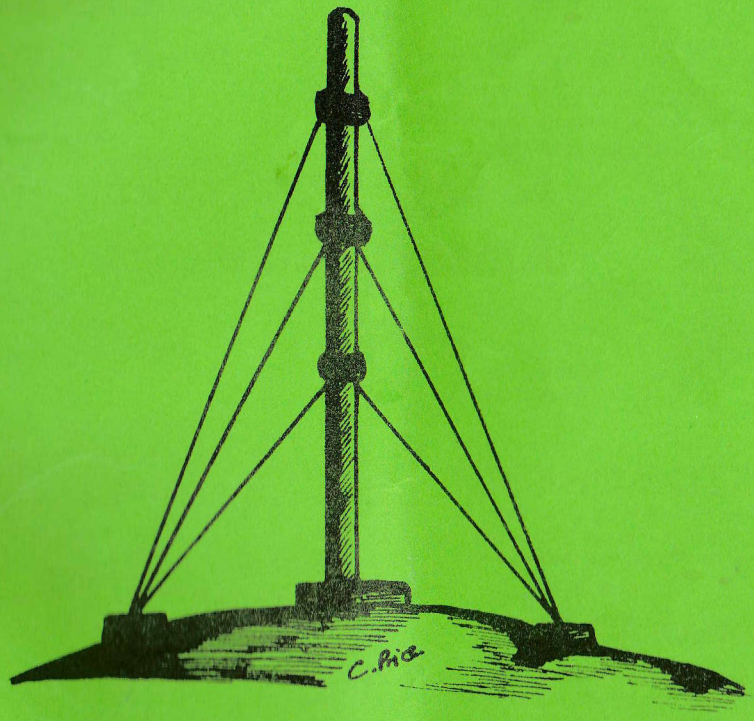
MENDIP REPEATER GROUP NEWSLETTER

NOVEMBER 1986



GB3WR GB3UB GB3VS GB3UT

MENDIP

REPEATER

GROUP

P.O. Box 73
RADSTOCK
BATH
AVON
BA3 3GP

Welcome to the November 1986 edition of the Mendip Repeater Group Newsletter. Another year is almost finished and it is time for the AGM where you can air your views and also elect the Committee you wish to serve you for the next year. Details of the AGM can be found in this newsletter. We hope to meet you there.

You should have received your membership card for the year ending 30th Sept 1987. This QSL type membership card seems to have been well received.

Please also keep sending in your articles, comments etc for the next issue. We are always looking for interesting items to fill these pages. Thanks to those that have taken the time and trouble to put pen to paper and send in their contributions.

Thanks, also, to everyone who has helped the Group, in any way, during this past year.

Steve Gardner G4PSP Secretary

PRESENT COMMITTEE

Chairman.....Ivan Rosevear G3GKC
Vice Chairman.....John Everingham G4TRN
Secretary.....Steve Gardner G4PSP
Tech. Manager.....Peter Harston G4JQP
Treasurer.....Linda Gardner
Computer Services...Malcolm Stanbridge G3RHU

Committee Members:

B.Stevens G8KKA
I.Parker G8XZD
I.Sparry G8IWV
P.Price G4SUH
C.Tabor G3UGR
W.Dix G4ZEU
A.Whatmore G4UVZ
E.Pearce G6GNG
S.Bateman G4ZBL

