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:

This month we are proud to record the fact that two of our oldest members have made the first two-way TV contact on the 70 cm band. Ever since the Editorial in the first edition of CQ-TV ended with the words: ".... and let's get on with that first TV QSO!" this has been the aim of many of our members. Those not possessing transmitting licences have done valuable research on the video side; the transmitting members have struggled with the problems unique to wide-band modulation at VHF and UHF. In spite of the technical difficulties involved, and the quite ridiculously exorbitant licence fee, the job has finnaly been done. Now we can go ahead and improve results all round. Better vision equipment, employing fewer tubes and expensive components, more efficient transmitters and receivers, perhaps even a first colour transmission, and there is always that goal of a cross-Channel TV contact. Admittedly the equipment in use by G5ZT/T and G3BLV/T is complex and expensive, and has taken a great deal of time to construct, but now we have the basic system well understood, and many of the snags removed, there is no reason why much simpler equipment should not be made to give equally good results.

No objections having been raised to last month's suggested Committee, Messrs Dixon, Barlow, Bradford, Wheele, Rose and Macwhirter therefore consider themselves confirmed in office, and the Club Constitution has been adopted officially. The Club is now affiliated to the RSGB.

Several well-known British manufacturers have written to offer their aid, and for this we are most grateful. In many cases, the cost of the components, etc, offered have been outside our price range, but we have asked that we be kept informed should any manufacturer's rejects become available. Our thanks too to those firms who have offered a discount to BATC members; notes on these appear in the Months Short Notes.

In conclusion, a reminder about the RSGB Exhibition during the third week of November; full details appeared in the last edition, but please bear in mind that NOW is the TIME to start making those units look NEAT and TIDY and SAFE. Many thanks to those members who have offered to lend gear or to come along to help on the stand. Urgently required in the London area are a spare telestill unit, preferably equipped for 35 mm still projection, and some sound and PA equipment. Would those members who have lighting equipment to lend the Club please confirm whether it will be available in November. We should also like to hear from any members who are willing to undertake the preparation of posters, banners, test cards and other display material. We hope to see as many BATCs as possible at the show - on your stand, of course. And on the subject of shows, don't forget to visit the Dagenham Town Fair on August 22nd-23rd, and make a point of seeing the BATC exhibit organised by the Dagenham and Romford A.R.Cs, with Doug Wheele in command.

For now, keep experimenting, keep writing - and have a good holiday!

73

M.Barlow.

THIS MONTH'S SHORT NOTES AND QUERIES:

Mullard's have a special MW6-2 Projection tube coming up with a short trace screen, for flying spot scanning. Price will be around £30. Anyone interested?
Many thanks to those members who supplied information on the LS180. G3CVO now urgently requires a No. 10 set receiver local osc cavity. Offers to M.B.
BACK COPIES of CQ-TV: a few of issues 10 and 11 and 12. 1/6d ea whilst they last, incl post, or your subscription can be put forward.
Congratulations to Bill White and his wife on their recent marriage.
We have received with thanks copies of DL-QTC and the Mohawk Journal. These can be borrowed from M.B.
Is anyone a member of the I.R.E please? Several articles of interest appear in the Proc.I.R.E, and we should like to know of anyone prepared to lend copies. In particular, the October 1950 Colour TV edition is urgently required for reference.
There is another good CRO design in the June Wireless World.
Has anyone facilities for enamelling and crackle-finishing panels, please?
Bill White has a few brand new EF50s etc for sale cheaply. Offers through M.B.
Thos A.Thomas wants a VCR139A cheap. Addresspon p12.
A good review of 420 Mc/s tubes was in the Feb '52 Wireless World, p 51-52.
PAØZX wants information on the Cintel 9M06 CRT, the VCR131 12" e/s CRT, the Jones plug connections, and if possible the circuit of the 100-124 Mc/s R1137A. Write Hendrik de Waard at Praediniussingel 39z, Groningen, Netherlands or call him on 80m on Saturdays around 1800 BST.
A.A.W.Skillman G5CSD offers the following tubes at reduced prices to BATCs; deduct 5% for cash with order. 6J6 7/6; 12AT7 7/6; 6C4 5/-; EF92 5/-; EL91 6/6; EAC91 6/6; EF91 6/6; EC91 6/6; D77 5/-. Write to 74 Franchise St, Weymouth, Dorset. All new and guaranteed. (Mni tnks, om, fer offer).
We would remind members that articles on amateur TV are now appearing regularly in the RSGB Bulletin. Photos are always welcome to illustrate these.
K.R.Whiston, 8 Watford Bridge Rd, New Mills, Near Stockport has a good mail order catalogue covering mainly all types of nuts bolts washers springs rivets rods poles and perches at very attractive prices.
Has anyone an old ice cream tricycle for use as a camera dolly? G3CVO.
Ian Waters reminds you that if you are dealing with an outdoor sunlit scene, a useful Zoom lens can be made by employing just a pinhole, and tracking the camera tube..... It works, too!
The following members are known to be active on 2m: G3CVO, GBO, ETI, AHB, AST, IDR, AHF, HZK, 2DUS, DD, WJ, and G6UH. Others may also be on this band, and G3CVO will call "CQ-TV" on 145.2 Mc/s beaming E-W from Gerrards Cross at 1930 BST on Wednesday evenings from June 11th onwards.
On 80m are G3CVO, PAØZX, (G3AKJ), 3GMZ, and CQ-TV will be called at 1400 BST on Sundays around 3700 kc/s. If nothing doing, call yourself. Dutch and German speaking members should try for PAØZX's TV roundup on Saturday afternoons.
Many members are active on top band, but I have no sked times. Somebody like to suggest one? On 40m, high up around 7300 kc/s at 1130 BST on Sundays is often occupied by G5BLV G5ZT and G3AKJ. All skeds will be made by G3CVO after June 8th.
The Hon Sec will be at Gerrards Cross from June 8th to July 7th, July 25th-29th, HOLIDAY from 29th to 8th August, then OK till October 5th. At other times use the St Johns College Cambridge address, please, and save my mother some work....
Certain British manufacturers have offered to help out with the loan or sale of manufacturing reject camera tubes. These are in extremely limited numbers, and are subject to a no-public-exhibition condition, amongst others. Members who feel their results justify their inclusion on our admittedly unfair short list of possibles, should write to the Hon. Sec. No correspondence with the firms, please.

Success! They did it!

