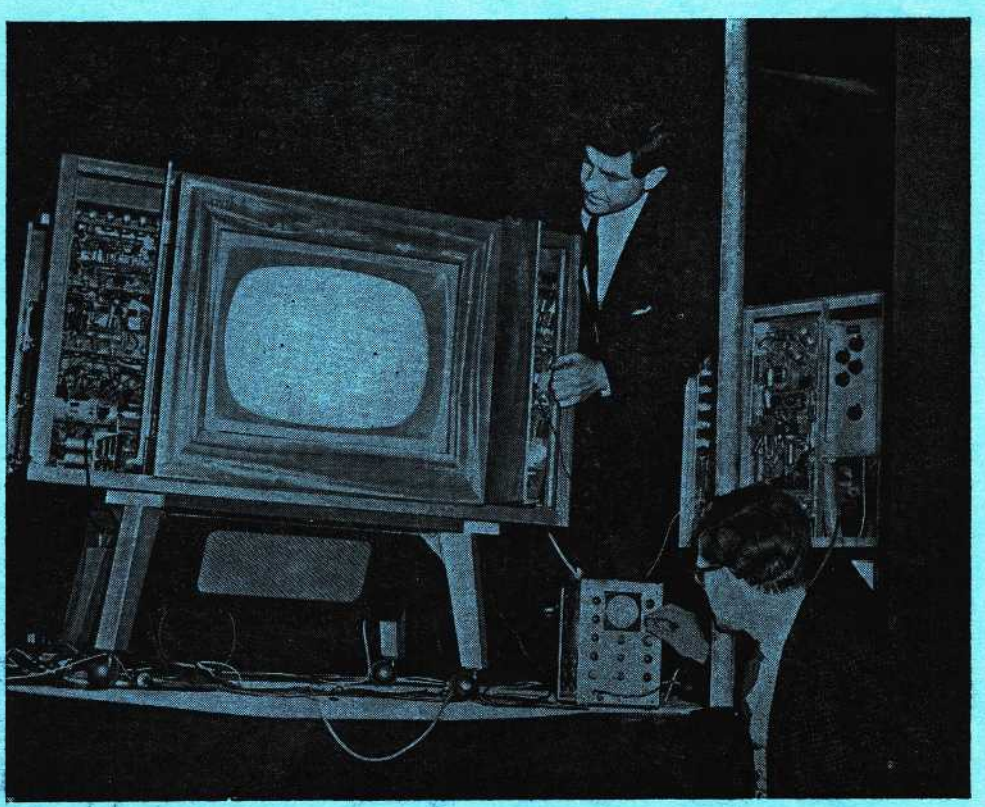

RADIO HOBBIES EXHIBITION 1961

CQ-TV

No. 46

CQ-TV, journal of the British Amateur Television Club.
Ten shillings per annum - $2.00 overseas members.

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Editor: J.E.Tanner, G3NDT/T

Editorial.

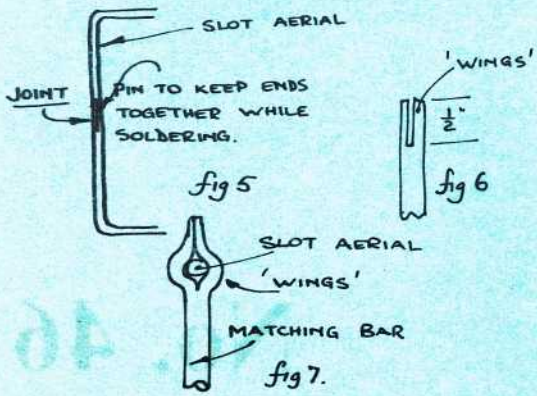
Unfortunately the Radio Hobbies Exhibition came at just the wrong time for CQ-TV, and the Colour camera took up the time originally planned for CQ-TV. However, here at last is CQ-TV 46, and 47 is already planned. The pulse generator article intended for this edition is still waiting for completion of the drawings, so this edition has been devoted to the transmission and reception side of amateur television in the 430 Mc/s band. The convertor described by Brian Smith, G3LGJ/T is the one used for reception of Jeremy Royle, G3WOX/T, over a path of 98 miles, although an amplifier was in use ahead of the convertor.