M E N D I P R E P E A T E R G R O U P

ANNUAL GENERAL MEETING

Thursday 27th Nov 1986

8:00pm

at

BLACK SWAN SUITE

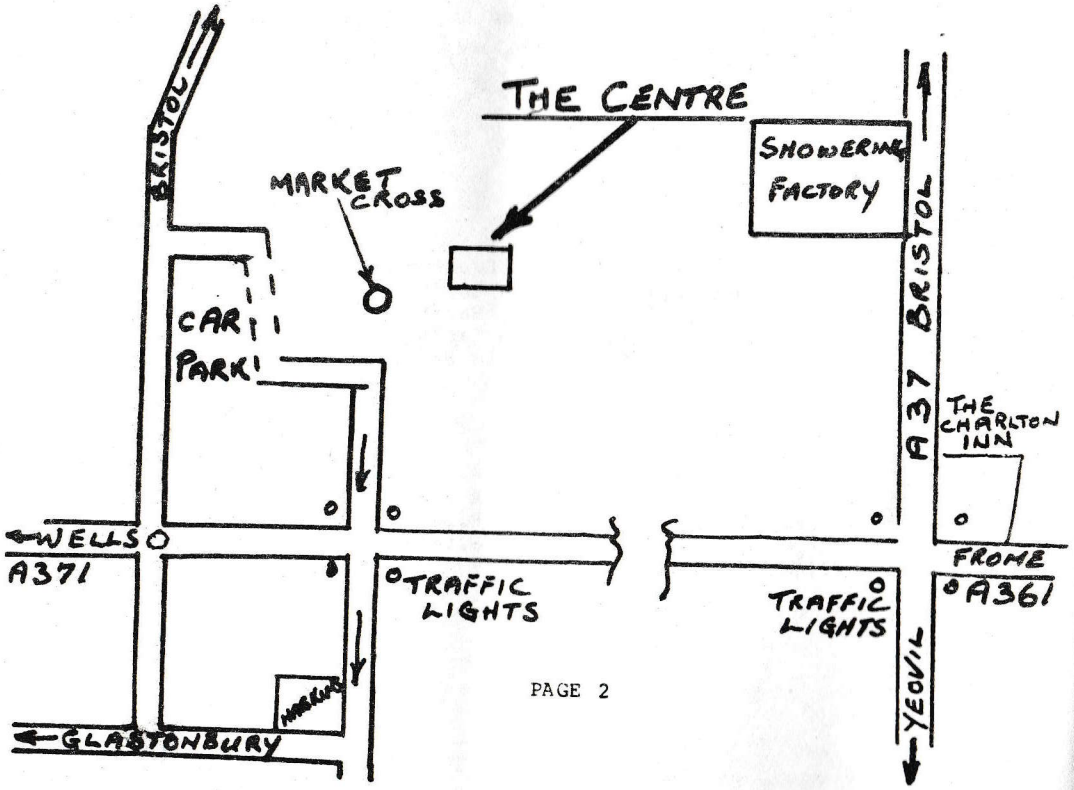
THE CENTRE

SHEPTON MALLET

The Committee for 1986/87 will be elected at the AGM.

A proposal form is included in this Newsletter. If you wish to stand for election or propose another member then please send the completed form to the Secretary, PO Box 73, Radstock, Bath, BA3 3GP to arrive by 22nd November 1986.
The Committee consists of Chairman, Vice Chairman, Secretary, Treasurer, Technical Manager, Computer Services, and eight ordinary committee members.

YOU choose the people to run the Group for you.



CHAIRMAN'S REPORT

As we approach the AGM, this past year as Chairman has gone very quickly, and not without its highlights.

Firstly the loss of GB3WR service due to arctic weather caused concern, not only to the committee but to many of the members who migrated to 70cms and GB3UB became more active.

Then the commissioning of GB3UT, at last our Amateur Television Repeater is up and running - but how active is it ?

It was very pleasant to meet so many of our members at Longleat and we were kept busy with Renewal subscriptions.

A very sad occurance was the death of Charlie G8IUF, and as many of you know, a wreath was sent to the funeral from all members of the MRG. It is a sad thought to realise that Charlie's cheerful voice will no longer be heard on 'WR'.

Despite the increase in hire charge, the Committee have decided to hold the AGM again in the Black Swan Suite at the Shepton Mallet Centre. See u there!

I must thank not only each and every one of the committee for their help during the year, but also a number of other members who either willingly or were cajoaled into assistance.

73

Ivan G3GKC

Chairman

TECHNICAL MANAGER'S REPORT

It is sometimes difficult to know where to start when writing a report such as this. After all, the aerials haven't dropped off, the feeder hasn't been struck by lightning, the cavities haven't fallen off the wall, and the equipment hasn't failed to proceed. And yet the work goes on. The main task of a Technical Manager, indeed any manager, is to assemble a team of experts, of willing workers who can come up with the goods when required. Of course our workers, the unseen and unsung heroes of the Mendip Repeater Group graft away on your behalf to little or no applause. They receive no payment for the time spent developing, assembling, repairing, renewing, modifying.....and yet they carry on for the love of the job and the satisfaction they receive.

So why, you may ask yourselves, am I wittering on about these gallant souls? Well, it is because all, despite the time and effort they put in, pay their subscription to the Group; as, of course, you do. If you didn't you would not get a copy of this newsletter . But many don't. Most just can't be bothered. Others, and these include some daily users, are just too tight-fisted to appreciate the effort put in on their behalf by the technical team and your excellent committee. There is no technical reason not to pay. If they just cough up a little under 4 pence per week they become one of the Group instead of one of the freeloaders.

Sermon over, GB3WR is alive and kicking on a well known Somerset hill. GB3UB likewise gives no cause for concern.
GB3UT continues in its phase 1 guise. A description of the equipment appears elsewhere in this issue. Meanwhile plans are afoot to proceed with phase 2 of the project, replacing the high level vestigial sideband transmitter with one generating VSB at low level and mixing rather than multiplying up. Higher output power and a higher gain antenna should give some 6 to 9 dB improvement on transmit, whilst the incorporation of a Mutek low noise pre-amp and the extra aerial gain should improve the receiver. Watch this space for further news of development.

GB3VS is still heavily underused but occasionally bursts into life. The proposed move to a better site near Taunton appears more imminent and site inspections are going ahead. The audio problem which gives some compression of through audio will disappear during the move. If everything goes according to plan, the changeover will be effected in one day.

Peter Harston G4JQP

Technical Manager

GB3UT

The Mendip Repeater Group's first Amateur television Repeater, GB3UT went permanently on the air at five minutes past noon on Sunday 15th June 1986.

The system is regarded as a somewhat spartan first step, but meets the Group's basic technical and licencing specifications.

The repeater is sited at about 210 metres ASL using the same location as the Group's 70cms Repeater GB3UB. Both repeaters are installed in a lift house on the roof of one of the University's two tallest buildings.