YES, SIR!! They really did the job at last.... Just remember the date, you fellows:

Thursday, May 1st 1952: The First Two-way TV Contact on 70 cms.

Both stations are active BATCs who have been with the Club right from the start. Well done, men; I know all BATCs will join in congratulating you on this fine performance. Let's have a look at the record of these two:

Harold Jones, G5ZT/T of Plymouth. Joined the Club in early 1949. Started off with DX TV receivers, then bought a 5527. Was on the stand at the 1950 RSGB show. A bad fire in 1950 set him back a bit, but by this Spring he had the video amp built, using seven EF50s, EF50 TBs, VCR137 Monitor, 12" mgtc monitor, all the PSUs, sync mixing units, etc. The RF side comprises 6V6 6V6 832 832 trebler to 427 Mc/s. His rx used an Xtal mixer, 9002 osc and 62.5Mc/s IF. First reception reports were obtained on April 3rd.

Fred Rose, G3BLV/T, of Sunderland. Also joined the Club in 1949, building DX rxs for Sutton Coldfield, then building the first really good telestill unit in the Club. Then on to telecine, and bigger and better pulse generators. Fred, like Harold, is a professional Service engineer, and has been much snowed under by commercial business after the opening of the newer TV stations. Nevertheless, Fred has taken every opportunity to visit other BATCs and to swap ideas and schemes. Armed with his trusty small car, Fred made the journey down to Plymouth in 18 hrs, taking his telestill scanner. This uses a Mazda 30C2 5" CRT, 6H6 DC restorer, 6J5 inverter, 6AC7s in Sync Separator, Line and Frame T.Bs, 6SN7s as p-p amplifiers, and a 2.5kV EHT supply as per Inexpensive TV. The 931A video amp uses three 6AC7s into a 6SN7 cathode follower, with output positive for white. The pulse equipment employs a 100kc/s Xtal divided by MVs to 12.5kc/s. Line pulses formed by feeding 12.5 kc/s to flip-flop trigger cct; frame pulses derived from the mains. These go to another flip-flop, the output from which is used to open a gate cct and allow 8 25kc/s pulses to pass. Another flip-flop driven from the frame pulses gives a rectangular blanking pulse of approx 15 lines duration. Line and frame pulses are mixed and clipped, and output of sync and blanking is via cathode followers. The video/sync mixer consists of two 6F32s. The first has video on G1, with DC clamp, and blanking (frame only) on G3. Variable bais on G1, output to 6AC7 inverter. Second 6F32 similar, with output from 6AC7 on G1. Mixed sync on G3; another 6AC7 inverter and 6J5 cathode follower completes the unit. About 30V signal is available, again positive for white. The RF section consists of an SCR522 driving a QQV06/40 to about20 watts. Some 9 watts of RF are produced, being modulated by screen mod of the PA with a 6AG7. The Sunderland antenna consists of two vertical corner reflectors topped by a unipole, but for the Plymouth tests 6 element Yagis were used. Definition over the 3 mile path was around 2 Mc/s, although there was much modulator trouble. Back home, Fred is now trying out tests with G3ACK at Blyth, 18 miles away.

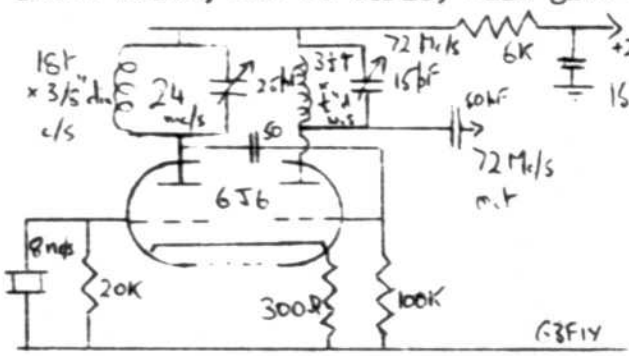
Well, that is the story. These two started from scratch, built the TV equipment, then did the RF side, then paid the fee..... 3 yrs work!!

SEVENTY CENTIMETRE TOPICS, or HOW by M.Barlow, G3CVO.

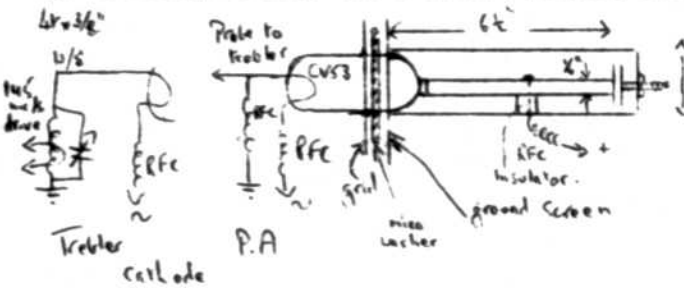
In the last edition, a simple 70cm converter was described, and this month some notes on 70 cm transmitters for TV may be of interest. These notes are the result of much trial and error by G3CVO, and much good advice from the 70 cm Sound gang, especially G2DD, 6YP and 3GBO.

The first point is that since we eventually wish to modulate the carrier with vision, there is not much point in finishing up with a multiplier stage, since it will be nearly impossible to obtain good modulation from this. Now, the tubes available for 70 cm PAs are few; if you have a QQV06/40, you are well on the way, although this tube is unnecessarily large, and the new half brother to it, the QV03/20, would be more economical. An 832 makes a fair trebler, or a better doubler, but is not much good as a PA; it also eats the HT in no uncertain manner. Amongst the surplus tubes, a good bet is the CV53. This is a low power disc seal triode, and costs about 10/-. It has a much higher efficiency than the other tubes, but will only take about 9 watts in for about 6 or 7 watts out. It does this, though, at 300V 30 mA, which is quite a saving.

For drive, no doubt many people are using their 2m transmitters such as the SCR522. This may mean 200mA at 300V just for drive, and it also will mean that the 2m band will be blocked when operating on 70 cms. The circuit shown below, due to G3FIY, will give 1mA of drive into a Z77 or 6J6 stage doubling or trebling from 72 mc/s, from a 6 or 8 Mc/s Xtal. In all cases it will be better to finish up at 210 Mc/s, and then double to 70 cms. Drive is harder to obtain the higher in freq we go. However, a CV53 will comfortably double or treble to give sufficient drive to a further CV53 as a PA.



