

# CQ- TV

THE MAGAZINE  
*for all Hams interested in*  
AMATEUR TELEVISION  
TRANSMISSIONS

*Produced for the British Amateur Television Club*

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Editor's Note

As described elsewhere in this issue, the RSGB Exhibition did not pass off without some trials and tribulations. Nevertheless, a good show was put up, and I know all BATCs will join in sympathising with George Short, who put in a great deal of work before the exhibition, and then had such bad luck at the last minute. However, an occurrence of this sort does serve to emphasis the fact that in our hobby, one person cannot reasonably be expected to produce all the necessary units by himself; the work invdved would be tremendous. Many of our members have built small units, such as telestill scanners, however, and it seems that there is a good case for some engineering standardisation with regard to cable outputs, etc. After all, any one of us may be called upon to give a lecture or demonstration, and it would be a great help if we could then contact other BATCs for the loan of other units designed to work on the same type of input. As an example. at the RSGB show, it was found that the polarities and levels of the various outputs from the camera unit were so widely different from those required by the transmitter and the emergency line monitor, that considerable difficulty was experienced in running the whole lot at once. As a preliminary, therefore, I am going to suggest that all units made by BATCs should, if possible, be designed to give outputs at the 1 or 2V level, positive white, negative sync, (whether mixed or not), and these outputs to be from suitable cathode followers. Similarly, units requiring sync and/or vision inputs should be designed to take inputs at this level.

This is only a recommendation, of course, and can be modified if members desire it. It would mean that members building BC TV sets should put the vision output stage on the CRT-plus-timebase chassis, so that this unit can be used as a monitor if necessary. It would mean that any member having a TV set built in this way could borrow any other BATC telestill or telecine unit for testing, or demonstration. It particularly applies to those of us with complete camera chains; if we could have contacted a spare master pulser and two or three monitors at the RSGB show, things would have been much easier. Can I have your comments, please?

As Christmas is approaching, I should like to express my thanks to you all for your continued support during the year, and to wish you all a very Happy Christmas. A special word of greeting is due too to those outside friends of ours, in particular Mr Charles Ian Orr-Ewing, MP, and various members of the industry, who have done much to help our activities onward. Even the Post Office - in spite of being "traditionally conservative" as one speaker at the RSGB luncheon put it - are doing their best to help, so it may well be that this next year will be one of further success in the world of amateur TV.

Notice: Nominations for BATC Committee posts must be received by March 1st 1953, the existing Committee being due to retire then. It is presumed that all existing Committee members are up for re-election, viz Messrs F. Rose, G3BLV Macshirter 3ETI Bradford 3GBO and Wheelo 3UKJ.

THIS MONTH'S SHORT NOTES:

OM Stocklet G3EKE has very kindly consented to help out with the Club Treasury, and will be checking the accounts for G3CVO.

Would the gentleman who borrowed G3CVO's gold pencil to sign the Visitor's book kindly return it as soon as possible.

Wanted: an 8012, by G3CVO. For disposal: a couple of 3FP7s. Apply G2BML.

The following back copies of CQ-TV are available on loan as a set: 5,6,9,10,12,13, 14,15. These are in a folder and will be charged for if not returned. As there is a demand for these back copies, I should be very grateful if members possessing editions not mentioned above would contribute them to the collection. Also available is a folder of photos, etc (not large enough for exhibition or reproduction) as a history of amateur TV. Postage, please.

There are four copies of CQ-TV No 12, several 13 and 14 still available @ 1/6d.

Would anyone having my copy of Scott-Helt please return it soon. This book can be borrowed through your public library. (Practical TV Engineering).

A wrinkle from G5ETI for video amps, also applicable to VHF gear: put the heater and HT wiring outside the chassis to prevent unwanted coupling.

May we extend a cordial invitation to any B.T.Cs who may be in the UK during the coming year to pay us a call? In this connection, will anyone who would be so good as to accommodate an overseas B.T.C during Coronation time please let me know.

VCR526 data from E.W.Fry and others: same trace as GEC E4103/b/4, i.e green.

Full figures available from G3CVO if required.

Readers are reminded that a series of articles is appearing in the RSGB Bulletin on the subject of amateur TV. The first one, a general introduction, was in the November issue, and Pt ii, on a telestill unit, should appear in the January or February editions.

P40ZX continues to run his 80m sked for Dutch and German speaking TVers on Saturday afternoons at 1530 GMT. G3CVO is now back on 80m but not 160m yet. Both G2WJ and G3FNL can be found on 80m, the latter as G5YC during term. G3BLV and G5ZT are still on 40m. G3CVO can be reached via G6UW at Cambridge during term time.

As the B.T.C membership is now nearly 200, the Editor regrets that he cannot undertake much correspondence, especially near exam times.

Since writing the Editorial, the Editor has had a chance to talk over with various people the matter of standards, and there seems to be a strong feeling that a 5V level is preferable to a 1 or 2V level. Comment, please.

Tony Sale reports misprint in the article on video amps: the trimmer across the 150K resistor in the grid of the third 277 should be 30pF, and there must be another stage after this to complete the unit. Overall gain is about 200 times. Apologies for the scrappiness of this issue, due to its having been written at odd times whenever the opportunity presented itself.

Wanted: a scribe to write a regular column on TV for the Radio Amateur.

Patent Corner: One of our members has a patent out on an improvement to rotating colour wheel systems. Briefly, polarise the light from a CRT, pass into a quartz crystal along X-axis. Each colour of original white light will be rotated by a different amount; rotation of analyser will select each colour in turn. However, keep the analyser fixed and rotate the plane of polarisation electrically, and we have an all electronic system capable of running at frame, line or dot speed.