Channel	RMT-1 (Input 1276.5 MHz Output 1311.5 MHz)
Modulation	Input AM 1276.5 MHz Output AM 1311.5 MHz (Initially high level filtered vestigial sideband, full carrier)
Initial Power	Approx 5 watts ERP
Antenna	Single antenna working. Main: Horizontally polarised, omnidirectional, 20 element phased co-linear array, nominally 10dB(D) gain. Standby: Horizontally polarised, omnidirectional, 8 element phased co-linear array, nominally 6dB(D) gain.
Modes	Beacon: Standard grey scale pattern generator with a superimposed white 'GB3UT' callsign at the lower left hand side of the frame. Repeater: Standard video 'view thru' with full 6MHz bandwidth.
Access	A 3 second 15,625 Hz AM modulation component on the input of the repeater causes the output modulator to accept whatever modulation is present and retransmit it

System configuration

The main antenna (20 element horizontally polarised stack) is enclosed in a smart white GRP weatherproof sleeve, a gift of committee member Bill G4ZEU. The mounting is a stout and sturdy welded mild steel, cold galvanised cylindrical hollow plug, with a 1.75" dia U bolt mast clamping stem hand made by John G4OTJ, our Group's versatile microprocessor boffin.

Elements are brazed brass 1/8"" rod and 1/4" square section with soft soldered connections to the brass, silver, and copper fittings.

On installation a fault with the main unit necessitated it to be replaced by the 'standby antenna' - an earlier 8 element prototype of some 6dB(d) gain and used successfully for site tests in the Summer of 1985.

Both antenna designs are entirely original to this project.

Diplexer
The stripline hybrid combiner was scaled down from a circuit in the (excellent German) 'UHF Compendium' and assembled and boxed up by Pete, G4JQP, working very well first time without tweaking. (Insertion loss < 4dB)

The RX and TX filters were skilfully hand crafted by Bill, G4ZEU, from copper stock with dimensions supplied by Pete, G4JQP, from data and calculations originating from an old RSGB Radcom article on the subject.

With an insertion loss of < 6dB, yet each with over 50dB of rejection, these stable well made components form a fundamental ingredient of our successful operation in such a challenging system environment. i.e. Full duplex, AM Video, Single aerial working, with RX uV sensitivity.

Receiver
The receiver section uses a 'pre-production prototype ' CQ-(TV)-Centre converter for its excellent dynamic range, reasonable low noise sensitivity and freedom from spurious responses in this exacting, single antenna, full duplex application. (While a Mutek bipolar 23 cms front end gave a marginally useful 5dB improvement simplex, its incorporation under single antenna repeater operating conditions resulted in over 20dB de-sensing of the otherwise clean receiver).

The receiver I.F. with its matching 3" monochrome monitor are part of an old Akai portable VTR unit loaned by the author.

A slight system IMP problem has been encountered with the use of a 35MHz 2nd I.F. when the 'repeater shift frequency' is also 35MHz. An improved receiver will take this into account.

Video Generator and switch
The video grey scale generator with callsign overlay and 15,625 Hz switch were constructed from existing designs in a used 1U x 19" rack mounting case, by Ian, G8XZD, the group's video manager.

Some problems have arisen with the 15,625 Hz detector picking up extraneous signals (leakage through base-band video switch, leads, demodulated video carrier, 15,625 Hz line output scanning flux, EHT generator field and/or PSU ripple!).

An improved detector would be fully screened, enclosed and have fully

filtered feed-through connections.

Transmitter
The AM Modulator/PA/Tripler assembly is a converter sized 'red box' unit designed and built in early 1984 as part of product development for the CQ Centre. It uses a medium power, high efficiency active tripler with f3 and f2 tuned idling stubs and stripline output filtering. This feeds a straight stripline 23cms P.A. with asimple BD132/BC109 series video AM modulator circuit. Line up is BLV93-BLV92, 400mW at 70cms input for 5 watts out at 23cms.

The 300mW exciter was an experimental miniature 70cms NBFM phone TX. The RF and multiplier circuits being 'very similar' to the G3YQC 70cms TX of CQ-122 and 'TV for AMATEURS'. It is based on a 109MHz crystal oscillator.

Enclosure
The whole Repeater has been put into a 19" x 12" x 20" steel case with removable front and rear panels and chassis sub-units.
A small 3 amp "CB type" 13.6 volt Power Supply bought at short notice works rather hard keeping all the modules supplied with nominal 12 volt supply.

Other work
After site tests, interference to the Group's Bath 70 cms FM phone Repeater GB3UB which is co-sited with GB3UT (on the same shelf) caused the exciter to be retuned to 327.875 MHz. The power multiplier was re-aligned to work as a x4 multiplier, the loss of efficiency being somewhat compensated for by the increased stage gains at the lower frequencies.

Members of the Mendip Repeater Group will be indebted to the overall co-ordination provided by its Technical Manager, Peter Harston G4JQP, and progress chasing initiative undertaken by Ian Parker, G8XZD.

John, G4OTJ who will be responsible for creating the future logic and "Teletext" facilities planned next, made several useful contributions to the initial installation such as the mild steel antenna base, mast fixings, cable runs and Dexion shelf supports - not least the actual transport and installation of the completed system itself.

Reception Reports

At the time of writing the Repeater has been running for nearly two months transmitting something continuously.

By the time this article appears, GB3UT may be delivering its full 25 watts ERP due to increasing its aerial efficiency and power output (6-7dB).

The very uneven terrain around Bath and the Mendip Hills area generally means that the service area is inevitably patchy with screened areas of North Bristol and even a mile or so from the repeater quite inaccessable.