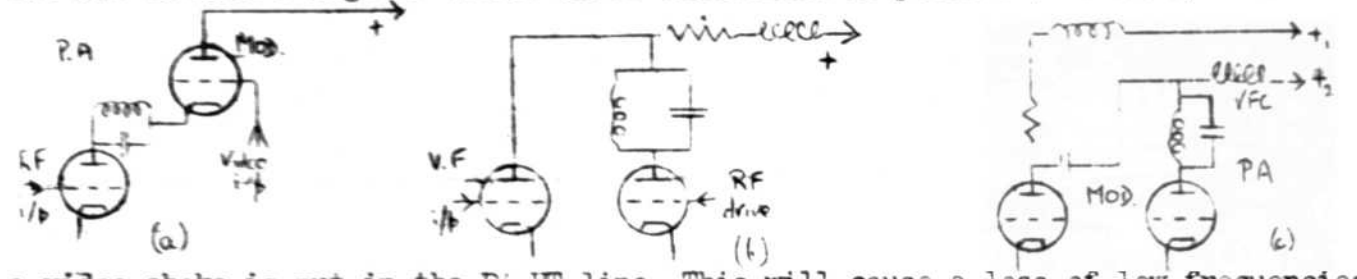
To build these CV53 units is quite simple; two identical units are required. Either coaxial lines, a trough or a flat plate arrangement can be used. The grid is grounded through a large condenser made by cutting a hole in a metal screen and using an insulating mica washer. The anode line is a half-wavelength long, electrically, and has a tuning condenser built in at the end remote from the tube. Z_o for the line equals the reactance of the tube capacity at 420 Mc/s. Drive on 145 or 210 Mc/s is applied via a small tuned circuit in the cathode circuit. 420Mc/s drive is passed to the PA by a direct probe into the multiplier plate circuit, with an RFC to ground. The following figures were measured on this unit: Trebler: I_g 4 mA, R_g 5K, E_a 300V I_a 10mA no drive, 16 mA dipping to 10 mA with drive. PA I_g 10mA, R_g 2.2K, E_a 300V, I_a 35mA dipping to 15mA. If a flat line is used, this should be the same length, but made of ½" wide strip about ¼" above the chassis.



Another favourite type of tube is the 8012. GI3FWF/T runs a pair in p-p at 25 watts input driven from an 832 trebler. The snag is that as these tubes are triodes and are grounded grid, they take a lot of driving. The coupling of the 832 tank circuit into the 8012 cathode must be very carefully adjusted. RCA suggest a 6.9K grid resistor and as much drive as possible; running the 832 as a doubler would undoubtedly help. Using just one 8012 in the PA is not much of an improvement,

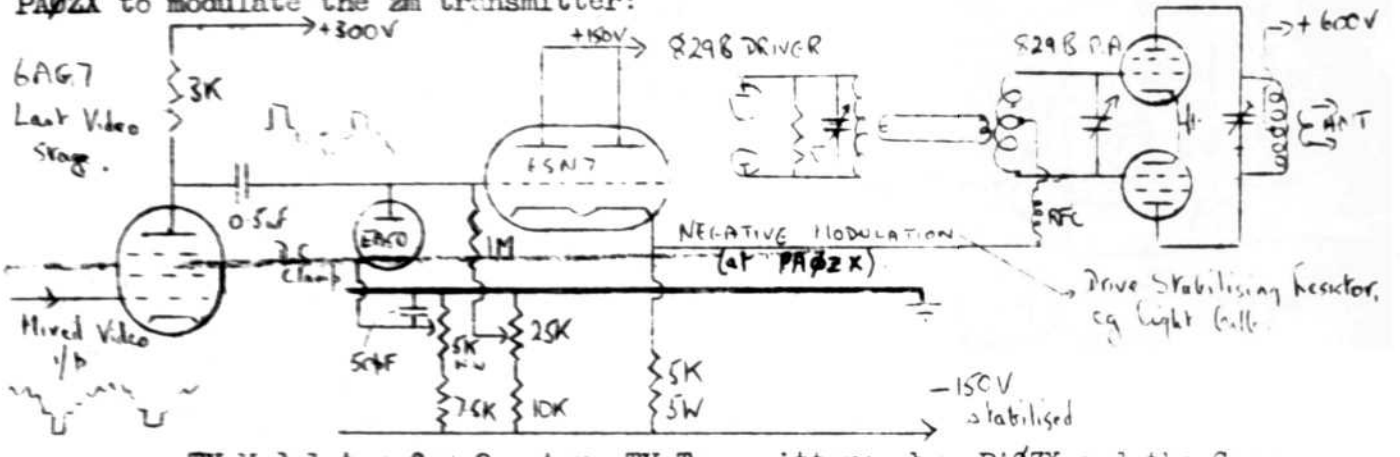
as the plumbing still loses most of the drive en route. If any member has any luck here, please write in with details! The 8012 has not been tried as a grid driven grounded cathode PA.

MODULATION: I've had a lot of mail on this subject, so let's review the situation. Firstly, unless we have that QQV06/40, there is not enough RF energy to spare to allow for inefficient systems of modulation. For the sake of argument, consider the case of a triode PA, so that modifications such as screen or suppressor modulation are left out. Plate modulation will be the most efficient, but how is it to be produced? A series tube, as in Fig a, needs a separate heater supply; parallel connection of modulator and PA overcomes this, but now we need a high HT value. An AC connection is possible, as in c, where