Wanted: suggestions for improving the rotation device: tried Kerr effect, longitudinal and transverse electric and magnetic fields in liquids, and on the quartz crystal. All work, but have some practical snag. Suggested: rotation by some substance such as a transparent Ferrite cube by transverse magnetic field. Suggestions welcomed, write G3CVO..

Happy Christmas all, and roll in the mail for the March edition No 16.

THE BATC DEMONSTRATION AT THE 1952 PCGB EXHIBITION

Well, they do say the best laid plans of mice and men....! In spite of everything possible having been checked and duplicated, the one thing we could not allow for happened. On the Tuesday, on his way to the show, George Short was doing 40 mph when the trailer drawbar pin snapped. In the ensuing mess were just 4 valves intact, and we lost our master pulse generator, the telecine and telestill units, the master mixer and distribution amplifier, a monitor, the sound outlet, and the variac! Available at the exhibition were Ian Waters' image iconoscope camera chain and Ralph Royle's 70cm TV transmitter, plus three English Electric TV consoles for use as monitors. Unfortunately, Ian's unit gives out negative vision at the 1.0V level, and Ralph's unit requires 10V positive. In addition, Ian uses sync and blanking pulses with coincident leading edges - and over the radio link this gave the English Electric syncrophase circuit some trouble. With some midnight oil, plus a large part of 3CVO's rack equipment, an emergency mixer unit was fired up, but the two Birmingham frequency TV sets resisted all efforts to lock them with a small modulated oscillator; direct feed was not satisfactory due to the live chassis, so we were restricted to Ian's 9" CCU monitor as the only viewing screen near the TV studio. An attempt to run 3CVO's TV set-cum-monitor off the modulator output also was not satisfactory; every effort seemed to result in either the radio link going out of sync, or the local monitors failing. In the end, it was left to the radio link to supply a signal to a set about 50' away. Reception was not good, partly because the tx and rx were too near, and partly because of spurious reflections from persons in the audience. In spite of flutter, however, at times the pictures were very good, and the transmitter and receiver caused great interest.

Without the telecine and telestill units, it was necessary to run the camera continuously, interspersing test cards with live transmissions. The latter consisted mainly of explanations of the equipment, plus some pep talk on the BATC, and the televising of the membership map. On the Saturday, Grant Dixon came down from Ross with some of his colour equipment, and explained this "over the air". In spite of the lack of monitor screens, the general public was very interested, and even watched the Hon Sec "live" in order to see How It Is Done.

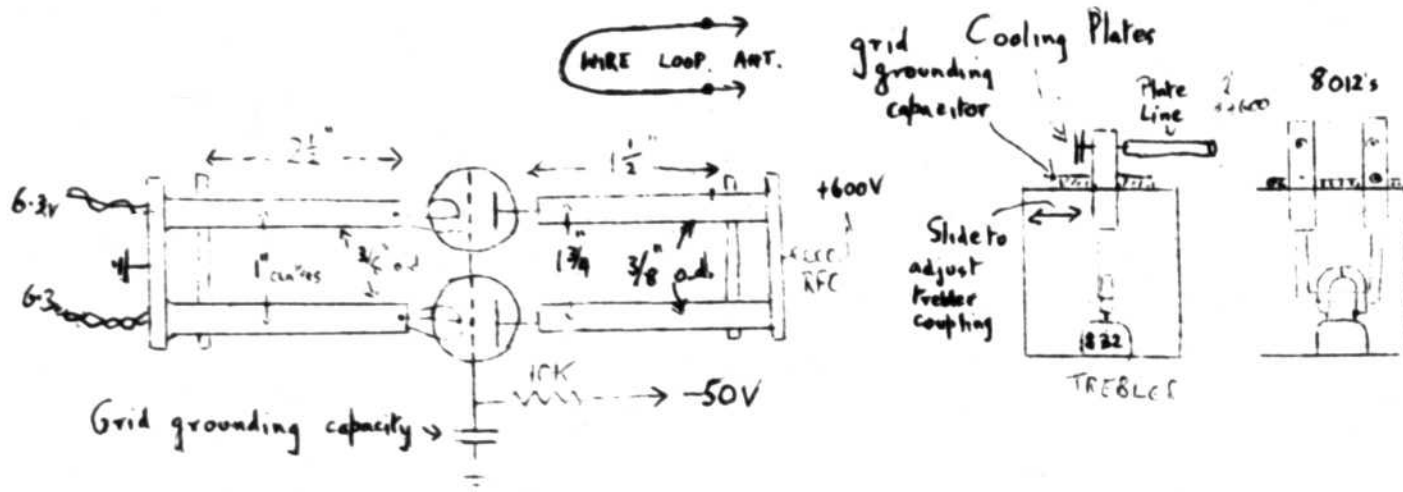
Normal complement of crew was Ian at the CCU, Ralph or Jeremy on the radio link, John Woodfield on the camera, Don Bradford as dolly-man, and Bill Hall lights. Many other BATCs turned up and helped out on the stand, etc, but especial mention must be made of the above, who put in a lot of time to make the show a success. In addition we should like to record our thanks to the English Electric Co (TV sets), Les Allen (Lights) Universal Electronics (sound amplifier) EMI (pattern generator) Siemens (bias batteries) and to the many other people who generously plundered their own stands to help us overcome our shortages. Also a note about Jimmy Brett, who came out at 10 p.m from Ilford on an autocyte with a hefty autotransformer tied round his neck on a really cold night. Jimmy was a great help during the whole show.

