414 feet 0.126 metres



Parts required:

Length of 25mm diameter Glass Reinforced Plastic (GRP) tube, see postscript below.

70cm Moxon

Plastic end caps for above tube

Terminal strip

Plain Matrix board

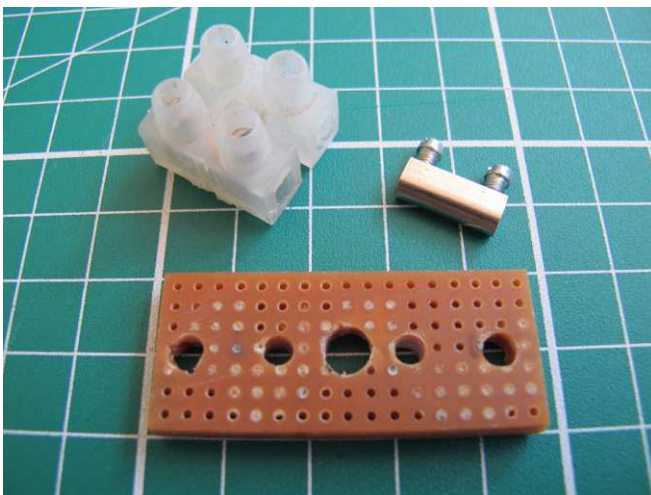
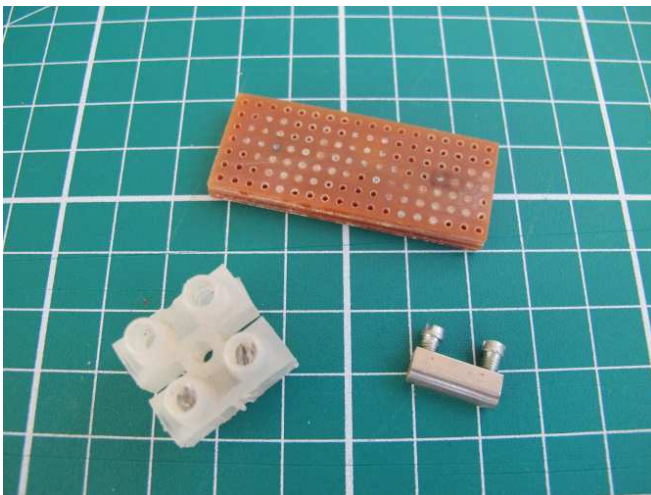
25mm or 30mm M5 Nylon nut and bolt

3.2mm Aluminium TIG welding rod

Heat shrink tubing

When choosing the terminal strip get one where the welding rod used for the driven element is a snug fit. If the holes are too large it will be difficult to align the elements. Remove the screws from the terminal strip and extract the metal connectors, retain two of the four screws and discard the plastic casing.

The driven element centre is made from matrix board, to add strength I laminated three pieces together using Gorilla Glue. Drill holes for the connectors and central fixing bolt. In my case the outer pair of holes are 4.5mm diameter to clear the screw heads. The inner pair of holes are 3.5mm to clear the screw threads and the central hole is 5.5mm. See pictures below.



Drill and cut the GRP tube as shown in the picture below. I recommend wearing disposable gloves when cutting the GRP tube, the dust can cause irritation.