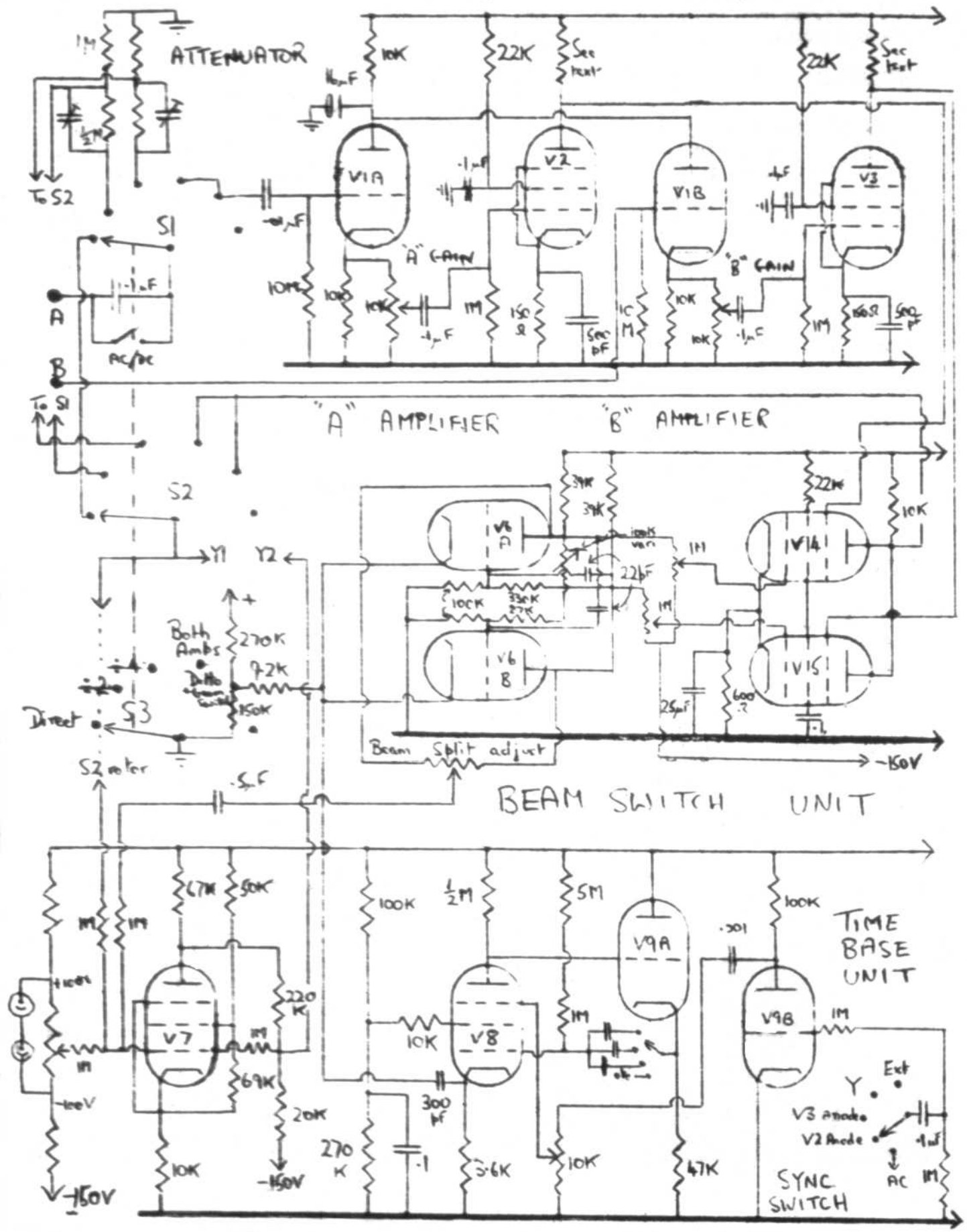
a video choke is put in the PA HT line. This will cause a loss of low frequencies, however. Remember too that any of these plate modulators have to supply half the power (at video freqs) that the PA would normally take under cw conditions.

How about grid modulation? Trouble here is the low efficiency, only about 33% even at low transmitting frequencies. Since so little power is needed, from other aspects this system is quite good. Here is the arrangement used by PAØZX to modulate the 2m transmitter:



TV Modulator for 2 meter TV Transmitter; by PAØZX and the Gang.

On 70 cms, however, another factor becomes important. At this frequency, the transit time of the electrons in the tube becomes an appreciable fraction of a cycle, so that the grid and anode are no longer 180° out of phase. For this reason, it is impossible to obtain 100% modulation under normal conditions. It is quite permissible in fact to modulate a 25 watt transmitter with 100 watts of modulation without causing overmodulation. Conversely, in order to obtain a high percentage of modulation without using an excessively large modulator, it is necessary to give the PA both grid and plate modulation, in phase. This principle is employed, of course, in the SCR522, where the modulation is applied to plate and screen of the PA and to the plate of the driver stage. Something along these lines will be the answer to 70 cm PA and modulator troubles, and further experiments are being conducted by several BATCs. If you find a good method, please write in very quickly, as many people are held up with modulator trouble.


ATTENUATOR
To S2
S1
A
B
AC/DC
To S1
"A" AMPLIFIER
"B" AMPLIFIER
"A" GAIN
"B" GAIN
V1A
V2
V1B
V3
S2
Y1
Y2
S3
Direct
Both Amps
S2 rotor
V6 A
V6 B
V14
V15
Beam Split adjust
-150V
BEAM SWITCH UNIT
V7
V8
V9A
V9B
TIME BASE UNIT
Ext
Y
V3 Anode
V2 Anode
AC
SYNC SWITCH
+100V
-100V
+150V
-150V

AN ADVANCED OSCILLOSCOPE DESIGNED FOR THE TV AMATEUR

By Tony Sale.

The circuit shows a foundation instrument capable of being improved upon at a later date, but which provides most of the major facilities required by the TV transmitter as it stands. It possesses a beam switch, with individual Y amplifiers and calibrated Y shift control. The whole unit was designed to fit into a radar unit containing a 5CP1 CRT. All tube supplies, etc, will fit into this case without the need for miniature components; naturally, the layout will be a matter of personal taste, so let us consider the circuit in detail.

Normal input is on the "A" terminal, via the AC/DC switch, to S1. Taps on this switch pass the input either direct to the Y1 plate, or through the attenuators. The values of the R and C components here must be found by trial and error, the figures given being a guide; the frequency response should be good up to 3 Mc/s at least. Other switch taps pass the input to the "A" amplifier; this is identical to the "B" amplifier, which has a separate input marked "B". Both amplifiers consist of a cathode follower input stage ($\frac{1}{2}$6SN7) feeding a 6AC7 video amplifier stage. The anode loads of these must be compensated in normal video amp manner; 3.9K and 100mH will do nicely, or if HF response is not considered important, a higher value resistor, say 10K, can be used alone.