On the stand was a display of units loaned by 3CVO and Grant Dixon, plus copies of CQ-TV and publicity material. 20 new members were signed on, and contact renewed with many old members whose subscriptions had lapsed. Among the many visitors we were very proud to meet Sir Ian Fraser MP and Mr Orr-Ewing MP, Mr Birkinshaw and other senior BBC engineers, Phillip Slessor and Tommy Price - both are licensed amateurs - and many senior members of the industry, GPO and Government research establishments. Many BATCs made the long trip down, including Fred Rose G5BLV and Johnny Hogarth G3ACK from Sunderland way; we were very pleased to see Old Ivan Howard again, who reports that in spite of the recent lack of news from him, he is still very active. 3CVO took 100' of cinefilm, which may be of some interest (if any of it comes out!) and will if possible be shown over a telecine rig later in the year. Some 4000 people are reported to have visited the show



Condensed from letters from Robert Torrens, GI3FWF/T.

The transmitter employs a pair of 8012s in push pull in a parallel lines circuit, driven by an 832 trebler from two metres. As a rough guide to the output available, the unit will light two 6W car headlamps to full brilliancy, and most of this appears to be on 70cms and not 2m! (This is with 25W DC input to the 8012s). The drawing shows the line lengths, etc. and it is emphasised that these dimensions, and the layout shown, must be strictly adhered to, or difficulties may be encountered.



The PA tubes are fixed in a slotted mount, the whole unit sliding to adjust the drive from the trebler by altering the coupling. The PA has a fixed bias of -50V, and the plate current increases from 12mA to 40mA when drive is applied. For cw working, the exciter is keyed.

The following points have been raised with RCA and others: (i) the anodes can be run red hot in the 8012s as long as there is plenty of cooling; (ii) if drive is low, the grid bias resistor on the PA can be dropped to 6.8K with no fixed bias; (iii) the 832 is not efficient as a trebler, and some other tube as a trebler or doubler might be better, especially from the point of IT consumption; (iv) almost any other layout is impossible to drive (see G3FNL, G2FKZ, G3CVO et alia).

GISENF/T is in Lisburn, N.I. about 100 miles from Glasgow, mainly over water. Signal strengths from Kirk O'Shotts indicate that there should be a good chance of getting across with 70cm TV.

SOME FACTS ABOUT RESONANT LINES FOR VHF

Very often, a piece of resonant line is used as a frequency determining circuit at VHF, and it is necessary to know how long, physically, the line requires to be for any application. Consider the case of an oscillator connected as in Figure 1a, with a shorted quarter wave line between anode and grid. To calculate the length of this line, it is necessary to know the valve interelectrode capacity, in this case  $C_{a-g}$ .

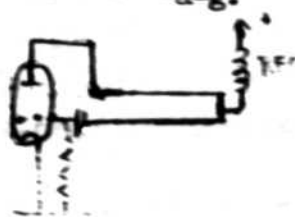


Fig 1a

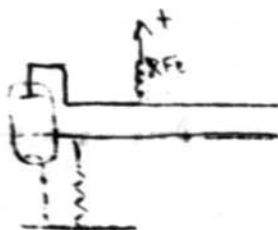


Fig 1b

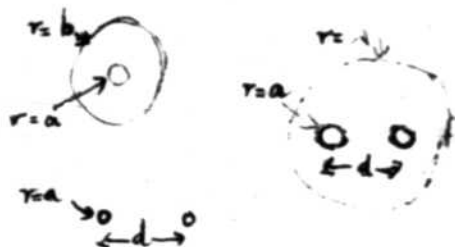


Fig 2

The relation is that the reactance of the interelectrode capacity  $X_C$  must equal the impedance across the end of the line, eg

$$\frac{1}{2\pi f C} = Z_0 \tan 2\pi l / \lambda \quad \text{where } Z_0 \text{ is the characteristic impedance of the line, } \lambda \text{ is the wavelength of oscillation, } l \text{ is the length of the line, and } C \text{ the interelectrode capacity}$$

Sometimes a  $\lambda/2$  length of open-ended line is used instead, in order to make the physical dimensions larger (see fig 1b). In this case the physical length required is  $\lambda/4$  longer than that length given by the above equation.

The optimum ratio of inner to outer diameters in coaxial lines is about 1:3.6; this gives maximum Q and minimum attenuation.

From the above equation it will be seen that both  $Z_0$  and C should be small for l to be large. The relations are:

$$Z_0 = 60 \log_{10} \frac{b}{a} \quad \text{or} \quad 138 \log_{10} \frac{b}{a} \quad \text{for coax; } 276 \log_{10} \left( \frac{d}{2a} + \sqrt{\left(\frac{d}{2a}\right)^2 - 1} \right) \quad \text{for unscreened parallel lines;}$$

$$\text{and } Z_0 = 276 \log_{10} \left( \frac{d}{a} \cdot \frac{1 - \left(\frac{d}{2s}\right)^2}{1 + \left(\frac{d}{2s}\right)^2} \right) \quad \text{for screened twin, where the dimensions are as in Fig 2.}$$

The Q of a coaxial line is given approximately by

$$Q = 9.2 \times 10^{-3} \sqrt{f} \frac{\log_{10} b/a}{\left(\frac{1}{a} + \frac{1}{b}\right)} \quad \text{For } a = 5 \times 10^{-4} \text{ metres (0.2mm), and } b = 5 \times 10^{-3} \text{ metres (2.0mm), the Q is}$$

about 850 at 500 Mc/s. By increasing a and b and using the optimum b/a ratio this can be increased considerably. The formula shows that Q increase as f, is a max for b/a = 3.6, increases with a and b, and is independent of the number of quarterwaves in the resonator. Using a and b 10 times as large as above, the Q will be 8500, whilst for screened twin conductors of 1/10th" diam at 1" centres in a 1 1/2" radius screening cylinder, also at 500 Mc/s the Q will be about 4500.