70cm Moxon

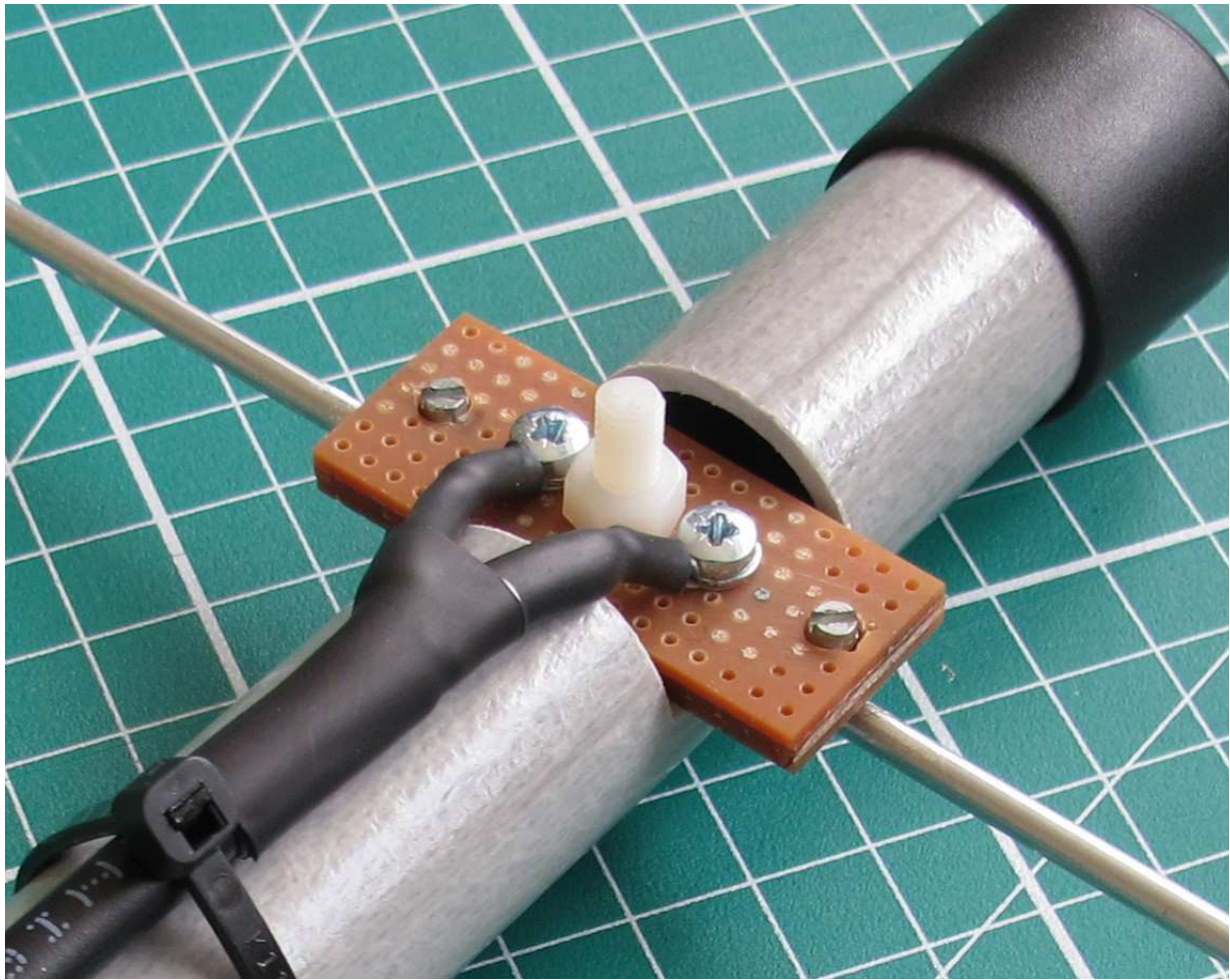
The two holes on the left accept the flag pole, one hole for horizontal polarisation and the other for vertical polarisation. I drilled 8mm holes and then reamed them out so they are a snug fit on the flag pole. The reflector is held in place by two rubber grommets. When assembling the driven element centre, replace the inner pair of screws with ones that have a larger head. In my case normal M3 screws worked well.



Cut and bend two identical lengths of welding rod for the driven element. Cut and bend a single length of welding rod for the reflector. Note: the second bend has to be done after the reflector has been fed through the two grommets. I've used heat shrink tubing between the reflector and driven elements to improve rigidity and to keep the elements aligned.

Attach the antenna down lead; I've used a short length of coax with solder tags on one end and a BNC connector on the other end. The plastic end caps prevent cuts and skin irritation caused by the GRP tubing.

70cm Moxon



Results

I completed the antenna just in time for the July 2022 FMAC contest. The moxon is certainly directional, the signal strengths were much higher and the antenna is less fragile than the $\frac{1}{4}$ wave ground plane. It's difficult to quantify how much better the antenna is over the $\frac{1}{4}$ wave ground plane, conditions at the time and the numbers of participants have a part to play. Comments from other contestants suggest conditions were far from good: *"Very strange conditions, hard work"*, *"Lowish activity and disruptive QSB all night"* and *"Strange conditions and low activity was order of the day"*.

The moxon will definitely be used in the next FMAC contest. The picture below is the antenna on location after the July FMAC contest.

70cm Moxon



Postscript

I steered clear of PVC tubing for this antenna. Although PVC tubing is light weight, strong enough and doesn't cause skin irritation problems, the tubing currently available from DIY merchants is cross-linked polyethylene and has a dark coloured lining. I'm not sure if the lining is transparent to RF or how it affects the antenna design. I'm told if a sample gets warm when cooked in a microwave oven for a couple of minutes then its conductive and would affect the antenna design. I dare not try it in our one and only microwave.

