

NEWSLETTER NUMBER 7

September 1977.

PREAMBLE:

Yes, it really is an E.R.G. newsletter; sufficient news has now accumulated to make one worthwhile. This one contains news of progress, membership and meetings, please take special note of the September 21st meeting and come along.

REPEATER SITE NEWS:

The repeater has continued to operate very reliably and the first year of operation will be complete on September 5th. A few minor problems have occurred largely concerning the single antenna operation. The duplexer was completed by Dick, G3VHR after considerable effort and made a very large difference to the performance of the repeater. G83ER was soon famous for its large signal and very sensitive receiver. Many experiments with preamplifiers were carried out and the device owned by Jeremy, G8ACN gave almost troublefree service. Several members of the group tried to build preamplifiers that would better the 'ACN' box but little success was achieved. Eventually Bill, G8DJE managed to find the right combination of gain, noise figure and stability and Jeremy's preamp was returned to him.

Unfortunately the excellent performance of the preamplifiers meant that the performance margin of the duplexer was considerably reduced since the wideband noise from the transmitter now required more attenuation to avoid degradation of the receiver noise figure. This was achieved by very careful adjustment and a crude temperature control system and this arrangement performed very successfully during the good band conditions in the early Summer. Many people will remember the very consistent signals from Mar, PE0MAR.

Experience using the repeater showed that the prediction of coverage submitted to the Home Office in the early days was very accurate but the repeater was not reciprocal with mobiles near the fringe of the area because the repeater receiver was so much better than that of the average mobile. The transmit legs of the duplexer had about 3dB loss and together with the feeder loss, only about 1 watt was reaching the antenna. It was decided to increase the E.R.P. to the maximum permitted by the licence in an attempt to achieve reciprocity. At about this time John, G3VUO presented the group with a 10 watt power module and a new p.a. unit was rapidly constructed by John, G3WCO. The unit has a built in V.S.W.R. meter and adjustable output power. The performance seemed to be better than that of the original and the increased power caused no difficulties on the receiver.

After some time operating in this configuration clicking noises were audible on the repeater output and the V.S.W.R. meter gave simultaneous jumps. After much headscratching the fault was traced to one of the transmit cavities where arcing was occurring between the central digit and the tuning capacitor. Several people (including me) were disbelieving but a few calculations about Q factors and voltage peaks together with the marks on the digit soon convinced them. One of the spare cavities was modified by Dick to increase the gap and the opportunity was taken to provide a fine tuning adjustment.

The modified duplexer was re-assembled and the new performance was even better than the old. The unit was tested on site on August 5th and left there over that week-end when it provided valuable service to the organisers of the Chelmsford D.F. qualifying round. Unfortunately, the performance was not good enough without the thermal control circuitry and some degradation occurred after the cold night. The temperature controller is under development and the new, improved duplexer will soon be on site. Many thanks go to Alan, G8JCA and Dick, G3VHR who have spent many hours in building cavities and making the whole thing work.

An interesting fault occurred recently on the new P.A. unit where a poor contact in the fuseholder caused overheating of the fuse which eventually failed. Dick was soon on site and connected the driver stage to the antenna whilst the P.A. fault was located. The 100 mW power level gave a good signal over a surprisingly wide area.

#### 1296 MHz PROJECT:

The idea of another output from GB3ER but on 1296 MHz was raised at the AGM. This fired the enthusiasm of several members of the Group and investigations were begun to discover what was a reasonable specification. Bill, G8DJE did some breadboard construction and produced one watt at 23cm using an advanced phaselock system. It is hoped that 10 watts can be obtained but some work has to be done in this area. Discussion is going on about an antenna design but no conclusions have yet been reached; any ideas on this topic will be most welcome. The proposal for submission to the R.S.G.B. and Home Office is under preparation and will shortly be sent off.

A 1296 MHz transmitter at Danbury would permit real advances in techniques to be made by local amateurs. This region of frequency is not used for commercial mobile operation anywhere in the world and important 70cm / 23cm comparative measurements could easily be made under true mobile conditions. A useful device for these experiments would be a converter design with 23cm input and 70cm output, easy comparisons could be made by flicking from one band to the other. Anyone, who can dream up a simple design with reasonable performance will be thought highly of.

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#### MEETINGS:

Members of the group will be travelling down to Canterbury on September 6th to talk to the Kent Repeater Group about GB3ER. Dick's film will be shown and it is hoped that ideas and experiences can be exchanged. The meeting will be held in the electronics building at the University of Kent, commencing at 8 p.m. Anyone who wishes to travel down is very welcome but is advised to contact Bill, G4CUE before going so that transport arrangements can be optimised.

A return visit by the Kent Repeater Group will take place on September 21st at Good Easter Village Hall at 8 p.m. Please try to come along so that we can put up a good attendance. The meeting will probably develop into a discussion after Mike, G3XDV and Co., have spoken about GB3ER GB3EK and GB3CK.

Please try to publicise these two meetings so that information about repeaters can be more widely spread. Non-members are welcome to both functions, perhaps some can be persuaded to join.

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#### MEMBERSHIP:

The list now contains 34 members listed below. Perhaps regular users of GB3ER not appearing on the list can be gently nudged. Tell them to send £1 to Ian, G8IVC, QTHR or Bill, G4CUE.

### MEMBERS LIST:

Southend ARS  
Vange ARS  
G3STJ  
G3AJS  
G3VHR  
G3KFI  
G4ELM  
G3VWJ  
G3VUC  
G8A/E  
G3WCO  
G8JLC  
G4CUT  
G3WTF  
G8LUP  
G8DHV  
G3FHG

G8BGT  
G8CVI  
G3TRH  
G3KEZ  
G8IVC  
G8MJJ  
G8K/E  
G4FCX  
G3ZWN  
G8ACN  
G3MIT  
G4CUE  
G8DET  
G4ECI  
G3PED  
G3FKJ  
G8FXB

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### COMMITTEE MEMBERS:

Chairman:	John Rollason	G3WCO
Treasurer:	Ian Hart	G8IVC
Secretary:	Bill Pechey	G4CUE
	Dick Brocks	G3VHR
	Jeremy Royle	G8ACN
	Dave Elwell	G8CVI
	Ted Jewell	G4ELM

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### PHASE II REPEATERS:

Members attention is drawn to the letter on page 594 of the August Rad. Comm. It is considered that this does not represent a final work and that licences will eventually be issued but no-one is prepared to guess the date.

It is worth noting that Repeater Working Group Meetings are open and any member finding himself near Doughty Street on the relevant Saturday could spend an interesting day observing. The dates may be obtained from RSGB HQ or from Chris, G8HVV who is the Hon. Sec. of the R.W.G. If you do go please communicate your observations to any committee member since it is very difficult to find the time to send a committee representative to many of the meetings.

### FUTURE PLANS:

Following the 1296 MHz project there is a shortage of ideas and any thoughts will be welcome. It is planned however, to rebuild the control circuitry such, that more flexibility can be included. If there is some special facility or improvement to operation that you think could be included please make your case to Ian, G8IVC, the control system designer.

It is proposed to rebuild the demodulator to improve its performance and take advantage of modern techniques. A more stable demodulator will permit the frequency measuring system to be reactivated.

73 - See you on September 6th and September 21st.

*RK.*

Hon. Secretary:

W.L. Peckey.      G4CUE  
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CMI 4RS.

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Evening:      Good Easter      612

Members Ads:-

Wanted silence cover & base (Good Condition) for Creed model 7 ERP Teleprinter.

G8CVI - Southend 232215