Using simple hand held antennas of 6-10dB(d) gain, G4JQP, G4OTJ, G8OTA and G8XZD have received good signals with "CQ-(TV)-Centre" converters over various optical paths, signals rapidly dropping off due to obstructions.Best so far has been a P4 at 22Km.

Using 15dB or more antenna gain, with a simple converter and a good line of sight path, GB3UT should be receivable P1-P2 at 50Km.

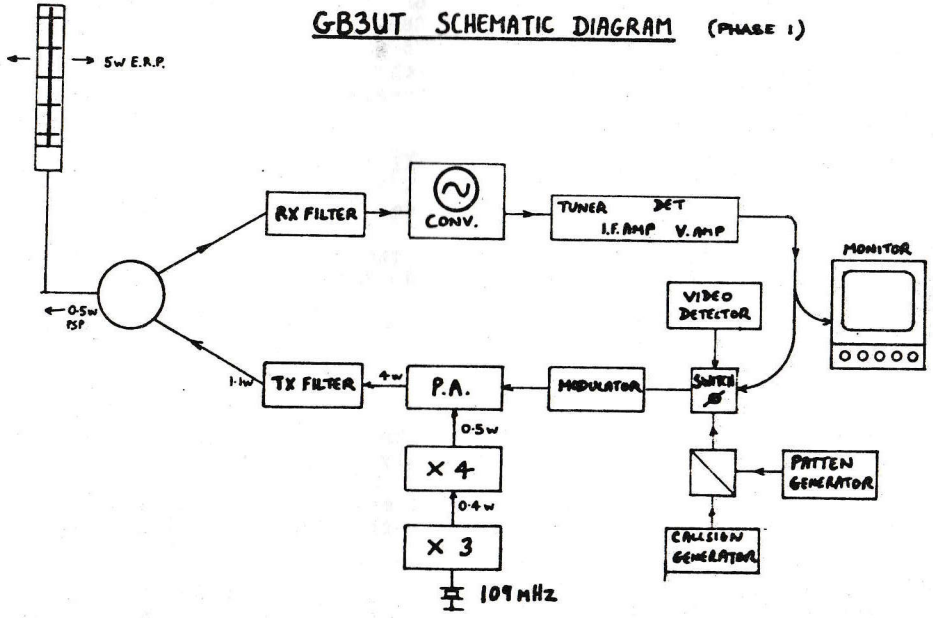
Working the repeater
The receiver sensitivity is entirely reciprocal when similar receiving converters are used at the repeater as out in the field. 5 watts PSP AM will get in anywhere the repeater is itself receivable with such equipment.

The complete receiver installation has been bench tested giving excellent results with slope detection of optimised 23cm FM input signals (a slight frequency offset and deviation control being necessary).

A later receiver will have a "proper" FM receiving capability.

All reports of a positive or negative result are gratefully received.

GB3UT SCHEMATIC DIAGRAM (PHASE 1)



N.D.P.L. 19/8/85

After many years absence from radio I came back during Sept.'85 with the purchase of a 290R. In fact I had been off the air for so long that I was not aware of 'B' licences and did not know that there were repeaters! (My licence obtained 1957)
Learning to use the repeaters occupied me for months and then as I worked in my own workshop, I listened to the mobiles and their 'slick' working and 'wit', and whilst it was hardly ham radio it was just part of the very big ocean of amateur radio where every aspect has its place and where, if everybody behaves kindly, it is all great fun.
Via listening I also discovered that there is a small group of stations who habitually use WR and thus I recognised their voices even if I missed their call sign...
Then came the weekend 19th-21st Sept and that incredible 'lift'. Now it must be understood that there are many stations who, because of their QTH, just cannot transmit in some directions via normal direct techniques...and this 'lift' gave those stations an excellent opportunity to receive signals from very far away and it was all fun....until one of the regular 'WR' users came on and his first attempt to use this lift came as he replied to a London station. When that station did not reply, our local lad said, on the air, "Like all Londoners, all mouth and no ears".
Here, I take the strongest possible objection to such a comment. Our WR local user then heard one of his local colleagues and they proceeded to explain to each other at grest length that repeaters were for mobile working and not for 'A licences chasing DX'. Then, for half an hour, the local lads blocked the repeater with aimless and inane gossip that merely served to make their journey pass quicker. This, whilst so many stations could have had a wonderful chance to work some incredible dx which included Belgium and France and Ireland!
...
Then it was Sunday afternoon and I was working 'P'.
I contacted another station. The repeater air at that time was quiet. Then a G3 station broke in to tell us sternly 'I can hear you both on simplex...why block the repeater?'
OK so we did QSY... but there was no justification whatsoever for that station breaking in with his rebuke.
another station then joined my QSO... and from the consequent discussion I gleaned that all is not well with the sympathies of many members of th WR Repeater Group. In fact, if a very small group of members do not stand back and realise what harm they are doing then I can see very many resignations from WR membership.
And once that resignation 'rot' starts you could be in trouble.
Ham radio is a very big ocean and there is room for everybody to have enormous fun and I would like to see it remain like that.
Needless to say, although I have all the callsigns of the 'naughty' stations involved, I do not propose to divulge these; thus it is a case of 'if the cap fits, you wear it'.