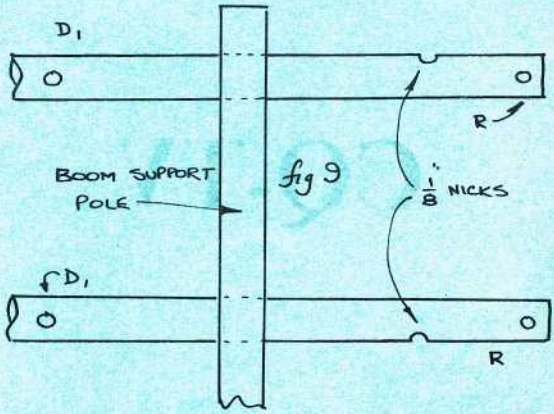
This year we will be holding another Convention. A questionaire was sent out to the committee suggesting the possibility of an alternative place to hold the Convention, but from the replies it is apparent that London is considered the best place. At the time of going to press the date is unknown, but this will be circulated as soon as possible.

Visitors to the Radio Hobbies Exhibition last November saw one of the most ambitious displays of the club's activities ever attempted. Colour T.V. was demonstrated, and here are some details of how we did it.

First of all the picture sources. Thanks to the most generous cooperation of the B.B.C. and the G.P.O. we were able to display N.T.S.C. type colour pictures - slides and films - on John Ware's two shadow mask monitors. One of John Ware's monitors has its own decoder, the other was fed via Mike Cox's decoder. When the B.B.C. pictures were not available local pictures were fed on to the two 21" colour monitors. These were produced from Bill Hipwell's colour bar generator, or from two monochrome sources via Bill Hipwell's master switching unit. This unit included a phase inverter, and by routing a positive going signal on one colour channel and a negative going signal on to the other channels colour captions were produced from a monochrome source. - the system to be described fully in a later edition - A colour slide scanner was planned, but this was not possible so John Tanner produced a field sequential colour camera. Pictures from this camera were displayed on Grant Dixon's 5" monitor and also, by means of a ring of three counter and three gating circuits, on the shadow mask monitors. For the visitor wanting to see something less ambitious Mike Cox had his flying spot scanner in operation, running on the pulses from his new transistorised pulse generator.

The Stand was designed by John Ware and engineered by Bill Hipwell in conjunction with Mike Cox, Max Brown, Don Reid, D.H.McLleland and John Tanner. Many other members gave invaluable assistance - in fact the show would never have come off without the splendid cooperation of all involved.





A 6/6 SLOT FOR 70

Julian Baldwin.