A Sync amplifier V9B ($\frac{1}{2}$6SN7) precedes the Phantastron time base. For those not familiar with this circuit, it operates in a similar manner to a transitron-ron, but the action of the "anode catching" tube V9A is to give such a fast flyback time that the return trace is quite invisible even at very low trace speeds. Part of the output is applied to the flip-flop V6A-B. Although it may not appear so from the diagram, this is a straightforward circuit giving a pulse out at each anode alternately from a pulse input from the phantastron. The 100K vari adjusts the pulse lengths to be equal, and two 1M varis feed the pulses into the beam switching tubes V4 and V5. "A" and "B" inputs are fed to the suppressor grids, but G1 and G3 may be interchanged, depending on whether the Y amplification is sufficient. With a large pulse input, the reverse connections can be used, giving greater all round Y sensitivity. Choose which you will. The anode load can again be compensated for HF. Output from the beam switch is taken to another bank of the main switch (S2). Note that the cathode return of V6 is only made in the "Beam Switch On" position, the 150K resistor otherwise cutting the tube off.

V7 is an anode follower mixer stage, providing complete mixing with freedom from crosstalk. One input is the DC shift from the stabilised potentiometer across the HT-Bias line; this control can be calibrated as will be shown later. An AC shift voltage is applied from V6 to give a displacement to the two beams. The main input comes from S2.

No values have been given for the TB condensers, as these will depend on the ranges required. Sync can be obtained from A, B, Y, Ext or 6V A.C sources. Further modifications and details of the PSU will follow; one useful modification is a trace expansion (i.e X amplification over a limited portion of the trace) circuit, with provision for delayed time base triggering. Further details follow.

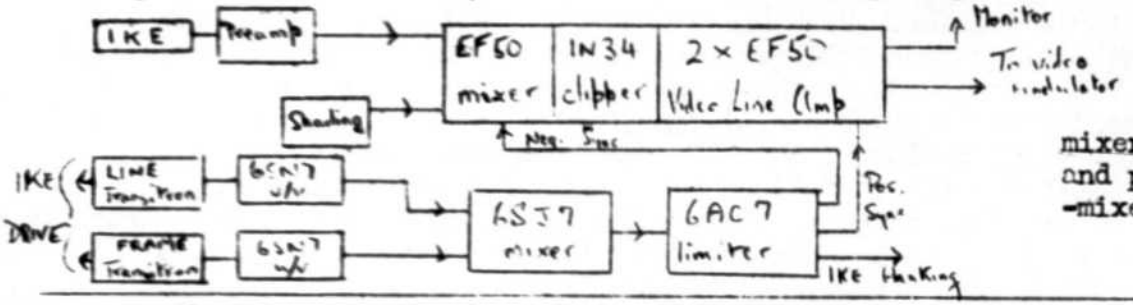
AHOY! May we remind new members that the magazine was started originally to save on correspondence, and that delays on non-urgent matter may be considerable. This applies particularly to subscription receipts, which are normally sent out with the next edition of the magazine. If you do not hear anything, assume that everything is all right; if the magazine does not arrive, though, write again..... Particular apologies this time due to the incidence of exams. SAEs are useful, too!

MORE 5527 CIRCUITS

by L.FOREMAN PAØVT, Winschoten.

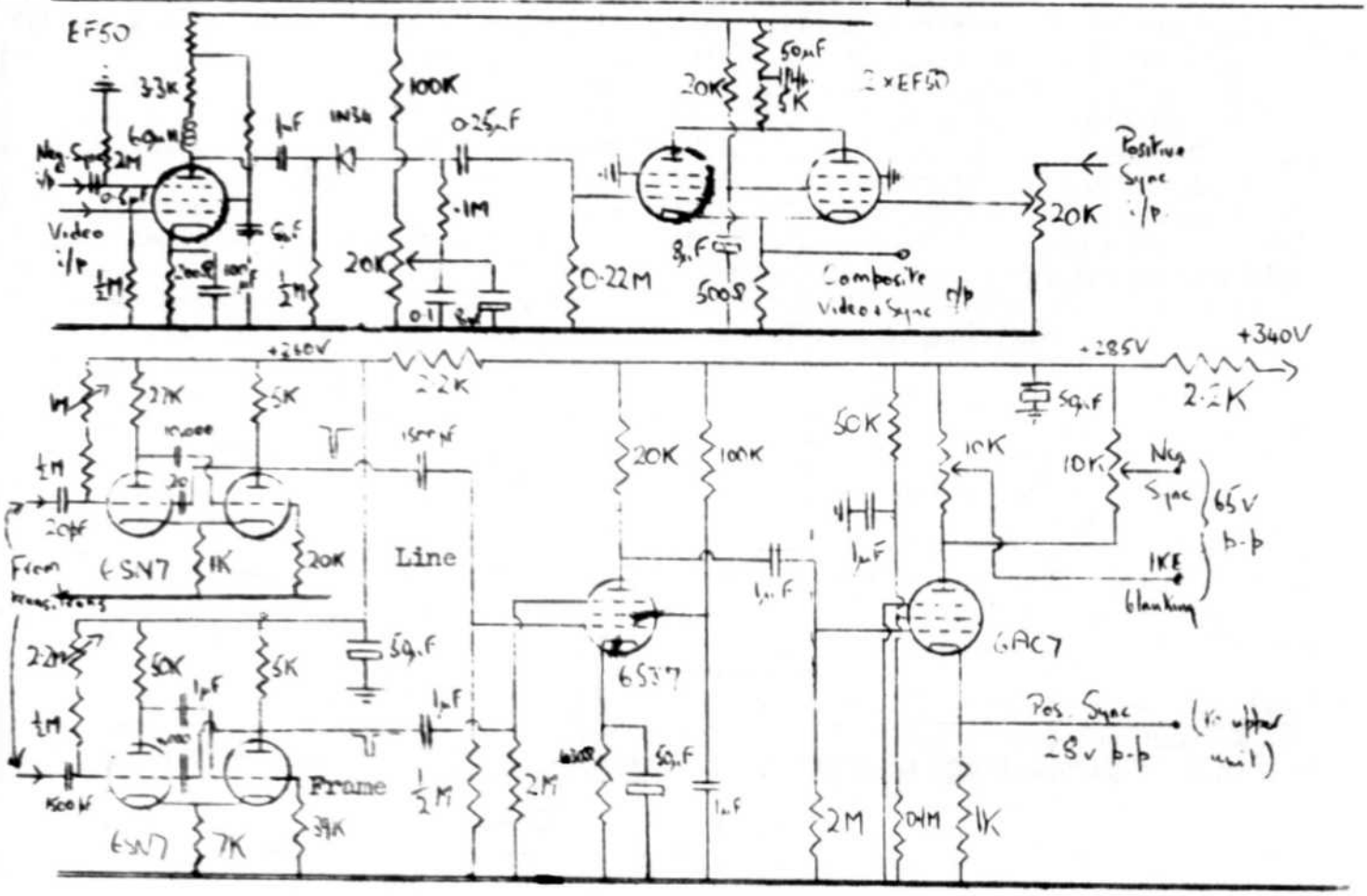
At the Groningen TV station, a very simple set-up is employed. There is no complicated system of sync and blanking, the same pulses being used for both purposes. This causes occasional loss of synchronisation at the top of the picture on some receivers, since both sync and blanking pulses start simultaneously, but this is not so serious as to cause worry.