The precise material of construction of the lines will not affect the above equations by a large amount, but remember that the penetration of RF currents in a copper surface, for instance, is only 0.026mm at 100 Mc/s, so that the surface finish will affect the apparent resistance, and hence the Q and attenuation of the line.

References: HF Transmission Lines, Willis Jackson (Methuen).

VHF Techniques, Harvard Radio School.

THE TELEVISION SOCIETY'S TELEVISION TRANSMITTER G3CIS

Two evenings were recently devoted to a discussion on the Television Society's transmitter, and several B.T.C. members took advantage of that Society's very kind offer to admit members of the B.T.C. to the meetings. The first meeting was devoted to a discussion of the Pulse generator, (Messrs Banting and Fairhurst, of Murphy Radio), and the Monitor unit (Mr Banthorpe, of Derwent). We learnt that a full BBC standard waveform is generated by a unit that is fundamentally a modified Murphy pattern generator. A count-down system is used to lock the whole affair to the mains, and all pulses are available at the 6V level from the front panel. Also on this unit is the video modulator, which takes Sync plus blanking plus vision at the 6V level, and after one stage of amplification, this is applied to an EL37 used as a cathode follower, the bottom end of the cathode resistor being returned to a suitable negative voltage to give a net negative voltage for bias of the transmitter P.A. Some 100V of video is developed across this cathode load, the EL37 being pentode connected to take advantage of its high  $G_m$ .

The main monitor unit has a 12" tube, which can be switched to monitor the outgoing signal, or the signal picked up on a local aerial from either the transmitter, any other transmitter or the BBC TV service. The master receiver is tunable over the whole 425 Mc/s TV band, and uses a thermionic diode mixer, with an EC52 fundamental local oscillator. The monitor TBs have wide range frequency adjustments to cope with any unusual experiments that may be tried, eg 625 line working..

Mr Banthorpe, who is himself in the B.T.C. of course, has also built the 5527 camera chain, to the usual sort of plan, using EF80s in the video amp, and a VCR97 as the viewfinder. No shading or gamma correction is incorporated as yet, but plenty of room has been left for further development.

The very substantial power supplies have been made by Mr Macleod of Cintel, and go in another rack underneath the transmitter. B.T.C. member Ernie Dedman G2NH has been mainly responsible for this, which uses a 12AT7 multiplier-CC, 5763 multipliers to the 94V06/40 trebler (or doubler) and a 94V06/40 P.A. The initial output is expected to be about 8 watts only, but plans are in hand to increase this to about 75 watts later. The vision carrier is double sideband on 427 Mc/s with the sound channel standard BBC separation of 3.5Mc/s lower, ie 424.5 Mc/s. so that both sound and vision will be received on a standard TV set plus a suitable adaptor. The sound transmitter has not yet been built. The aerial will initially be an array of five stacked full waves with a wire netting reflector, the whole array being about 60 feet above ground, which at this point is about 250' a.s.l. A contour map was shown which demonstrated the fact that practically the whole London area is in optical range. With regard to the low power output and the maximum TV Society membership density, the array, which has about a 90° forward included angle of radiation, is to be beamed roughly North to North West from Norwood. When power is increased, a bidirectional array will be used to give a signal to those living in South London. The aerial was designed by Mr Corfield G5CD, who also showed various types of receiving aerial and a converter design. Horizontal polarisation is employed.

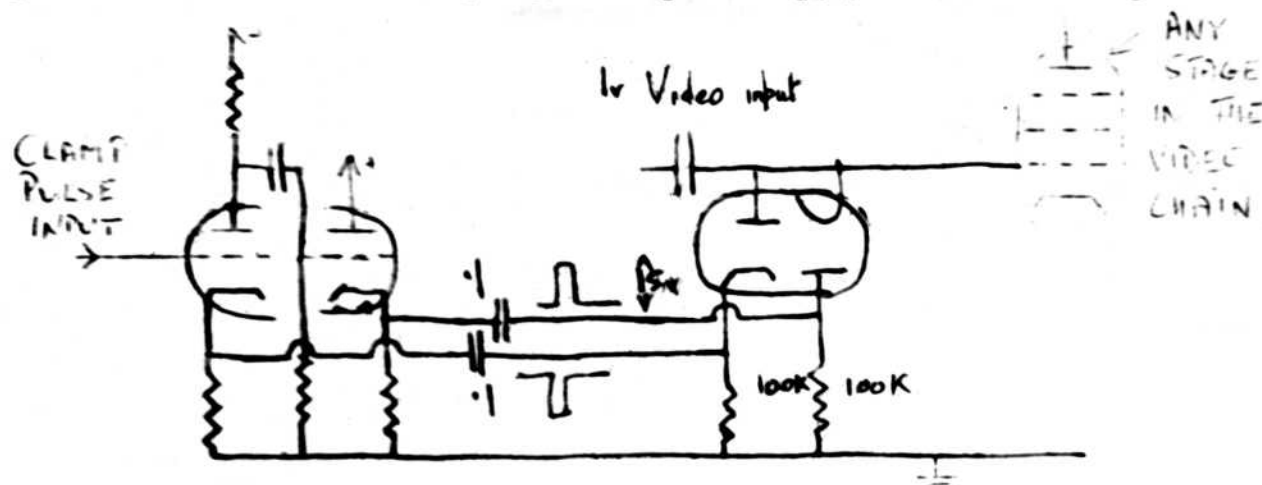
We have been informed that last month's notes on this transmitter were not quite correct, in that all the units are being made by the members from components supplied by various manufacturers. The finish of the units is very nice, but so far, although each unit has been tested by itself, it still remains to see what happens when the whole lot is assembled and switched on! Mr Clack hopes to have the transmitter on the air by the end of March.