Sincerely

Syd Davis G3KVR

THE FOLLOWING ARE MEMBERS OF THE GROUP (3rd Nov 1986)

C30AKA	G0APK	G0AWX	G0AZQ	G0BQD	G0CAM	G0CCA	G0CFF	G0CFM
G0CNA	G0COM	G0CPG	G0CYD	G0DUU	G0EGC	G0ENF	G0FGF	G0FGN
G1AAH	G1ABT	G1AJC	G1ARZ	G1AVB	G1BKL	G1BVG	G1BYE	G1DBF
G1DCG	G1DCZ	G1DNG	G1FGK	G1HFJ	G1HFY	G1HSF	G1ICU	G1IHL
G1IHT	G1JAM	G1JKO	G1JMK	G1JOR	G1JPK	G1JRM	G1KEU	G1KFC
G1KTJ	G1KVD	G1LNU	G1LXA	G1LZN	G1MDC	G1MIV	G1MMS	G1MSI
G1NGQ	G1NMW	G1NTK	G1NUA	G1OKU	G1OOB	G1OOH	G1OPW	G1OTY
G1PJU	G1PLM	G1PNF	G1PVB	G1PWU	G1RSF	G1SGK	G1STL	G1TEU
G1UEL	G1UKB	G1ULZ	G1UQH	G1USW	G1VQG	G1VSZ	G1VWQ	G1VZO
G2BAR	G2BQY	G2BRR	G3AGT	G3BPM	G3CQE	G3DHH	G3EWF	G3GKA
G3GKC	G3IBK	G3IJU	G3JAR	G3JEP	G3LJD	G3LNW	G3MIZ	G3MVA
G3NET	G3NOF	G3NXU	G3OSH	G3PYF	G3RHU	G3SPU	G3SXY	G3TKF
G3TWO	G3UGR	G3UPV	G3UUR	G3VEH	G3VJJ	G3XBW	G3XGY	G3XWK
G3YBY	G3YHV	G3YNI	G3YPL	G3ZKI	G3ZUQ	G4ATP	G4AUN	G4AVJ
G4AYB	G4AYD	G4BYJ	G4CBS	G4CJZ	G4DGU	G4DIE	G4DKS	G4ETN
G4EVI	G4FSL	G4GBN	G4GBX	G4GTD	G4GVM	G4HHL	G4HWD	G4JQD
G4JQP	G4JSN	G4KJP	G4KNE	G4KPT	G4LAF	G4LAW	G4LJZ	G4LYG
G4LYP	G4MQX	G4MYR	G4NCJ	G4NFO	G4NUJ	G4NXG	G4OFH	G4OJA
G4OJH	G4OMG	G4OTJ	G4OWH	G4OXR	G4OXY	G4OYY	G4OZH	G4PDG
G4PLY	G4PSP	G4PYN	G4RIC	G4RLK	G4RRI	G4RSH	G4RZY	G4SCD
G4SFS	G4SJJ	G4SZB	G4SZS	G4TAH	G4TBO	G4TIA	G4TIX	G4TJB
G4TLL	G4TLP	G4TRN	G4TXW	G4UEO	G4UGO	G4UGT	G4UHN	G4UKF
G4ULV	G4USO	G4UVZ	G4VBO	G4VEH	G4VFM	G4VGV	G4VVS	G4WGE
G4WJY	G4WMV	G4WPY	G4WPZ	G4WRW	G4WUB	G4WXD	G4XKK	G4XLY
G4XWE	G4XWY	G4YIC	G4YOC	G4YQG	G4YTH	G4YTP	G4YZR	G4ZBL
G4ZBQ	G4ZDR	G4ZEU	G4ZNK	G4ZOG	G4ZQF	G5RQ	G6AEC	G6AFL
G6ANI	G6ASI	G6ASO	G6ASP	G6AWT	G6BDE	G6EDJ	G6EIY	G6EMB
G6ENM	G6FBR	G6GBH	G6GNG	G6GVH	G6GWF	G6HEC	G6HIQ	G6HKT
G6HMV	G6HN	G6HTZ	G6HYU	G6IAV	G6IUQ	G6IVU	G6IZE	G6JGR
G6JNB	G6JTT	G6KPD	G6KTW	G6LRQ	G6MRJ	G6MXL	G6OWL	G6PJT
G6PPU	G6PZ	G6RAZ	G6TAH	G6TAL	G6TKR	G6TWA	G6UAC	G6UTK
G6WIM	G6WLX	G6WTX	G6WZA	G6WZS	G6XFC	G6YCG	G6ZOD	G6ZPG
G8ARH	G8BIR	G8BMR	G8CPF	G8DBP	G8DKC	G8DRK	G8FAS	G8FKC
G8GFZ	G8HNM	G8HVY	G8IKR	G8IOJ	G8IWV	G8IZZ	G8KBQ	G8KKA
G8KNN	G8LGC	G8LRB	G8MYN	G8NMU	G8NNU	G8NQO	G8OEU	G8OQG
G8OTA	G8PVG	G8PVI	G8SUW	G8TIH	G8TOF	G8VDF	G8VGI	G8VOE
G8VPG	G8WLV	G8WRC	G8XYS	G8YML	G8YMM	G8YPV	G8YWQ	G8ZOE
G8ZSP	G8ZYD	GW1EPR	GW1LOR	GW1LQU	GW1LWC	GW1OPT	GW1RGO	GW1RSS
GW2FWD	GW3JUV	GW3LAD	GW3TSH	GW4HA	GW4KYM	GW4POA	GW4TUL	GW4WQC
GW4XKE	GW6ADM	GW6CUR	GW6JBP	GW6MBU	GW6MWN	GW6NQU	GW6ZHM	GW8DGM
GW8ERA								

MR R.WARE
MRS L.GARDNER

MR J.GOODWAY

G0CCB
G8FTV

A UNIVERSAL NICAD CHARGER

Visitors to Radio Rallies, this year, cannot fail to have noticed the abundance of Nicad batteries for sale at very reasonable prices. I haven't bought a dry battery for several years and have amassed quite a collection of nicads, which I use in torches, tranny radios, shaver etc, as well as the old hand-held there. Obviously, they have to be re-charged at intervals which can be a problem, using a commercial charger, if one has batteries of different capacity and voltage.