Peter M7CKP/2E0PTH

M1DTG's BuddiStick



Matt (M1DTG) demonstrating ways of tuning the BuddiStick, this is achieved by:

1. Setting the length of the counterpoise.
2. Connecting to the correct position on the coil.
3. Adjusting the length of the whip.

The counterpoise was measured out in inches and strung out between the base of the BuddiStick and a microphone stand (hidden the other side of Matt). I wonder if measuring out and placing coloured tape at that point would remove the necessity to measure in the future, just a case of roll out to the required marker for that band. Matt experimented with the counterpoise raised and also on the ground, the SWR was checked with an analyser and adjustments made to ensure we had the lowest SWR for the frequency we wanted to use.

Running just 5 Watts, Matt was fortunate enough to make a QSO with a 2E0, other signals received were from the U.S.A., Canada and Europe, attempts at calling back on CQ's from Canada and the States were thwarted by pile-ups and with just 5 Watts it was not enough to break through.

Equipment used:

- Yaesu FT817ND
- BuddiStick vertical antenna.
- LIPO battery pack.
- Antenna analyser.

M1DTG's BuddiStick

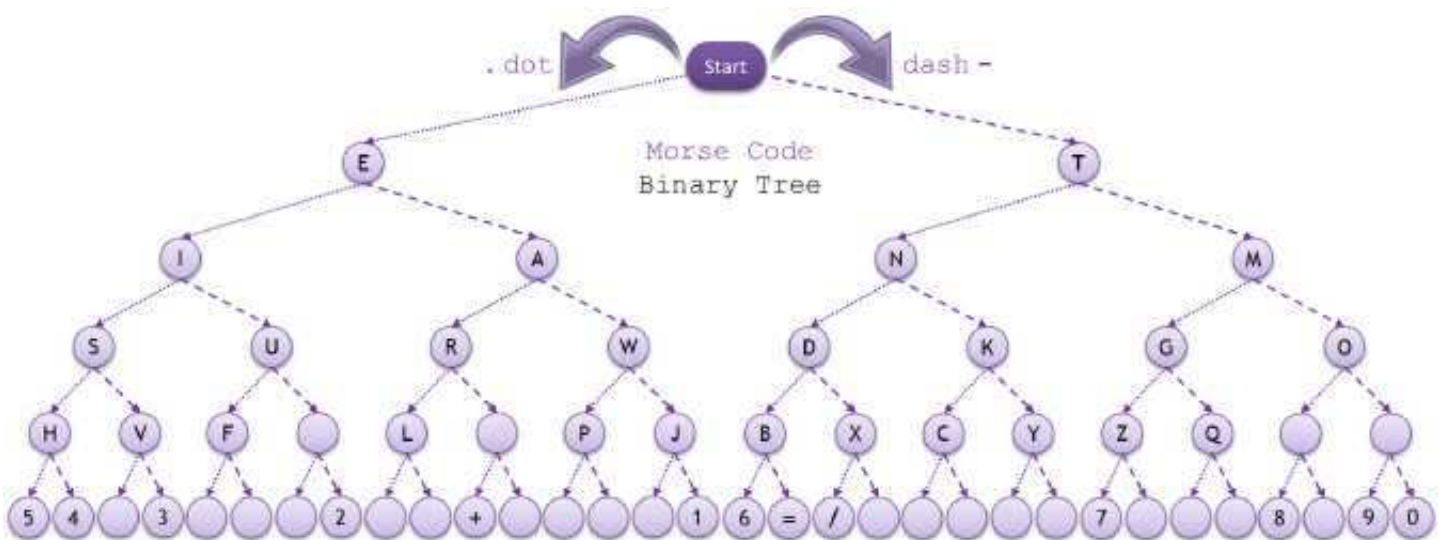


Matt talking about adjusting the position on the coil.

Morse was not the only one to be experimenting with the uses of electromagnetism, nor to have had the idea that it could be used for long-distance communication, other methods however, proved in the end to be more cumbersome than his.

His first construction consisted of thin strips of lead, with notches cut in them. These were placed on a wooden rule, about three feet long with the notches upwards. The strips were then passed under a lever which moved up and down to make and break an electrical circuit for short or long periods, the inception of dots and dashes.