## IMPROVING YOUR PICTURES

Although satisfactory results can be obtained from very simple equipment, using the flying spot system, it is possible to effect a great improvement in picture quality by incorporating some of the circuits used for professional use. After all, no-one will deny that if the BBC could get satisfactory results from 3 valves rather than 300, they would jump at the opportunity. On the other hand, in amateur usage, the overall picture quality does not warrant refinements that would only be noticed if a BBC camera chain was in use. Let us see what simple steps can be taken to improve things, however.

Firstly, in the matter of blanking. Readers will all be familiar by now with circuits using sync pulses for blanking as well; that is to say, during flyback of the scanning system, a pulse from the time base unit is fed back into the video amplifier so as to cut off the video output. Also familiar is the fact that as this means that the system must drop from video level to sync level very quickly, bright objects at the edge of the picture cause loss of synchronisation. Circuits have been given in CQ-TV recently for providing a longer blanking pulse in order to give the system a rest at the halfway point, so to speak.

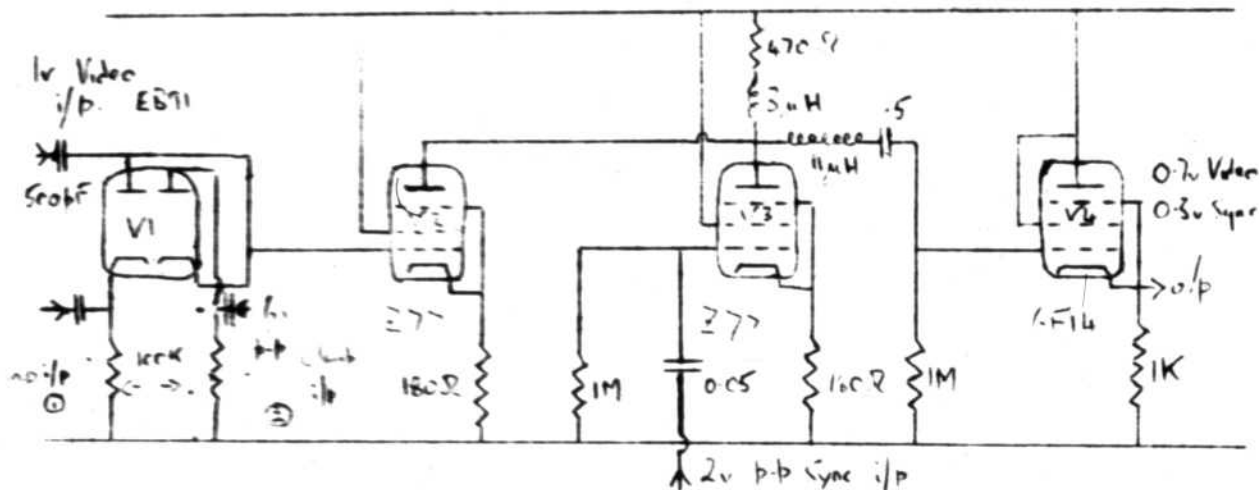
Another trouble that can occur, especially in camera chains, is the pickup of spurious hum and other oddments in the various units and cables. One way of cleaning this up - and sometimes making a 100% improvement in picture quality - is to clamp the grid(s) of one or more stages of the video chain by shorting them down to earth for a short period. Note that this is in addition to normal blanking. For this purpose, the clamp pulse could be the blanking pulse, but in that case there is the danger that a transient may be introduced as the "short" is removed at the end of the blanking-cum-clamp pulse. On the other hand, the sync pulse may be too short, so in professional use it is general to make the clamp pulse begin just after the blanking pulse and end just before the end of the blanking pulse. For amateur work, however, try the sync pulses to begin with; if this is not satisfactory, then use a lengthened sync pulse. It should be explained that this all occurs at line frequency, as the time constants in the frame circuit are not so critical. Another advantage of the circuit is that it allows AC lighting to be used on the studio without introducing unnecessary hum, and also that it is no longer essential to use a fully regulated power supply on the video amplifier.



DC Clamp Arrangement: Fig 1



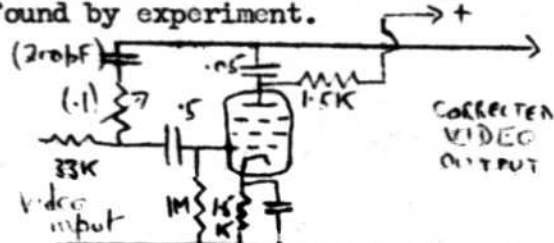
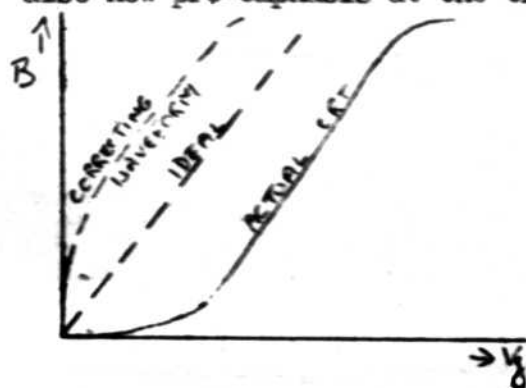
The picture/sync mixing also seems to give rise to trouble for some people, and a good method is shown in the diagram. V1 is a glowing tube, V2 amplifies the video + blanking, and V3 amplifies the mixed sync. As V2 and V3 have common load, mixed sync + video + blanking is passed on to V4, the output cathode follower. Note that pentodes are used in the sync/video mixer to increase the circuit isolation and also give a high current through the necessarily small load resistor. The sync input to V3 can be mixed in a double diode, triode or two further pentodes in the normal way; about 2 volts peak-peak of sync will be required for 1 volt of video input to V2. Note that the HF correction coils are designed for a flat response, as it is assumed that the necessary HF peaking for flying spot work will already have been done in the head amplifier.