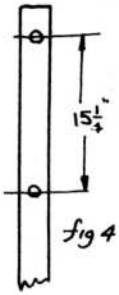


fig 4

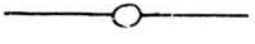


fig 1

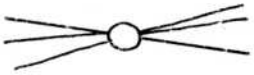


fig 2

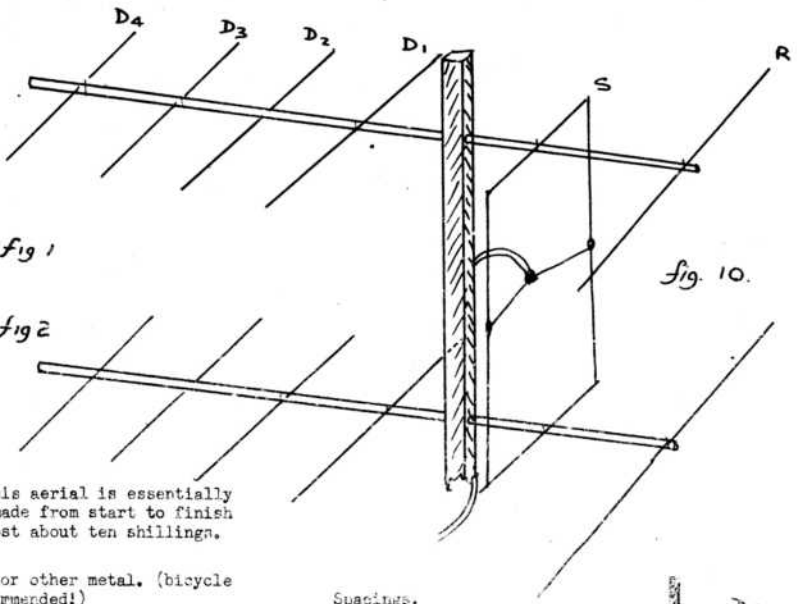


fig. 10.

The construction of this aerial is essentially very simple and it can be made from start to finish in a couple of evenings, cost about ten shillings.

Materials:
6 feet of 3/8" ali., brass or other metal. (bicycle mudguard stays highly recommended!)
2 lengths dowell, 1/2" x 2' 6"
1 length 1" x 1" deal - not less than 2' 6"
4' 6" of brass or copper tubing 1/8" dia.

Construction:
First prepare the booms for drilling. Smooth with sandpaper and draw a pencil line down the dowel; this will act as the drilling reference line. At 2" from one end mark a reference point - this is the position of the reflector. Mark off at the appropriate distances along the line the positions of the slot and directors. Check that the distance from the reflector to the fourth director is 27 5/16". Now drill the holes in the boom, taking care to drill all the holes at the same angle, otherwise the finished elements will look like fig. 2 instead of fig.1. Do not drill a hole for the slot. The parisitic elements should now be cut to size. Label each with its length and number, and insert each into its appropriate hole. If they are too tight enlarge the holes with a scrap piece of rod sharpened at the end and held in an electric drill - ensure that the drill goes through straight! Once the booms and elements have been completed the boom support should be drilled - fig. 4 - care should be taken to ensure that they are accurately drilled otherwise the booms may droop. A small screw will hold the booms.

To make the slot cut a length of the copper tubing 41 1/2" long and then starting from one end make marks at distances of 7 1/4", then 5 1/4", then 15 1/2", then 5 1/4", and finally another 7 1/4" to the other end. These marks represent the four cornersoof the slot, and the bends should be made at the points - bend around any convenient curved surface. Ensure that the two ends meet and then solder them together - fig. 5. Plenty of heat needed here to prevent dry joints. Cut two pieces of copper tubing 4 1/4" long and cut a slot 1/2" long in one end of each - fig.6. Bend the two 'wings' around the slot aerial sides -fig. 7.-, taking care to see that they are half way along the 15 1/2" sides. Once in position cut off any excess and solder as in fig. 8.

Cut a 1/8" deep nick for the slot - fig. 9., then remove one of the reflectors. Slide the slot on to the booms with the matching bars towards the boom support

Spacings.

R-S	3 3/4"
S-D1	3 1/16"
D1-D2	7"
D2-D3	6 3/4"
D3-D4	6 3/4"

Lengths:

R	13 5/16"
D1	12"
D2	12 13/16"
D3	11 5/8"
D4	11 3/8"

Matching Bars:
3 3/4" each.

Slot dimensions:
5 1/4" x 15 1/2"

