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Diplexers
Both diplexers have been checked and in the case of GB3ER, realigned and additional cavities built to provide a better transmit noise margin on GB3ER.

Power Supply
This has been rebuilt and fitted with new regulation circuitry. The output is now 20 Amps, in addition a sense output has been provided for mains failure indication to logic. (This now gives a lower tone 'K' not a 'B').

Equipment Cabinet
Extensive mechanical design, construction and refurbished has been carried out by G4ZPE (the master of metal bending). A single six foot high unit now accommodates all of the VHF/UHF radio equipment. This contains a full 12V distribution system with diode feeds for each radio. Two 12V batteries are now included to provide backup against mains failure. The new cabinet has been built with maintenance in mind, for example there are now pull out drawers containing VHF cavities and a separate 12V feed system provided for 'out of rack ' work on equipment.

GB3DA/GB3ER System
Full durability tests have been completed and all problems resolved (we hope). The final stage of the site installation should be completed 31st May 1997. The aerial for GB3DA is now sited to screen off interference to the GB3SN service area.

Licences

GB3CMS:	NOV received, expect to be on air late June 1997.
GB3DA/GB3ER:	At final stage of approval (with NFAP - National Frequency Allocation Panel).

give me 5

Channel 5 without the Fuzz!

So you've tried Channel 5 from the London transmitter and it's not good... But why?

Many viewers have had their TV aerial for quite some time and this is where the problem lies. Older Group A aerials were designed to cover UHF TV Channels 21 to 34 with a sharp cut-off at UHF Channel 34. In fact on UHF Channel 37 (used by C5), your aerial is probably 12dB down compared to the signal from say, ITV on UHF Channel 23. It gets worse! The EBU have allowed C5 to radiate at only 250KW, which is 6dB lower than the power of ITV and BBC from the London Transmitter. With your old antenna coupled with the reduced power of C5 transmitter, what you receive is going to be some 18dB lower compared to the signal from any of the other London TV transmitters!

The answer of course is a "new" Group A aerial, these have been redesigned to cover UHF Channels 21 to 37. This will take care of 12dB of potential losses, but as the transmitted signal is still 6dB lower than the others, you may still find that snow is a problem. In this case use a Group A amplifier (do not use wide band if you expect transmit on amateur bands from home) will rid you of this.

If you have a Astra 1D compatible satellite receiver and the above seems like to much effort, then simply tune your satellite receiver to Astra transponder 63 which can be found on 10.921GHz with Horizontal polerisation, where you'll receive Channel 5 in stereo and without the fuzz!

Essex Repeater Group Newsletter - Spring Edition

Engineering Update

We are often asked what has been going on for the last 8 months, well in brief here goes:

Site
The agreement for the Danbury Ridge site (now with Essex Group Telecomms) has been signed. Both GB3DA & GB3ER aerials and feeders have been installed. Equipment siting and power arrangements have been agreed and established within the equipment cabin.

Radios (Main)
The transmit and receive boards have been reworked (i.e. solder joints). They have had their tuned circuitry Realigned. All radio equipment has been rewired into robust 19 inch rack mount cases.

Radios (Spare)
The spare transmit and receive boards have been repaired and modified for duplex operation and for interfacing to the logic unit. These units have again been assembled into 19 inch rack mount cases and have of course been thoroughly checked out and aligned.

Logic
The firmware has been upgraded and a "Watchdog" system has been introduced to overcome previous lockout problems. The logic has been fully tested with both main and spare radio units. Again 19 inch rack mounting has been used.

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The rebuilt GB3DA & GB3ER are now ready to go on air!

Members News

Rule Changes for Repeater Use

A Gazette Notice published on 21st March (also carried in May 1997 RadCom) announced a number of changes to all UK licenses. The notice included the clause below:-

(11) in sub-clause 7(1) of the (BR68) Booklet, the words "which does not apply to operation via repeaters" were inserted between "sub-clause (1A) below" and "during transmissions";

The effect of this is that when operating on a repeater the simplified requirements for identification no longer apply. So a callsign must be given at the start and end of communications as per normal operation. The Essex Repeater Group Committee are anxious that all repeater users are aware of this and will abide the change in regulations.