### DC Clamp and Sync Mixer Circuit

Application of negative feedback in audio use is well known, but how many members have tried it on telestill units? By applying some of the video output from the head amplifier back to the grid of the scanning CRT in such a manner as to give a negative picture on its screen, the picture sharpness picks up to a considerable degree, although the video output from the system is, of course, somewhat reduced. This appears to be due to the reduction of afterglow tailing on the scanning spot, and is a simple matter to try out.

One final refinement for the purists is a gamma correction circuit; this will improve the tonal values in the reproduced picture. The brightness-grid voltage curve for a CRT is not a straightline, and this means that at low grid voltages the change in brightness for a given voltage swing is not the same as at higher voltages. The diagram shows the idea, and also how pre-emphasis at the transmitter can allow for this. The circuit is quite straightforward; a feedback loop is incorporated to overdistort the response, and the values must be found by experiment.  $\rightarrow +$

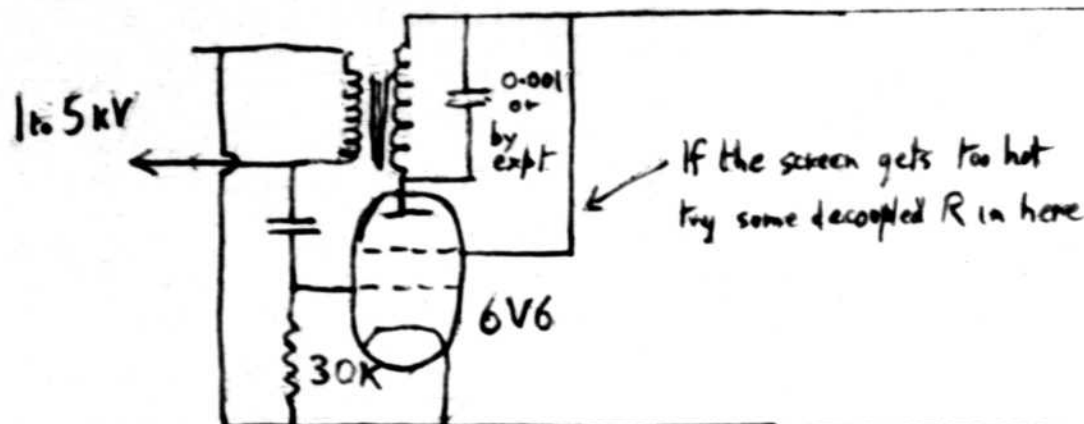


CQ-TV REPRINT from No 4.

LF E.H.T. UNITS

by D.P.Bishop.

The usual type of transformerless EHT supply uses a TPTG RF oscillator running between 30 and 100 kc/s. However, many BATCs have no doubt wondered whether they could not use some of their existing surplus transformers instead. Not counting the use of step-up audio transformers running off the mains, this circuit is characterised by its use of those "useless" radar transformers with 80V primaries. These are normally for 400 or 2000 cycle operation, and so if we can build an oscillator to give 80V at these frequencies, then the existing EHT windings can be used. It is possible to use an amplifier running off the line sawtooth, etc, but in the interests of economy it is better if the transformer is an integral part of the oscillator; this is easily done, and the circuit is below.



The operation is that of a blocking oscillator, and the feedback condenser C is a very critical component. A typical value is 5pF, and don't forget that the full EHT is across it! If a ceramic cup type is used, adjust it for max output; alternatively, the grid lead can merely be extended and brought close to the transformer secondary, this giving adequate coupling. The primary of the transformer is also tuned, either for max output or minimum screen colour!

Transformers so far tried have included an 80V - 2.5kV (marked 2V EHT, but actually 2.5kV to earth and 2V between tags), and various line and hybrid transformers. About 2 mA can be drawn, but it is not advisable to try and take rectifier heater volts from the unit as well. Actually, greater output can be obtained by using a separate pulsing valve, but as 5 kV were obtained in this manner, this should not normally be necessary. The unit is most useful for voltages below those obtainable economically from RF EHT units, ie between 1 and 3 kV. One point to remember - the 400 or 2000 cycle whistle can be deadly unless the transformer is well mounted and has no loose laminations!

Don't forget to let the Hon Sec know whether you are in the market for a camera tube. These come at £30 or so for a 5527, £10 for a manufacturers reject tube **LATER ON IN THE YEAR**, or a tube on loan **AGAIN LATER IN THE YEAR** and subject to several conditions. Applications from members already possessing some form of camera tube can only be considered if they are prepared to let their existing tube go.

Ian Macwhirter warns against the use of the 5FP7 for camera viewfinders and monitors: the long persistent yellow trace prevents you seeing alterations in optical focus. Has anyone any information on an iconoscope marked I39M/6? German origin??? Did anyone see what became of a (faded) blue and white chequered dust sheet at the Exhibition?