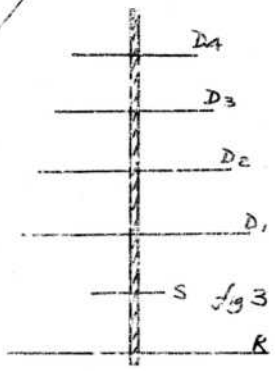
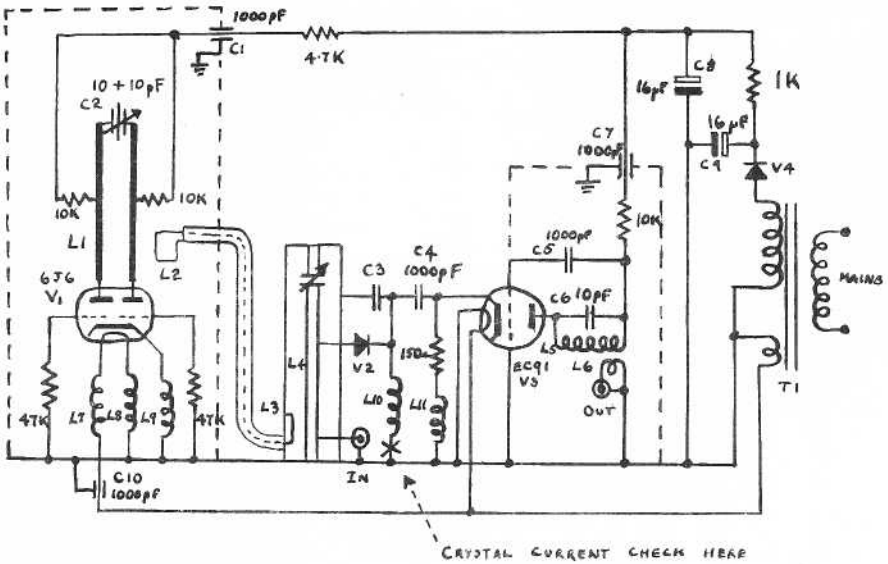


fig 3

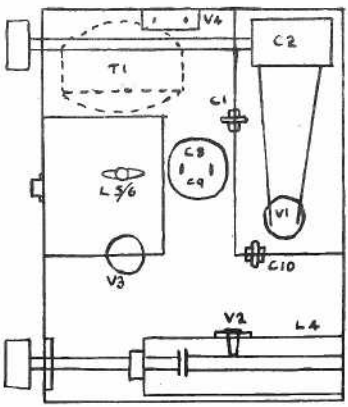
Concluded on page 10

A NEW CONVERTOR

by Brian Smith, G5LGJ/T



– FIG 1. –



– FIG 2. –

The converter to be described does not claim any circuit originallity, but has proved simple to build and operate, and should get you recieving on the band with minimum delay.

The mixer circuit uses a quarter wave trough with a silicon mixer diode (CV102, etc.). The local oscillator uses a 6J6 in a push-pull circuit tunable around 380 Mc/s. The IF output from the crystal mixer is taken to an EC91 GGT amplifier. This stage only has one tuned circuit and can easily be adjusted for an IF output on a channel 1, 2 or 3 TV set. The channel to be used should be selected to avoid possible interference from the local BBC TV station.

Construction The converter with its power supply can be conveniently accommodated on a standard 8" x 6" chassis in the arrangement shown in fig.2. The mixer trough is best made by bending from 18swg. brass or copper sheet, dimensions as in fig.3. The inner line is made from ¾ inch copper tube with a ½ inch disc soldered on one end. This line is located centrally in the trough being soldered to the

end of the trough. The tuning capacitor is another ½ inch disc soldered onto a 2BA bolt head. The bolt is threaded through a 2BA nut (or bush) soldered onto the other trough end plate. For tuning stability the 2BA bolt can also be passed through a threaded block on the chassis wall. The end ⅛ inch of a Belling Lee coax socket inner is soldered 2¼ inches up the mixer line to take the end of the mixer diode. The RF by-pass capacitor C3 is a ¼ inch diameter copper tab drilled ¼ inch hole to take the diode as a push fit, spaced from the trough wall by a 1/64 inch mica washer.

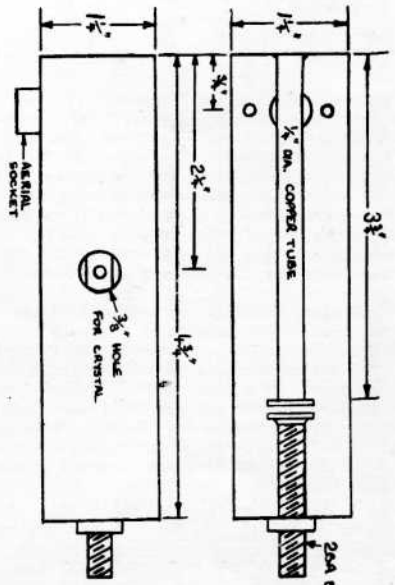
The oscillator lines and the EC91 anode cct. should both be independantly screened.