Two transitrons supply deflection voltages to the 5527 and a 3BP1 monitor. The screen pulses obtained at flyback are used to trigger two univibrators giving an adjustable sync/blanking pulse. This is used to blank the 5527 and as sync is passed to the video/sync mixer, etc. This large negative sync input pushes up the vision signal during flyback (when a spurious signal is generated in the camera) to a level where it can be clipped by the 1N34. The sync is again injected in the final stage (2 x EF50s) with adjustable amplitude, so that a correct sync to video level is maintained. Moreover, should the video signal become too large, it will not penetrate into the sync level. The block diagram gives the idea.



Left: Block diagram

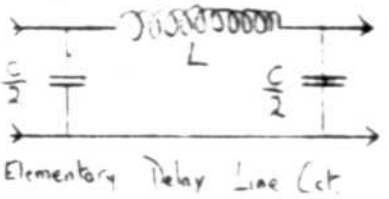
Below: Ccts of mixer-clipper-line amp and pulse generators--mixer units.



SIMPLE CIRCUITS DEPARTMENT Contd.

The circuits so far given in this series concerning Blanking Pulses have all utilised a sawtooth giving a variable trigger voltage. This is not always the best manner of doing it, especially with interlaced systems, since this means triggering to an accuracy of $\frac{1}{2}\mu$Sec with a sloping edge, i.e one part in two million. Since the pulse frequencies are constant, it is possible to introduce a delay between the start of the blanking pulse and the start of the sync pulse by using an artificial delay line.

Briefly, the circuit shown will introduce a delay depending on the constants of the circuit, so let's delve into some simple maths. In designing L, C, and R, it must be remembered that the cut-off frequency of the network must be very much greater than the pulse frequency, or the HF components will be lost and a very poor, rounded pulse will be produced.



Elementary Delay Line Cct

If R = the iterative impedance of the delay line, we have
Delay time $T = \sqrt{LC}$, and $R = Z_0 = \sqrt{L/C}$.
Supposing we wish to have a $\frac{1}{2}\mu$S delay between blanking pulse start and sync pulse start; i.e $T = \frac{1}{2}\mu$S, or $1/T = 2$ Mc/s. The cut-off freq must be at least 10 Mc/s therefore. But cut-off freq $= 1/\pi\sqrt{LC}$ in the usual way.
Calling $\pi = 3$, we have:

$$10 \times 10^6 = 1/3\sqrt{LC}, \qquad \text{i.e } \sqrt{LC} = 10^{-7}/3 \ldots\ldots\ldots\ldots (i)$$

Now, for a line with n sections, $T = n\sqrt{LC}$,

$$\text{i.e} \quad n = \frac{\frac{1}{2} \times 10^{-6}}{\frac{10^{-7}}{3}} = 15/10 = 3/2 = \text{either 1 or 2 sections.}$$

Lets choose two sections;
$T = n\sqrt{LC}$; i.e $T^2 = n^2LC$ ..... (ii)
AIso, lets pick C to be, say, 50 pF; if this gives an impossible value for L, we must try again.
From equation (ii), we have

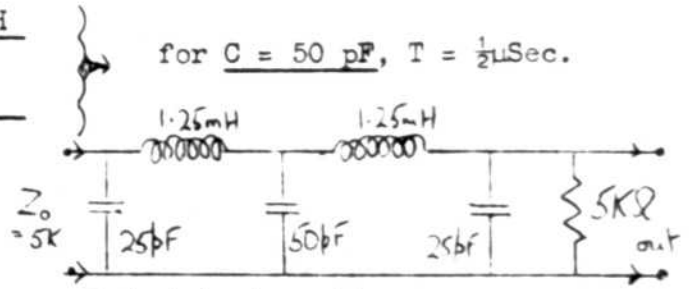
$$(\tfrac{1}{2} \times 10^{-6})^2 = 4(L \times 50 \times 10^{-12})$$

whence

$$\underline{L = 1.25 \text{ mH}}$$

$$Z_0 = \sqrt{L/C}, = \sqrt{\frac{1.25 \times 10^{-3}}{50 \times 10^{-12}}} = \underline{5{,}000 \text{ ohms}}$$

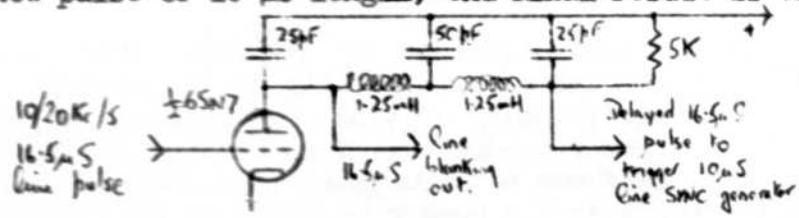
for $\underline{C = 50 \text{ pF}}$, $T = \frac{1}{2}\mu$Sec.

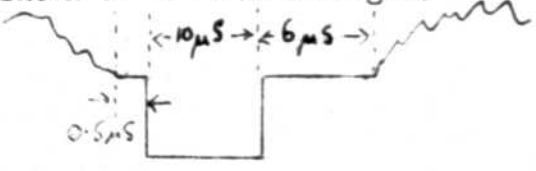


Final cct for $\frac{1}{2}\mu$S delay

The final circuit now looks like this:

At G3ETI, to give a practical example, the 20 kc/s master line osc generates a pulse 16.5 µS in length, which is used direct as Line blanking. The pulse is also applied to a tube with an R_a approx = to the Z_0 of the line; a 6SN7 has R_a = 7.7K which is near enough. The pulse is delayed $\frac{1}{2}$ µSec in the line, and is then used to trigger the line SYNC pulse generator, which generates a new pulse of 10 µS length; the final result is as shown at the bottom right.