Correspondence Column: Christmas Edition. Season of Good will to all  
 BATCs; no letters disagreeing with the Editor's opinions will be published.  
 16 Queens Ave Gt Meols Wirral Ches.

To the Editor, Sirree,

Dear Ike, D M D M D M ( $1\frac{1}{2}$  Mc/s ring, sorry), sorry about the delay with this letter, but you wrote and asked me for a  $\frac{1}{2}\mu$ s delay. Well, I got the delay and the letter, and got the letter mixed up in the delay. I made a delay and wrote the letter, but unfortunately I shortcircuited the delay line before I got it into the letter that's where I went wrong in the latter I tried to put the letter into the delay instead of the delay into the letter and as I said I shorted the delay line so that when I put the letter into the delay it was lost perhaps you don't follow but you see when you put a letter into a delay line it travels down the line charging up the shunt capacitance until it reads at the far end where the short circuit is so that the last stray capacity could not charge up and so the letter was reflected back down the line towards the end where I had put it  $1\frac{1}{2}\mu$ Sec before if you remember cold in my dose and as it reached the end the last capacity charged up and in discharging the letter went down the line again where it was reflected again with another delay of  $\frac{1}{2}\mu$ Sec so that the letter was then  $2\mu$ Sec late for the post. I was really annoyed because I had to wait until the damping of the delay circuit caused the letter to stop exactly 0.000101034182 $\mu$ Sec down from the short circuited end the result being that I had to poke it out with another letter of opposite polarity which..... a man in a white coat is coming towards me now, and he looks awfully sad. Can this be Romance? Yours Ina/T.

44, South Bend St, Weston-super-Mare.

Dear Aunt Aggie,

I have been transmitting television signals for some weeks now, and yesterday my next door neighbour came round with a sledgehammer. Is this the best method of preventing line slip? G3GB0.

Anon:

See the happy Moron,  
 He doesn't give a damn.  
 I wish I was a moron,  
 My God! Perhaps I am!

Dear Sir,

I have replaced the electron gun of my 5527 by a proton gun. This has the advantage of giving an inside-out picture, very suitable for hospitals.....

(Dr)I.MacWhirter, O.B.U, ETC.

Dear Sir,

FOUR valves in a pulse generator? Disgraceful.....G3CVO

Dear Sir,

THREE valves in an interlaced TV transmitter? Disgraceful.....G3BLV

Dear Sir,

VALVES in a TV transmitter? Disgraceful.....G.E.Sale.

Dear Sir,

$$\int_0^a J_n^2(\mu r) dr = \frac{1}{2} ((J_n'(\mu a))^2 + (1 - \frac{n^2}{\mu^2 a^2}) (J_n(\mu a))^2) \dots \dots \dots W.Oliver.$$

Dear Sir,

Whilst rummaging in my attic last week, I came across a mechanical contrivance invented by my grandfather who died in 1887, which appears to be an early form of television transmitter. Is this a record? G.Popov, Moscow.

Dear Sir,

I find your magazine fascinating, but fascinating. A.Andrews, o/o BBC.

WHAT THE OTHER CHAP IS DOING.....

Big news of the month is that two more live cameras are in action, and that one of these is a manufacturers reject. Readers are reminded that once results are obtained with these tubes, the supply position will be reviewed. Ian Macwhirter has a CPS tube in action after several months hard work, but he says that the picture quality repays the work involved; he gets BBC quality with 150 watts of lighting indoors, and has trouble with overloading outdoors. He has no iris on the lens, and is using milk-bottle tops instead! Anyone a good design for a simple iris action? Ian is also hoping to organise a BATC convention in Manchester or Liverpool, and would like to hear from anyone interested; he is now going ahead with the 70cm transmitter.

Tony Sale, in between working at Chelmsford, has completed his 5527 camera, which is at High Wycombe, conveniently close to G3CVO's transmitter. G3CVO has now finished off the low power transmitter, and is experimenting with modulators prior to taking out the licence. A 4kV power supply has been finished, and will be used to supply EHT to the scanner and monitor units; after the RSGB show, not much of the pulse generator remains unmodified, so initially only test patterns will be radiated.

Dick Grubb, G5FNL, is trying hard to get on the air with a picture before he has to move house. The pulse generator and monitor (as at the RSGB show) are in working order, and Charlie Newton G2PKZ is building the new tx. This will use a DET24, it is hoped, capable of 25 watts output on 70cms. As reported elsewhere, members Banthorpe and Dedman, amongst others, have been active in the building of the Television Society's tx, G3CTS, which it is expected will be on the air by the end of January.

Ralph Royle, G2WJ/T, has discarded the CV53 rig in favour of something bigger, and will now use a CV127 driving a DET24. The camera chain is very nearly complete, and live pictures may be on the air over Christmas.

A large number of new members joined after the typing of the new members list, mainly interested in constructing telestill units for a start (see RSGB Bulletin). Amongst the old faces who turned up at the RSGB show were Ivan Howard, G2DUS now at Baldock, getting better pictures from the 5527s and hoping to go on the air with them shortly; Fred Rose G3BLW/T who has bigger and better plans for more and more efficient TV txs; G3BIH of Durham up and about again, G3LCK of Blyth building units to work Fred Rose. Grant Dixon's colour corner at Ross proceeds apace, the camera is partly built and all the monitors and pulsing gear is complete. Bernard Whitty G3HAX is now recovered, although still off work for the time being. Colin Fox G3HII had the telestill scanner going after a fashion, but has now been called up for the R.F. Johnny Woodfield is building a domestic TV set and then a 70cm converter; he may be moving back to Manchester, Ian. He wants a 5FP7, friends. By this time two BATCs in Rhos may be licensed for "tensil-bashing on steam radio", but Arthur says they are also trying a simple scanner whilst they are at it.