By the end of 1835, a more sophisticated working model had been constructed, sending a message over a few feet. Others then joined his team, particularly Alfred Vail, who would be responsible for some of the development of the instruments used. By 1844, they had constructed a device which demonstrated sending a message over the 40 miles between Baltimore and Washington, the message being repeated back. A type of plough had been devised to lay an underground cable, but this was given up after 13 miles, and the message was carried by bare overhead cable, supported on poles with glass insulators. The transmitter was operated by a "key" which was moved by a finger to make and break the circuit, and a stylus showed the dots and dashes marked on paper at the receiving end. In previous demonstrations, a dictionary had been used, but this appears to be the first public demonstration of what became known as morse code. The code was modified twice, but its essence is what is still used today.



Looking at the alphabet as set out in the newsletter, there does not appear to be a logical sequence for how the letters are constructed. The more common letters, such as E, I, S, T, are short and easy to send, and the less common, such as Q and Y, are not so easy. No letter is more than 4 dots or dashes long and no letter contains more than three of either. Numbers are more logical, with a progression from 1 to 5 and then back from 6 to zero. Initially this lack of obvious sequence can make the letters hard to grasp, at least on paper. The only way to start learning morse in my view at least, is to start to hear it.

Looking at the chart, if you have a morse oscillator, or access to a key on your rig which is not going to transmit, start by simply sending the letters to yourself and listen to how they sound. When you start to string letters together into words, you need to remember that the consistent spacing between them is as important as the letters themselves, otherwise, they start to run into each other. You will find that there is a natural rhythm to the letters and then to the words, which makes them easier to memorise. See how it feels and sounds.

Don't do any more than that for the moment. Once you have a grasp of how it sounds in your ears when you send it, you will find, I think, it is easier to start to identify letters and words being sent by others. I'll leave you to it for now, but any feedback when you try this would be welcome.

Jeremy G3XZG

Spotlight - Brainerd, Minnesota

QSO with W0KO, Fritz

Band: 18MHz
Mode: CW
Date: 13th July 2022
Time: 15:05 GMT
QTH: Brainerd Minnesota
Coordinates: 46.21°N 94.12°W
Time Zone: GMT -6 with daylight saving in summer
Population: Half the size of Chesham



Seal

Brainerd is described as a city but in terms of population is a bit less than half the size of Chesham, totalling 14,395 in 2020. It is however spread over a wider area and straddles the Mississippi, a few miles north of where it meets the evocatively named Crow Wing river, in Crow Wing county. It stands at 1217 feet ASL, though of course a long way from the sea. Its history is redolent of the days of US expansion westward.

The town stands in the territory of the Ojibwe Indians and the area was first seen by a settler named Zebulun Pike in 1805, in his search of the headwaters of the Mississippi. A small settlement followed at Crow Wing village, a few miles south of the current town.

There were difficult relationships with the natives, and at one point in the 1830's, two natives were hanged for allegedly killing a missing girl, though their guilt has never been fully established. A short while later, a group of natives approached the town, and fearing reprisals, troops were called out from nearby Fort Ripley, only to find that the natives merely wanted to sell blueberries. Luckily someone realised that before the shooting started.

In 1870, what is now Brainerd, was founded as a crossing point of the Mississippi for the Northern Pacific railway and the town is named for the then president's wife's maiden name, which was Brainerd. He must have got on well with her family. His surname was Smith, and Brainerd is certainly more memorable.

By the 1920s, almost 90 percent of the population was employed by the railway, mainly in maintenance and there is still a repair workshop for the railway's successor there today. We have just passed the hundredth anniversary of the railway workers strike starting on July 1st, 1922, which caused much bitterness and started the decline of the town from a major railway centre.



Brainerd water tower,
as seen in the seal.

It sprang to fame in 1933, when its bank was held up by the "Baby Face Nelson" gang.

Today, the station is used sensibly as a brewery, coffee shop and can be rented out for events. It is still the local administrative centre, with its own mayor and seal.

It is also a popular tourist destination for those with cabins, as there are some 460 lakes within 25 miles of the town, mostly to the north. It has its own website, www.ci.brainerd.mn.us though I'm not sure it contains much information about "Baby Face Nelson" and I think that warrants further research.