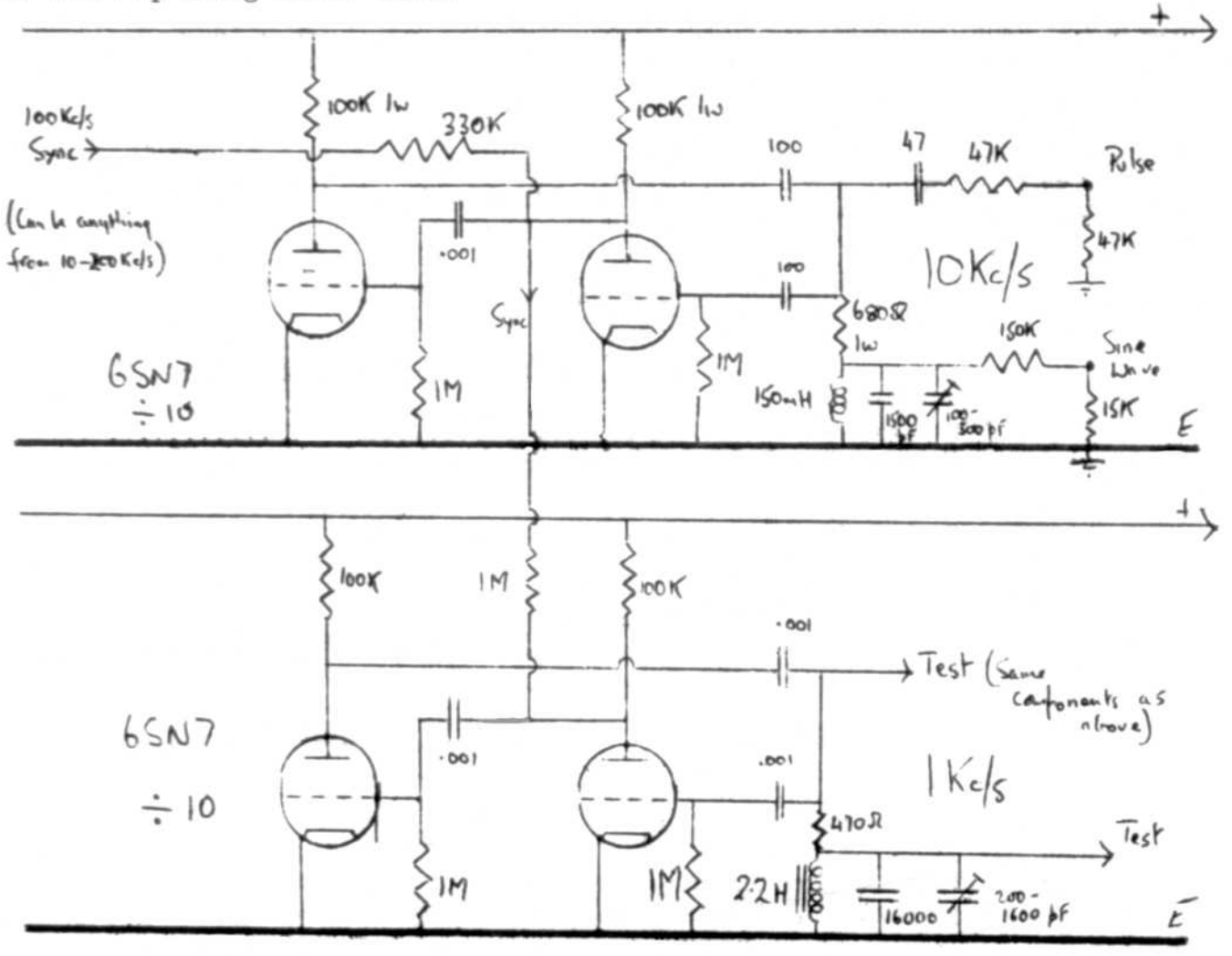




G3ETI.

HERE'S ANOTHER USEFUL ONE:

This divider was described in detail in the Proc. I.R.E for December 1951. Briefly, it is a simple sine-wave oscillator stabilised by means of a tuned circuit. If a resistor is placed in series with this circuit, then high order harmonics are produced. Experiment with various R's is called for to compromise between waveform and stability. Besides dividing by large integers in one go, the circuit can also be used for obtaining 50 cycles from 60 cycles, or vice versa. The values shown are for a 100 kc/s to 1 kc/s divider; this will maintain accurate frequency division for variations in HT from 30V to 350V, and for variations in LT from 2.8V to 12V. Monitor points for sine wave and pulse out are provided. Clearly a useful divider from 20 kc/s or 10 kc/s to 50 c/s can be built up along these lines.



A SIMPLE HIGH STABILITY FREQUENCY DIVIDER

The tuned circuit Q should be roughly equal to the division ratio required. Too great variations will affect either the stability or the ease of setting up. To adjust the unit, apply a small amount of sync, and look at the correct division ratio by means of the trimmer condensers. Now increase the sync injection until the oscillations cease. Half way between these two values is the optimum sync position. The unit will divide by any number up to 20 or so.

"WHAT THE OTHER BLOKE IS DOING.. ..."

Here is Ron Eadie, GM4JO, who now edits the Glasgow Radio Amateur Digest, and is trying to get the gang organised, paricularly with a view to receiving GI3FWF/T. Dave Hudspith still has auto QRM on the finance side, but continues to hope. Pete Parkin, after a long silence, announces that he now has a job involving 3 5527s and an Image Orthicon AND a 5" scanning tube by Cintel....plus several projection TV rxs for monitors! Some people have it all! Pete also has his Lane Mk iii Tape deck in operation and will be glad to swap tape with other members. Now here is an unusual one: R.H.Sheppard is i/c the instrument section on board a whaling HQ vessel; amongst his chores is the 16mm cine apparatus, so he is having a go at telecine first, although he has a 5527 standing by. Harry Wills, G2HKF has been ill for some time but is now back in the field; he wants to find a 3" blue tube from somewhere. (Tried GECs, om?). Tony Gilbey at Chelmsford is on the GPO TV interference tracing section! He has also recently done a VHF course at Stone, where he met Dave Bishop, of Weymouth, on a TV course.