H.C.Barton of Chiswick reports that his official experiments with FS TV have ended, but that he is going to carry on under his own steam when time permits. Dalton Raby has finished the 2m tx, but has since been posted, and is at present on leave in Holland, looking around the PAOTV gear.

Hendrik de Waard has been very busy, but the boys have rebuilt the camera, and results are extremely good now. With the coming of the commercial tx at Lopik accent is now on reception, but they are very keen to put a 2m TV signal into this country if possible. We have no other news of overseas members this time, with the exception of Bill Roberts, who is on his way out to join Graham Goodger (indirectly) in N.Z. How about starting something down there, oms?



## New Members this quarter:

|                       |          |  |
|-----------------------|----------|--|
| L.Gostelow            | G2FOW    | 21, Cannon St, Lincoln, Lincs.                                       |
| R.Saddler             |          | 14, Hainton Rd, Rookery Lane, Lincoln.                               |
| J.Short.              |          | 22, Maple St, Bracebridge, Lincoln.                                  |
| J.Brett               | BRS19675 | 1 Elgin Rd, Seven Kings, Essex. Tel SEV2425.                         |
| J.A.Rouse.            | G2ANL    | 4, Albury Rd, Guildford.   |
| R.Sanvoisin.          |          | 26 Landra Gdns, Grange Park, London N21.                             |
| C. Ellett.            | G3ARJ    | Heppnershall, Shefford, Beds.  |
| F.J.Steed             |          | 17, Staff Houses, Broomfield Hospital, Chelmsford.                   |
| J.Greenwell           |          | 7, Soudes Place Drive, Dorking, Surrey.                              |
| R.B.Forge             | G5FRG    | 2, The Plantation, Worthing, Sussex.                                 |
| P.W.Winsford          | G4DC     | 63, Erlanger Rd, London SE14.  |
| W.J.T.Kinniburgh-Boyd |          | 42b, Fellows Rd, London NW3.   |
| P.V.Jude.             |          | 1, Luckmore Drive, Earley, Reading.                                  |
| R.J.Andre             |          | 511, Fairfax Drive, Westcliff-on-Sea, Essex.                         |
| W.J.Tarrant           |          | Whitcombe Hostel, Brockworth, Gloucester.                            |
| R.Munden              |          | 71, Frederick Place, Plumstead, SE18.                                |
| R.Halls               | G3ETW    | 48 Raglan Rd, Plumstead, SE18.                                       |
| M.Harris              |          | The Huon, Bournemouth.   |
| L.A.F.Stockley        | G5ENE    | 309 Norbury Ave, London SW16.  |
| J.Carbo               |          | 34, Sandringham Crescent, South Harrow, Middx.                       |
| C.J.Batty             |          | 57 Highfield Ave, Newbold, Chesterfield, Derby.                      |
| D.G.Radley            |          | Egginton Rd, Hilton, Nr Derby.                                       |
| E.H.Page              | G5HKV    | "Carol Cot", Stoke Abbott Rd, Beaminster, Dorset.                    |
| D.E.Hill              | G5IEP    | 9 Addington Grove, Sydenham, London SE26.                            |
| G.L.Turner            | G5LA     | 59, Crow Green Rd, Pilgrims Hatch, Brentwood, Essex.                 |
| N.E.Harris            |          | 95, Fane Park Rd, Putney SW15.                                       |
| B.G.Roberts           |          | 41, Puriri St, Miramar, Wellington, N.Z. (188)                       |
| Chages of address:    |          | P.Parkin, The Fox and Hounds, Chessington, Surrey; 3502404 Cpl       |
| White D.W.            |          | Hut 650, Roman Site, 30 MU, R.F, Stoke Heath, Market Drayton, Salop. |
| J.R.Nettell           |          | Vernall, Post Office Lane, St Ives, Ringwood, Hants. (189)           |

Note: Owing to some misunderstanding at the RSGB show, I have no indication as to how many of the above members actually bought CQ-TV Nos 13 and 14 at the show in addition to paying their 5/- subscription. If I do not hear to the contrary, I shall assume that nobody did, but that all of you took those copies with you. This means that your subscription will be renewable with No 17, unless I am informed to the contrary. Sorry about this. (Does not apply to members joining other than at the show).

At the time of going to press, the following stations are known to be licensed for TV transmission: G2DUS (Baldock), G5ZT (Plymouth) G3BLV (Sunderland), G13FWF/T (Lisburn, N.I), G2AJ (Dunmow), and the TV Society G3CTS (Norwood).

The following members have notified their intention of getting on the air in 1953: G3ACK (Blyth) G5ETI (Wirral) and G3CVO (Gerrards Cross).

The following members are known to have live camera tubes: C.G.Dixon (Ross), G5ETI (Wirral) G3BLV (Sunderland) G5BHH (Durham) G5ZT (Plymouth) G3CTS (Norwood) G13FWF (Lisburn) G2AJ (Dunmow) G3AHB (Slough) G3AJW (Stroud) G3AKJ (Romford) Messrs Bellamy (Bristol) Short (Boston) Waters (Ely) Oakley (Dagenham) and G3CVO. We should like to know of anyone else possessing live camera gear.

DO YOU KNOW THE MEMBERS IN YOUR AREA? WHY NOT GET TOGETHER SOMETIME?