Lester Joseph Gillis a.k.a.
Baby Face Nelson

Contest Corner (no HF this month)

August

VHF

Day	Date (2021)	Time UTC	Contest Name
Tue	02 Aug	1800-1855	144MHz FMAC
Tue	02 Aug	1900-2130	144MHz UKAC
Wed	03 Aug	1900-2100	144MHz FT8 AC
Sat	06 Aug	1400-1800	144MHz Low Power Contest
Sun	07 Aug	0800-1200	432MHz Low Power Contest
Tue	09 Aug	1800-1855	432MHz FMAC
Tue	09 Aug	1900-2130	432MHz UKAC
Wed	10 Aug	1900-2100	432MHz FT8 AC
Thu	11 Aug	1900-2130	50MHz UKAC
Sun	14 Aug	1400-1600	70MHz Cumulatives #5
Tue	16 Aug	1900-2130	1.3GHz UKAC
Thu	18 Aug	1900-2130	70MHz UKAC
Tue	23 Aug	1830-2130	SHF UKAC

September

HF

Day	Date (2021)	Time UTC	Contest Name
Sat-Sun	03-04 Sep	1300-1300	SSB Field Day
Mon	05 Sep	1900-2030	Autumn Series SSB
Wed	14 Sep	1900-2030	Autumn Series CW
Thu	22 Sep	1900-2030	Autumn Series DATA
Mon	26 Sep	1900-2030	RSGB FT4 Contest
Sun	02 Oct	500-2300	DX Contest
Mon	03 Oct	1900-2030	Autumn Series CW
Wed	12 Oct	1900-2030	Autumn Series DATA
Sun	16 Oct	1900-2030	RoLo CW
Mon	17 Oct	1900-2030	RSGB FT4 Contest
Thu	27 Oct	1900-2030	Autumn Series SSB
Mon	07 Nov	2000-2130	Autumn Series DATA
Sat	12 Nov	2000-2300	Club Calls (1.8MHz AFS)
Wed	16 Nov	2000-2130	Autumn Series SSB
Sat	19 Nov	1900-2300	2nd 1.8MHz Contest
Thu	24 Nov	2000-2130	Autumn Series CW
Mon	28 Nov	2000-2130	RSGB FT4 Contest

VHF

Day	Date (2021)	Time UTC	Contest Name
Sat-Sun	03-04 Sep	1400-1400	144MHz Trophy Contest
Sun	04 Sep	1100-1500	5th 144MHz Backpackers
Tue	06 Sep	1800-1855	144MHz FMAC
Tue	06 Sep	1900-2130	144MHz UKAC
Wed	07 Sep	1900-2100	144MHz FT8 AC
Thu	08 Sep	1900-2130	50MHz UKAC
Tue	13 Sep	1800-1855	432MHz FMAC
Tue	13 Sep	1900-2130	432MHz UKAC
Wed	14 Sep	1900-2100	432MHz FT8 AC
Thu	15 Sep	1900-2130	70MHz UKAC
Sun	18 Sep	0900-1200	70MHz AFS Contest
Tue	20 Sep	1900-2130	1.3GHz UKAC
Tue	27 Sep	1830-2130	SHF UKAC

'Air Miles', how far have we gone? / results

So, how have we done?

It's a 2-horse race this month with Jeremy and Malcolm.

CW is again the favoured mode with FT8 close behind.

(Running totals in red)

General

Most Miles

G3XZG	34,164	426,275
G3ZNU	28,612	513,873
2E0GUB		34,966
M7SMI		3,721,560

Longest QSO

G3XZG	K1WNT(3365)	XQ6XF(7707)
G3ZNU	UN7DAT(3353)	YB9BCS(7770)
2E0GUB		KF2GV(3400)
M7SMI		ZL3GAV(11785)

Average per QSO (miles)

G3ZNU	2,412	1,683
G3XZG	1,718	1,067
M0UBT		254
M7SMI		1,664

Most QSO's

G3XZG	32	248
G3ZNU	17	213
2E0GUB		101
M7SMI		2,322

Shortest QSO (miles)

G3ZNU	GX1FCW(19)	GOODQ(19)
G3XZG	DJ3AS(411)	G0SWU(22)
2E0GUB		M0CET(0)
M7SMI		G0BLQ(28)

Maidenhead Squares

G3XZG	29	182
G3ZNU	16	152
2E0GUB		35
M7SMI		631

QSO Economy Drive

High miles per Watt

G3XZG	33.65(100)	77.07(100)
G3ZNU	33.53(100)	77.70(100)
2E0GUB		68.00(50)
M7SMI		1178.50(10)

Low miles per Watt

G3ZNU	0.19(400)	0.05(400)
G3XZG	4.11(100)	0.22(100)
M0UBT		0.06(50)
M7SMI		2.80(10)