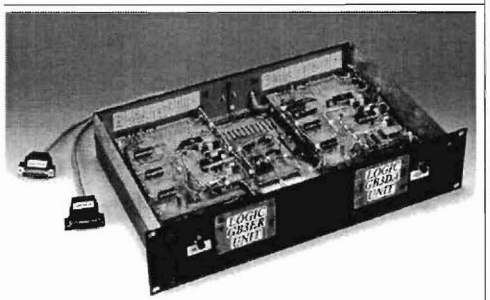
GB3CMS Update

GB3CMS Microwave Beacon (RF Unit)

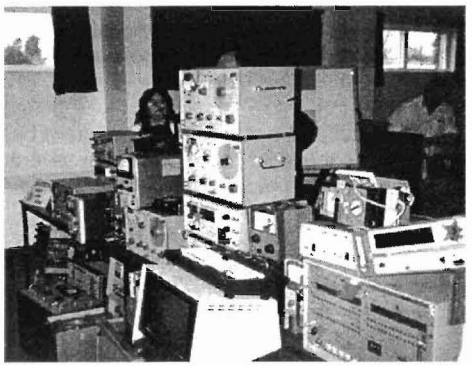
RF head fully checked out and operational. New antenna waveguide feed assembly built. Water drainage port designed and fabricated for waveguide assembly. New mounting and support structure for antenna feed designed and fabricated. RF head mounting brackets designed fabricated and installed. Painted to blend in with the surrounding environment. Aerial (about to be) recoated to prevent water ingress. Aerial mating flanges changed for easier assembly. Thermal insulation renewed.

GB3CMS Microwave Beacon (Keyer Unit)

Circuit traced for documentation and future maintenance. Original Eprom data reversed engineered to determine coding format. New callsign Eprom (about to be) generated with updated information. Thorough checkout of keyer ready for installation with RF unit.



The Rebuilt GB3DA/GB3ER Logic Unit



They said "Pile it high and sell it cheap"
So we did and the Canvey Rally and again at the rather windy Southend boot sale!

Caption Competition

How can Sainsburys Baked Beans be cheaper than Tescos?

Can you think of a better Caption?

If you can think of a better line, please drop us a line! As usual, all entries via G6FCL QTHR.

Other News

12.5KHz Working for GB3DA and GB3ER

Last year the International Amateur Radio Union (IARU) conference held in Tel Aviv voted to make radical changes to the way the 144MHz and subsequently the 432MHz bands are planned. One effect of this decision is that your local repeaters will be forced into adopting a 12.5KHz channel spacing regime. The date set for start of this new regime is 1st Jan 1998 for the repeater equipment. Users equipment has longer to comply. Already several other repeater groups have made changes, and any new applications to the RMC have had to specify 12.5KHz operation since the beginning of this year.

A user with an unadjusted 25KHz radio would have highly distorted audio when clipped and then retransmitted by a true 12.5KHz repeater. When receiving he would get a weaker received audio level (approximately 6dB down), because the repeater peak deviation will be only 2.5KHz instead of the original 5KHz.

The ERG Committee have reviewed several options, so as to cause as little disruption to our users as possible, however no disruption is impossible. Amongst the options that were considered were:-

1. Immediate restart with equipment set to true 12.5KHz (which causes compatibility problems for 25KHz users)

2. Restart with existing 25KHz setup and no changes until 1st January 1998 (which will probably cause problems when a sudden switch occurs on Jan 1 1998 with no preparation beforehand)

3. Immediate restart with 25KHz receiver setup but transmitter deviation set low for 12.5KHz compatibility (which enables users to set their own gear up, but might result in initial confusion due to weak audio).

Whilst the committee are always open to suggestions, time is not on our side and so we intend to take the approach outlined below for both GB3DA and GB3ER.

When the repeaters return, it will be with the original specification settings (i.e. 5KHz deviation, 16KHz wide IF in Rx). From 1st January 1998 the transmitted deviation will be turned down to 2.5KHz, but the receivers will be left alone until 1st January 1999, when they too will become narrow band. The logic is upwards compatible, so only a few adjustments are needed on the repeater equipment. The effect of this will be to keep the repeaters compatible with wide band transmissions of users equipment but allows us to comply with transmitting within a 12.5KHz channel. Received audio will consequently sound weaker though probably still acceptable on users unadjusted receivers - just turn up the volume control!

In order to acquire experience with mixed and narrow bandwidth operation, the committee has sanctioned the acquisition of new narrow band IF filters. It is possible that before the end of the year trials will be announced where the spare radios (setup for narrower band operation) will be substituted to familiarise both ourselves, the membership and other users with 12.5KHz operation and give you an opportunity to realign your own equipment.

After 1st January 1999, those who transmit with a deviation greater than 2.5KHz, run the risk of being chopped out of the repeaters. Use the time we are stretching out to get your rigs modified!!