Testing Before putting the diode in circuit it is a good idea to check that the EC91 IF stage is working OK, because the diode could easily be damaged if V3 were unstable and oscillating . The TV reciever into which the converter is to be fed, should have plenty of sensitivity, because even though the converter does give some extra gain amateur TV signals are likely to be weaker than the professional signals. L5 should be peaked for a maximum on the vision channel to be used.

Turn C2 to half mesh and unscrew the mixer tuning one whole turn from the point at which it touches the mixer line. This should give a starting point for the 70cm. band. The mixer diode can be inserted and the diode current checked at the point shown on the circuit fig.1 With the aerial connected the mixer tuning can be peaked up on ignition, if any, and on tune will give a slight rise in noise. The crystal current, with the mixer on tune should be adjusted to 100uA - 400uA.

You are now ready to recieve amateur TV, or phone signals. Don't forget however, that your converter must have a respectable aerial feeding it, well clear of surrounding local obstructions for really good results.

Signal to noise ratio can be improved by the addition of an RF pre-amplifier such as the GEC A2521 valve. Another very worth while improvement can be made by reducing the bandwidth of the TV reciever's vision IF to about 1·5 Mc/s. The loss of definition is not noticed on very weak signals but will improve the signal strength.



– FIG 3. –

L1 Two 3¼ inch lengths of 14 swg copper wire, HT feed connected 2 inch from C2 end.
L2 1½ inch co-ax inner bent round to form a loop and connected to co-ax outer. Fitted in between L1 wires.
L3 ¼ inch long co-ax inner, end of which is connected to trough wall, standing off by ¼ inch.
L5 8 turns of 24 swg enamel copper close spaced on ⅛ inch diam. former.
L6 2 turns of 24 swg enamel copper wound on top of L5.
L7,L8,L9 8 turns of 26 swg enamel ¼ inch diam.
L10,L11 30 turns of 34 swg enamel ¼ inch diam.

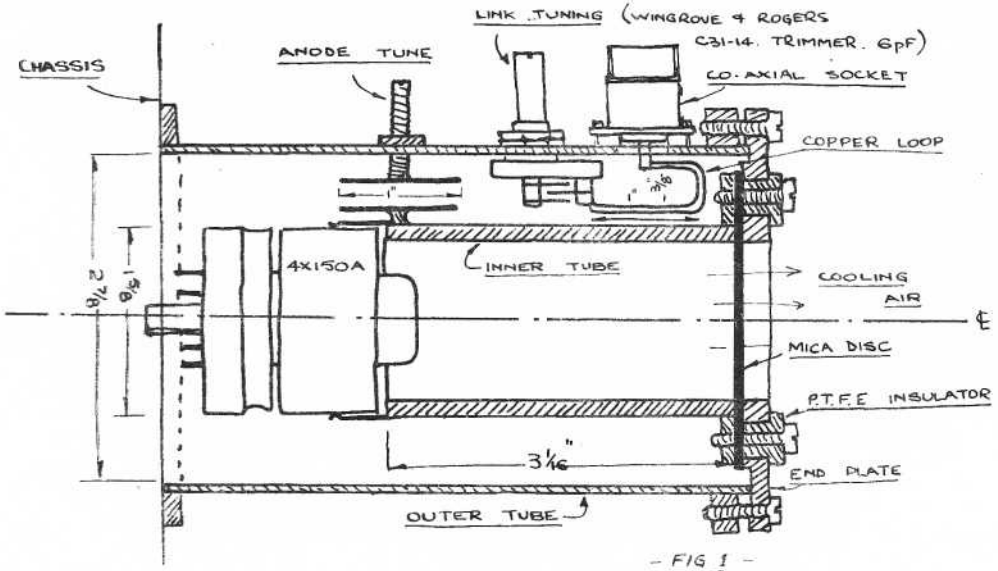
V2 CV102 or similar
V4 Contact cooled metal rectifier 30mA 250v.