By Band

160m

30m

12m

2m

80m

20m

10m

70cm

60m

17m

6m

23cm

40m

15m

4m





'Air Miles', how far have we gone? / results

By Mode

CW

G3XZG		32	244	
G3ZNU		1	6	

FT8

G3ZNU		16	191	
M7SMI			2,313	
2E0GUB			5	

MFSK

M7SMI			9	
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SSB

2E0GUB			75	
G3ZNU			16	
G3XZG			4	

FM

M0UBT			21	
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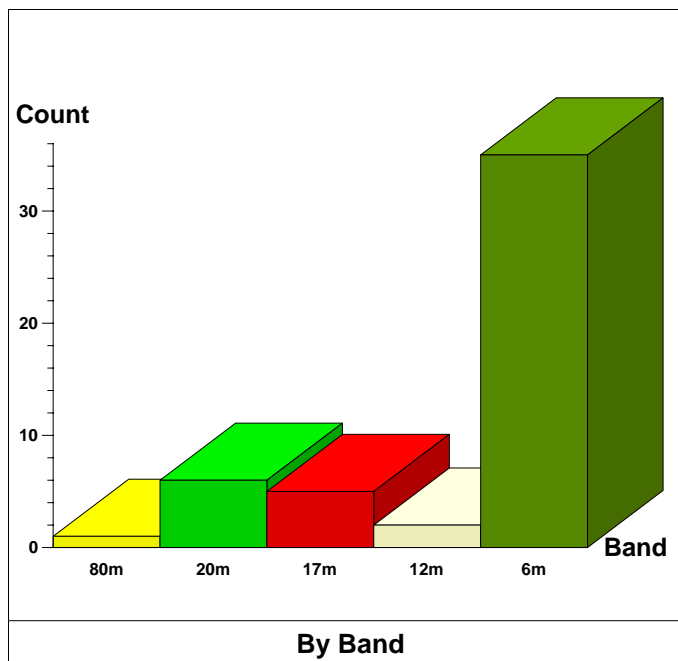
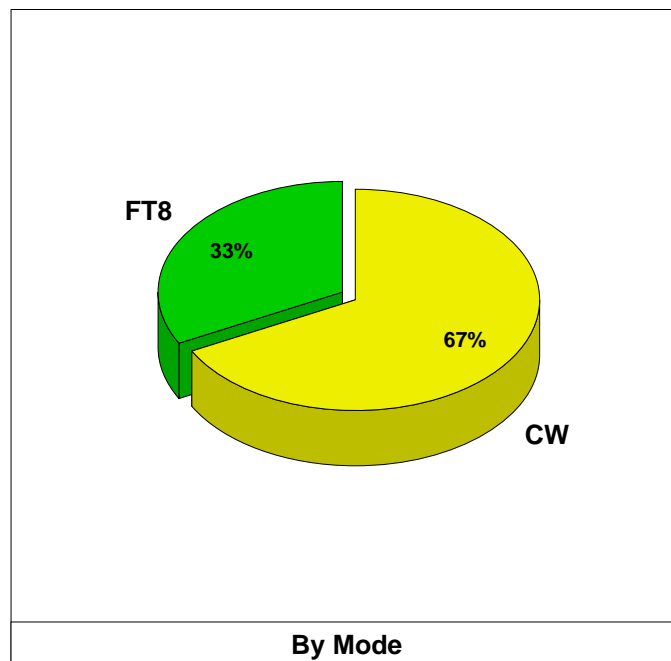
By Country

G3XZG		16	53	
G3ZNU		11	43	
M7SMI			80	
M0UBT			13	

Countries visited	-	35
Most visited Country	-	Kazakhstan - 6 times
Total Mileage	-	62,776
Total QSO's	-	49
Average miles per QSO	-	1,281
Total locators visited	-	45
Most visited locator	-	JN53, KN22, KO85, MO13, all 2 times

'Air Miles', this month at a glance

This month at a glance (accumulative)



No pretty display this month, far too crowded requiring a magnifying glass to see the results!

Algeria	1	Italy	8
Bulgaria	2	Kazakhstan	6
Canada	1	Kyrgyzstan	1
Czech Republic	3	Latvia	1
Denmark	1	Poland	2
England	1	Russia	2
Estonia	1	Serbia	1
Finland	1	Spain	4
France	2	Sweden	1
Germany	2	Switzerland	1
Greece	1	Ukraine	1
Hungary	3	United States	1