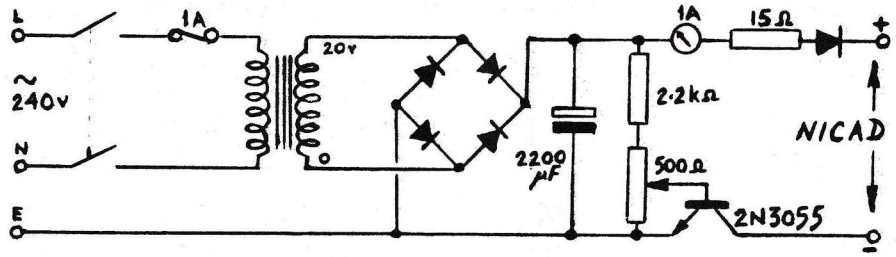
My answer was to build a 'universal' charger, able to provide the correct charging current for any of the types I possess, from single cells (1.2v) to 12v 'packs'. Also, it will deliver sufficient current to 'fast charge' batteries of up to 1 amp-hour capacity.

The circuit is shown below. It is a nominal 24v DC supply, connected to the battery via a constant current circuit formed by the 2N3055 transistor and associated resistor network. The component values are not very critical and were arrived at by experiment, using parts from my junk box. To use, connect the battery to be charged, switch on, and wind up the 'current set' pot until the required charging current is indicated on the 1 amp meter. Normally, this is 10% of the battery's amp-hour rating. In the case of an AA cell the charging rate should be 45-50 mA. Some nicad cells and packs are suitable for fast charging, so the current can be wound up to the setting recommended by the battery manufacturer.

However, BE WARNED, this simple charger has no automatic or timed cut out, so you must remember to switch off after the recommended charging period has elapsed. This is typically 3/4 to 1 hour.

If you forget, the battery could suffer catastrophic damage and might even explode. Much information about nicad batteries, their characteristics and charging methods, has been published in the amateur radio press during the last year or two, and is well worth reading if you want to get long life out of your nicads.

Clem Tabor G3UGR



GLOSSARY OF "AM" RADIO TERMS & EXPRESSIONS, updated by G4OXY from the original list in BARTG Newsletter Dec 1979

AMMES - Fearsome inhabitants of Ammeland.

KLARSAYS - Dominant body of advanced beings, considered intellectually superior to Klarsbees.

KLARSBEES - Mysterious primitive tribe from the dark zone, serfs of the Klarsays.

JEETUS and JEETHRIS - Elders of the tribe of Klarsays.

JEEFAWS - Full blooded warriors of the Klarsays tribe.

JEEZEROS - Newly blooded and freshly inaugarated troops of the Klarsay tribe.

JAITS - Elders of the tribe of Klarsbees, now few in number, most are now very set in their primitive ways and are jealous and sometimes hostile towards the Klarsays.

JEESICKSES AND JEEWONS - These form the majority of the Klarsbee tribe and hold the Klarsays in awe and high esteem.

MAWSE - Supreme God of the Klarsays, who are the only ones who can speak or understand his high level language which is despised by the Jaits who have failed for many seasons to comprehend it.

FONE - General language spoken by all Ammes.

RIPITA - God to all Klarsbees. Monuments to the God Ripita are erected on points throughout Ammeland.

LORGIC - The all seeing mind of Ripita.

KUSOS - Conversations, futile and unintelligible to the Aliens, between individual Ammes. Klarsbees speak in Phoney, Klarsays either in phoney or in the sophisticated tongue of their God Mawse. Kusos consist largely of technicalities interspersed with such phrases as 'Yewtherejim',' Seeyerfurtherdownlog', 'aitcheye', and 'Krystitsblownup'.

JUSCHECAMNOTDUBLIN - An expression often heard uttered by Ammes of a nervous disposition who have a great fear of the God Ripita and don't wish to offend him by speaking at the same time as someone else. Some exceptionally fearful Ammes utter this expression every time they start speaking.

EFFEM, AYEM, & ESESBEE - Amme dialect of the language phoney.

PIP - Erotic slavegirl of Ripita, often violated by Jammas.

DEETEEI - Patron Saint of all Ammes who send him money every year as a token of their esteem.

AREYEES - Disciples of the Saint Deeteei, much hated and feared by the Jammas.

JAMMAS - An alien group of single celled creatures intent on bringing about the downfall of Ripita. Largely ignored by the Areyees but hunted down by Klarsbees and Klarsays alike.

ARMONIKS - Base born issue of Ammes, hunted down by the Areyees and despised by Nayberz.