T1 Convertor type mains transformer 230v input. 200v @ 25mA) output. 6.3v @ 1A)

FRONT COVER shows John Ware adjusting his 21" shadow mask monitor with Mike Cox bottom right helping. Radio Hobbies Exhibition 1961. photo Sport & General Press Agency.

POWER WITH YOUR TX

G3LYF/T



- FIG 1 -

Introduction

This 4X150a final amplifier is easily capable of running the maximum permitted input power under the British G.P.O. regulations. Where regulations permit input power may be increased by raising the anode and screen voltages. The maximum input power of this amplifier is 500 watts. The anode tank is an easily constructed coaxial cavity, whilst the grid circuit is a hybrid 'butterfly' with line matching. Five watts is sufficient input power to drive the amplifier but it is suggested that the driver should be made capable of delivering more than this owing to the power losses in coupling the driver to the grid circuit. The amplifier is grid modulated and requires a swing of approximately 100 volts for 100% modulation at 150 watts input.

The Anode Tank. -fig 1-

The anode tank is based on that described in an article entitled 'A Coaxial Tank Amplifier for 220 & 420 Mc/s' in QST, May 1951. It is constructed of two coaxial brass tubes. The Outside diameter of the inner one is $1\frac{3}{8}$ ins, and the inside diameter of the outer $2\frac{7}{8}$ ins. A $\frac{1}{8}$in thick brass ring is soldered to one end of the inner tube to form a flange $2\frac{1}{2}$ ins dia. To the other end of the inner tube are soldered berillium copper 'fingers' to make good contact with the valve anode. The length of the inner tube is 3 1/16 ins not including the 'fingers'.

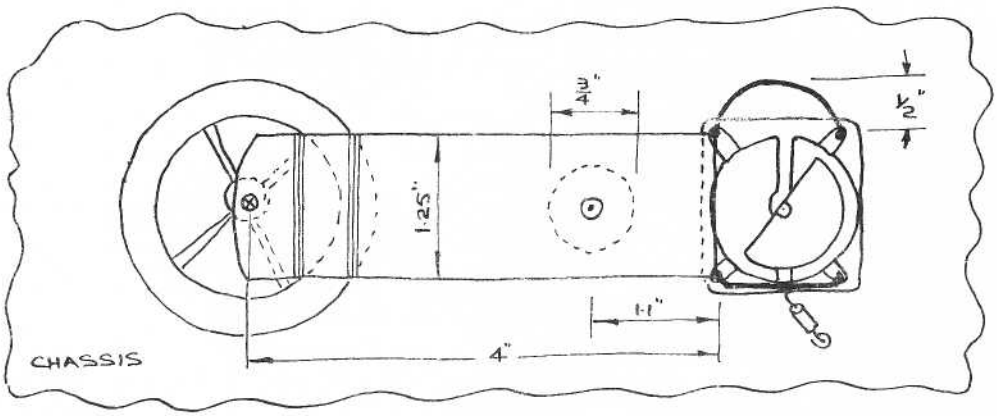
The outer tube has a flange soldered to each end such that the end plate may be screwed into place and the assembly fastened to the chassis. The length of the outer tube is about $4\frac{1}{2}$ ins and may be varied to suit the valveholder used. An Ediswan type VH88/802 is recommended as it has a built in screen decoupling capacitor of value 3000 to 3500 pF. The outer tube also carries the pick up loop and the tuning capacitors for the link and anode tank.

The end plate consists of a disc of brass drilled to screw to the outer tube flange with enlarged holes locating with holes in the inner tube flange. The mating surfaces of the end plate and inner tube flange should be rubbed down and polished until they are absolutely flat and scratch free. When assembled the fixing screws for the inner tube are insulated by P.T.F.E. or polythene bushes and a disc of mica 0.005 in to 0.01 in thick inserted between the polished faces.