Maurice Swift is now Chairman of the Derby and District Amateur Radio Soc., and in consequence has not had much time for TV. He has built up a 9" monitor in readiness, and is also looking for a short persistence scanning tube. Maurice is hoping to get things moving in the Derby area soon. Dalton Raby is still with BAOR, and is hoping to get active with TV in Germany. He sends in details of his 13 cm transmitter, and details will appear in CQ-TV later. From Rhos, Thomas A. Thomas writes in on behalf of two other chaps, and they are collecting bits and pieces to put N.Wales on the TV map. They are anxious to find 931As. etc CHEAP Any offers? R.Wilkes of Poulton le Fylde, Lancs could do with some help in his area. He is a professional TV service engineer. W.D.Wothington of Heald Green, Ches has 2 5FP7s and a 3FP7, so he feels he is well on the way. He is in the centre of some active UHF types, so we may see something from round there... Ted Hardy, G3GMZ of Tolworth, Surrey, is using an ACR10 scanner in parallel with a VCR97 monitor, using the video amp strip from the APQ9 70 cm transmitter chassis. He too wants a scanner tube cheap. Ted has a 70cm tx in working order all ready to go. Ian Wilson G3BHH of Durham has a 16" monitor under construction, but otherwise has been more on the reception side for the moment. He asks whether R.A.Gower was ever at Alex. Palace? John Watts, of Clevedon, Somerset, puts out a challenge that he has yet to see good pictures (as opposed to test patterns) produced on telestill apparatus by amateurs. George Short takes him up on this and offers to demonstrate. George is still stuck for a camera tube, but is hopeful. Ian Waters, BRS 17906, of Ely, has a very fine live camera unit employing an image iconoscope tube, 12" monitor, and rack mounted pulsing gear. The equipment runs at 300 lines 50 pps sequential, and results are very good. Ian hopes to be able to get neighbour G3FOQ to put out the vision on 70 cms.

"Pluff" Plowman, G3AST of Luton has been busy with a tape recorder - he is blessed with DC mains - but has been doing a few tests using a 12AT7 PA on 70 cms. He reminds you that an anode catching tube on a transitron will sharpen up that flyback time immensely. Bill White says that his wedding went off safely, but that he has not had much chance to do TV, of course. Good luck, Bill. William Howarth, G3AHF of Northwich, Ches, has most of the necessary gear now, and is also trying out 420 Mc/s in spite of being in a hollow. He will be down to help at the RSGB show. E.W.Fry, of Windsor, is building a 70 cm converter to receive G3CVO and the

London gang. Geoff Hill G3DFL and Ernie Foulds, of Birmingham are beginning work on a telestill unit. Jim Russell of Bournemouth now gets very good pictures from his 5527 equipment. Jim will be pleased to demonstrate.... Fred Rose stopped off in Worcester, where he met Jack Porter, who is very busy still with comml. TV. Fred is building up his 5527 camera, and Harold Jones G5ZT is building a telestill unit similar to Fred's! Harold wants a 931A BASE, and will swap 3 CV53s for one holder and network...Bargain! Johnny Hogarth, Blyth, G3ACK has a 70 cm converter ready for G3BLV/T.....Doug Wheele G3AKJ has been having trouble with the 80m rig for skeds, but work on the TV gear for the Dagenham show is now in top gear. Ian Macwhirter G3ETI Wirral has been busy building up telestill units for the firm, and also has an old iconoscope in action. Ian urgently wants to borrow a 5527 camera for a TV Society show in Manchester. All expenses paid, plus....Grant Dixon's 3 colour unit still has a few birdies in it, but Grant is now awaiting his camera tube. G3CVO has been busy with 70 cm equipment, but his camera tube is also in the way.

From overseas: Alain Decavel F9MN has now been called up, but before he went, he built a scope and 819 line receiver. Future work will be on a 35 mm film strip unit. Bengt Barkland of Sweden has now finished the job he was on, and after a holiday in Sicily will be back with TV again. Graham Goodger ZL2RP now has a 5FP7 and some help, and is on the way. He has a pair of 15E's ready. A series of articles has been appearing in one of the VK/ZL radio mags on amateur TV, so they are by no means out of things down there. He says that Comml TV has been shelved temporarily in N.Z. He adds that down under you can have a ham ticket, incl TV, BC receiver in every room and in the car for just 30/- per annum, and some people say this is too much! Oh, if only our GPO would wake up a bit....

New members this month:

Ernie Foulds	325 Bearwood Rd, Smethwick, Birmingham.
E.W.Fry	23 Kenton's Lane, Windsor, Berks.
Geoff Hill G3DFL	41 Park Rd, Bearwood, Smethwick, Birmingham.
J.W.Hogarth G3ACK	4 Fenwick Ave, Blyth, Northumberland, tel Blyth 517.
David B.Kerslake	73 High St, Barry, Glamorgan.
George Marchbank G8UB	"Four Ways", Llynclys, Via Oswestry.
R.H.Shepperd	c/o United Whalers Ltd, 41 Upper Grosvenor St, London W1.
Thos.A.Thomas	1, Pen-y-Wern, Rhos, Nr Wrexham, N.Wales.
Ian Waters BRS17906	14, St Mary's St, Ely. Tel Ely 2922.
R.Wilkes	26A, Breck Rd, Poulton-le-Fylde, Lancs.
W.D.Worthington	18, Queensway, Heald Green, Cheadle, Cheshire.
Ralph Hall	16, Greenford Rd, Harrow on the Hill, Middx.

Change of address: Graham Goodger ZL2RP 45a, Calabar Rd, Uiramar, Wgtn E4, N.Z. Dave Bishop 23 Lyndale Rd Weymouth. Sandy Wemyss, 5 New Close Gdns, Weymouth. Bernard Malandain, c/o 495 West End Ave, New York City, N.Y. George Short, Radio Services Ltd, East Heckington, Boston Lincs (no tel yet). 3502404 J/T White, Block 8, Room 4, R.R.S A.E.R.W, 32 M.U R.A.F, St Athan, Barry, Glamorgan. J.Watts Llanmore, Marson Rd, Clevedon, Somerset.

A hopeful note sounded by David Nolan; he may be able to help with 5527s. Write him direct if interested. David is trying to get an EI TV transmitting licence; his colour experiments are at a standstill pending the arrival of a cell with a panchromatic response. David suggests a magazine exchange; any offers pse? Mike Morrisey is now G3HUK, and he is building up a 5FP7 scanner. He is also working on a 70 cm link to neighbour G3HQB, but at the moment is on a course at Stone. That is the lot for this time, but keep writing. SAE for reply, please!