NAYBERZ - Hostile people dwelling adjacent to Ammes . They pray nightly to their one-eyed 'gogulbox'.

EYEWONS - Latin tribe of Ammes. Their language is splatta and Ohla Ohla, dialects of phoney.

SEEK YOU - Mating call of Ammes. Uttered in dreary monotone and often repeated for up to five minutes non stop.

KUARZED - Reply to mating call, if not fallen asleep.

ENEFDEE - Midsummer festival of the God Mawse, celebrated by Ammes in a 24 hour open air orgy of meaningless kusos. Number swapping is also believed to take place.

SHAX - Simple dwelling places of Ammes. Often decorated with colourful queue esselles.

QUEUE ESSELLES - Hunting trophies much prized by Ammes. At one time distributed by the wise elder Geetuemeye and often bartered in exchange for eyearsees.

DOG XRAY - This, not to be confused with pictures of the internals of canines, is part of the Ammes mating call when aspiring to penetrate further.

BITTERVERLIFTON - Natural phenomenon causing temporary insanity amongst the younger klarsbees, who remain in their shax waiting for the dog xray to appear through Ripita.

DUBULAR - Monument to the all seeing God Ripita in the South West of Ammeland and idolised by all for its great prowess.

SIMPLECKS - A term, almost unheard of by Jeewons, which offends the God Ripita and induces in him long period of silence.

BRAKE - An unwelcome and superfluous term sometimes used on Dubular which shows a singular lack of respect to Pip and makes her feel that her life is meaningless and also upsets the God Ripita.

The Shack
Charred Park
Norsomer Midton

Dear Sir,

I feel I must write to express my gratitude to all those kind people who wrote to me following my wife's letter in the June 86 issue of the Newsletter. I am now feeling much better, and have made a complete recovery. Amanda and I took a short holiday in North Wales, which almost caused a relapse, but all is OK now.

One day, whilst on a day trip to Snowdon, I noticed several chaps humping various poles and several pieces of radio equipment.

I left Amanda following the rest of the tourists while I went to see what these men were doing. It turned out that they were Radio Amateurs from a Midlands Contest Club, who were preparing for a VHF portable contest. I introduced myself, and when they realised I had a fairly old callsign, they asked if I was any good at CW.

Well, I had to admit, I do enjoy dabbling with the key. I wish now that I had kept my big mouth shut. I was immediately invited to help with the operating. "We're no good at Morse." they said. By this time they were ready to start operating. They gave me a few cans of beer, pushed a morse key in front of me, and I started.

The contacts flowed at a pretty fair rate and the empty beer cans were replaced by full ones. I was completely engrossed in the contest and didn't notice the passing of time, until I realised it was getting dark outside.

Then I remembered Amanda! I hastily said farewell to the others, and staggered back to where I had left her. She was fuming! I will draw a veil over the following moments! (I must find out the meaning of some of the words she used.)

There was now no transport back down to the hotel. However I managed to persuade one of my new mates to drive us back in his Land Rover. It was an extremely rough ride but at least it was better than spending the night at the top of a mountain.

For the rest of our stay I was not allowed to wander out of Amanda's sight.She insisted on searching all the local shops for a new dress and I was forced to escort her.

Anyway, all is well now. I am hoping that the weather this winter will not bring a repeat of the events of last year.

Many thanks, once again. Willie Werkit G2SFA

MICROPHONE GAIN, DEVIATION AND ALL THAT.

These notes are intended to help those who receive poor audio reports on FM and get conflicting and confusing advice on how to improve matters.

Speech is a complex audio signal, but for communications purposes it does not need to be reproduced exactly. It is , in fact, more readable if it is deliberately modified, or processed, so that its dynamic range (loudness) is restricted. The transmit audio stages of an FM rig have much in common with the speech processors often used with SSB transmitters.

The most significant circuit element is the LIMITER. This prevents the through audio signal from exceeding a preset level.

Before the microphone audio reaches the limiter it is amplified and filtered, and the output of the limiter is filtered before being applied to the modulating device.

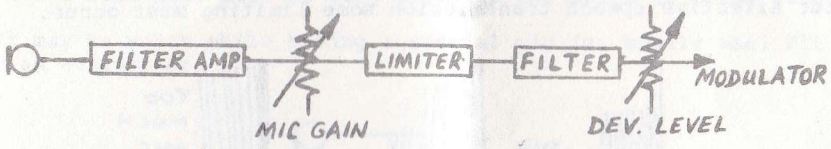


Fig 1
Note the position of the level controls.

The most common problem is that of level. The speech as received by other stations, direct or via a repeater, is too quiet to be heard well, or too loud, in that it produces 'over deviation' reports. It is possible to be too quiet and at the same time get over deviation reports from a repeater. (with MRG repeaters, over deviating audio is replaced by a high pitched 'bleep')

This is how and why it happens. Take the word 'FORE' - this is the most troublesome speech sound. On an oscilloscope it looks like this.

Fig 2

Notice that the waveform has very high peaks, of very short duration, and that the greater part is very much lower in level. The peaks are not important to the clarity of the speech and may be removed by a limiter.

Fig 3
This is a much smaller signal.