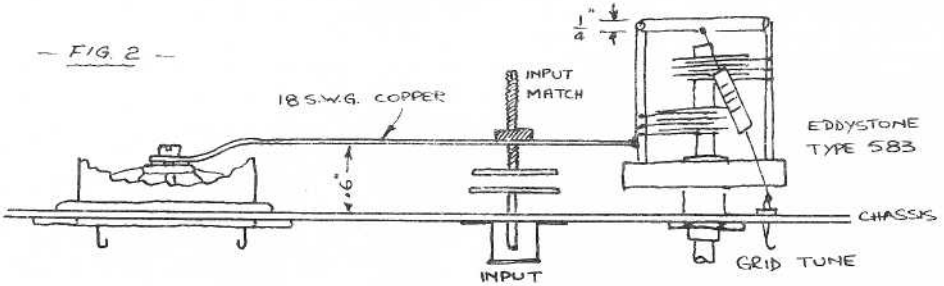
If care is taken in the construction of this tank circuit, especially the decoupling capacitor, high efficiency will result. The anode tuning capacitor consistes of two copper discs 1" dia. one soldered to the inner tube with its centre about $\frac{1}{8}$" from the anode end, and the other mounted opposite the first on a screw running through the outer tube wall. The pick up loop is 1/16" dia wire bent to a 'U' shape 1" long and 3/8" wide.

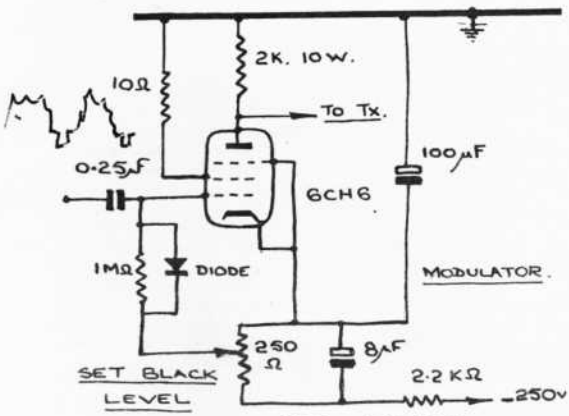
The Grid Circuit -fig 3- & fig 2 -
This consists of a 'Butterfly' resonator made from two strips of copper and an Eddystone capacitor type 583. This is matched to the input by means of a line. The line does not completely resonate to 432 Mc/s but has standing waves on it and serves to match the power input and resonator to the 4X150a grid. It is not the most efficient of circuits but appears to work fairly well. The input match is adjusted with slightly more input power than is normally required to give maximum grid current. Remember that the spindle of the capacitor will be 'hot' so watch out for R.F. burns and hand capacity effects. Once set this should not require readjustment provided the operating frequency is not altered too much. If the 'Butterfly' does not resonate properly its frequency range may be altered by changing the length of the copper strips, L4a & L4b. Increasing the length will decrease the frequency.

Setting up the amplifier.
Connect modulator input lead of the amplifier to a bias source of -30 volts. In order to avoid a change of bias due to grid current connect a 250 ohm 10 watt resistor across the supply . Now switch on and tune up the exciter stages. Adjust the exciter output so that about 10 watts of drive is fed to the P.A. input. Now tune the 'butterfly' capacitor, C2, for maximum grid current. If the grid current exceeds 10 mA reduce input power and peak again. Some adjustment of the exciter output tank tuning may also be required. Adjust C1 - mind the R.F. ! - for maximum grid current readjusting C2 and the exciter tank as necessary. When the maximum 4X150a grid current with minimum exciter power is achieved reduce exciter input until 1 mA or less grid current flows in the 4X150a. Anode and screen volts should now be applied to the P.A. which should be connected to a load or aerial presenting 50 ohms impedance. C3 should now be tuned in conjunction with C3 for maximum power output consistent with minimum



— FIG. 2 —





anode current. When correctly tuned the anode current should be about 190 mA at 800 volts, and the R.F. power output in the region of 60 watts. To assist the initial tuning and testing of the amplifier it is a good plan to build the R.F. 50 ohm load described by the author and E.C.Mitchell in CQ-TV 56. This load will just about dissipate the 60 watts if a good blast of cold air is blown on to the resistors.