To the ear both are the same loudness, but radio circuits recognise the peaks of fig 2. In simple terms, if audio like fig 2 is transmitted, its deviation, as monitored by a repeater, will be judged by the peaks which are high, but it will sound quiet.
In most rigs the limiter level is not adjustable and the block diagram is as fig 1. By altering the level of the microphone signal into the limiter it is possible to cut off the high level parts of the speech signal. If this is done to excess the results are not at all pleasant, but for effective speech transmission some limiting must occur.

Fig 4.

If you have a 'scope and dev. meter, setting up to get the best results is easy, but note the following dev values 5kHz on VHF, 10kHz on 10m, and 2.5kHz on CB.

If not proceed like this:-
a) Enlist the help of a sensible, local friend who has read this article.

b) Contact him simplex and adjust your mic gain until he complains of fuzzy, distorted audio from you, and then reduce it a bit. If at any time he complains of extreme loudness, and of crackle on the speech, reduce the deviation.

c) Having decided on an acceptable high level of mic gain, have your friend call you through WR or another repeater with a high deviation report. Adjust your dev. control until he tells you that you are getting high dev. reports. Use the word fore to test this. When you do get the report, reduce the dev. until it stops, and then reduce it a bit more.

Another problem area is operating from noisy environments, notably commercial vehicles at around the speed limit.
If there is any tendency to produce over dev. reports due to low mic gain and high dev. setting, then a noisy environment will exaggerate it.
There is a natural tendency to talk loudly in a noisy environment, (and the other way round), and this can be helpful as it enables one to use a lower mic gain setting and so reduce the pick up of background noise. Use optimum mic technique, i.e. hold the mic close to the mouth, and speak across it, not into it.

If this fails try these tricks :-

a) Use a noise cancelling mic, and follow the instructions above. (the Realistic from Tandy is good but not cheap.)

b) Reduce low frequency pick up by fitting a small capacitor in series with the mic. Try 0.1 uF and experiment to find the smallest value your voice and rig will stand.

c) Mobile boom mics must be very close to the mouth to sound good.

d) It may be worth while having a special mic for mobile use. Fit this with an attenuator.

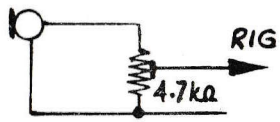


Fig 5.

This last approach is very good for the FT290 as they have no FM mic gain control. (There is a good mod for this - see PW.)

To gain access to a repeater, from cold, you must transmit a valid 1750 Hz tone, i.e. right frequency and not over dev. A low dev tone is not usually a problem, nor is the length.
To latch an MRG Repeater you must follow the tone, without break of carrier, with about 5 seconds of good, loud audio. If you are too short or too quiet, or both, you will be heard, but the repeater will drop with you.

John G4TRN

ACCOUNTS FOR THE YEAR ENDING 30th September 1986

These will be presented at the AGM.

MENDIP REPEATER GROUP
YEARLY ACCOUNT PERIOD 1985/86

BANK ACCOUNT

Receipts		Payments	
Cash in Bank 30.9.85	364.28	Transfer to Petty Cash	100.00
Subscriptions	821.00	Stationary & Books	27.24
Sweatshirts	102.95	Electricity (B.B.C.)	26.38
Advertising	87.00	Gifts	15.98
Transfer from Deposit Acc.	400.00	Newsletter	259.30
		Expenses	55.97
		Affiliation Fee R.S.G.B.	9.90
		Sedgemoor D.C. Rent	110.00
		Sweatshirts	98.90
		P.O. Box	34.00
		Components U.T.	285.17
		Car Stickers	75.00
		A.G.M. Hall	25.00
		Standby Base Station U.B.	115.00
		Display Boards	94.70
		Membership Cards	55.00
		Membership Returned	3.00
		Bank Charges	.41
		Balance in Bank 30.9.86	384.28
	£1775.23		£1775.23

PETTY CASH ACCOUNT

In Hand 30.9.85	43.75	Travelling	31.00
Transfer from Bank	100.00	Stationary	9.12
		Equipment U.T.	44.05
		Misc.	5.00
		Postage	47.08
		Balance in Hand 30.9.86	7.50
	£143.75		£143.75

DEPOSIT ACCOUNT

Balance as at 30.9.85	£1059.22	Transferred to Current Acc.	£400.00
Interest to date	£52.00	Balance as at 30.9.86	£711.22

This is a true record of the Mendip Repeater Group's Account for the year 1986

...A.M. Gordon...... Treasurer ...S. Mather G3SKA... Hon. Audit Accountant

MEMBERS ADS

These adverts are free - let's have more for the next issue.

FOR SALE

HEATHKIT RA1 rx. 160-10m. Xtal calibrator. £40 ono.

SHARP MZ80K Computer, 48K ram, MZ80-P3 PRINTER, MZ80-IO EXPANSION BOX, fitted with printer driver & serial I/O boards. Lots of books & software on tape.
BARGAIN at £80 THE LOT.

Clem Tabor, G3UGR QTHR Tel 0935 850463

----------DETACH HERE--

NOMINATION FORM for ELECTION OF THE COMMITTEE

To be returned to the Secretary by 22nd November 1986

I, (Name)..................................(Callsign)............

do propose (Name)..........................(Callsign)............

to the position of...

Signed...........................

I (Name)...................................(Callsign)............
wish to second the proposal.

Signed...........................

I (Name)...................................(Callsign)............
am willing to stand for election to the above post and am able to accept the post if so elected.

Signed...........................