Cooling.

Cooling air for the 4X150a may be blown into the anode cavity of the grid may be enclosed in a box and this pressurised by a blower, forcing the air the other way; this being the better arrangement. About three to four cubic feet per minute is all that is required at this power level, although an absolute minimum of 6 cu ft/min is required for the valve run near its maximum ratings. The pressure drop across the valve is about 0.6" water at 6 cu ft/min. (another possible method is to connect the air outlet of the cavity to the 'suck' end of a domestic vacuum cleaner!)

L1 10 turns 22 swg on ¼" Polystyrene
L2 18 turns 20 swg on ¼" Polystyrene
L3 4 turns 30 swg on ¼" Polystyrene
-all case wound.
L4a 1.6" x ¼" copper strip connected to tabs of C2 a & b
L4b 1.1" x ¼" copper strip connected to tabs of C2 a & b, L1 connected to its centre.
L5 1" x ⅜" loop, 16 swg wire - see anode tank drawing.

C1 ¾" copper disc - see grid circuit drawing
C2 a&b Eddystone type 583
C3 Wingrove & Rogers type C31-14 (6pF)
C4 See text
C5 1" dia copper discs.

Special Note: The 4X150A dissipates sufficient heater power alone to crack the glass-metal seals if not blown. Remember, heaters must never be energised without the air cooling system in operation.

Under test the prototype of this amplifier gave 50 watts of R.F. with 150 watts D.C. input when modulated with peak white composite video (pos. mod)

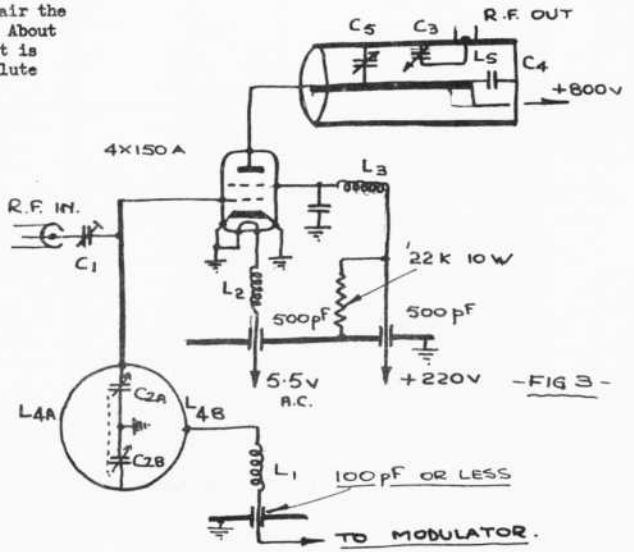
Modulator -fig 4-

This is simply required to develop 100 volts across the lowest possible impedance. The output impedance must be kept very low because grid current is drawn at peak white and too high an impedance would result in distortion. Approximately 5 volts of pre-stretched* signal is fed into the input. This is then sync bottom restored (or could be back porch clamped) to a reference voltage. This is varied to set black level.

* Sync & Peak White stretching, G5KOK/T, CQ-TV 56

Setting up.

Sync and peak white stretch controls on the unit preceeding the modulator o/p should be set for maximum sync stretch and minimum white stretch. Switch on. Adjust black level control for a carrier level of 8.8 watts (21 volts r.m.s. across 50 ohms). Now apply peak white and adjust peak white stretch to give 50 watts (50 volts r.m.s.) The settings should now be checked by feeding sawtooth comp. video and checking the linearity of the received signal.



-FIG 3-

What the other chap is doing

We start this time with some news from down under. Dennis Wheaton, VK2AWW/T of N.S.Wales has sent in a review of Australian activity: First of all the very sad news that Bill Brownbill -VK3BU passed away recently after a severe illness. Bill had organised a net on 7Mc/s at 1900 hours each Sunday to coordinate the activities of the dozen or so members actively interested in amateur television. Dennis sends the following list of amateurs known to him as being active: VK2CN - R.Prout, VK2ET - T.Elliot, VK3AAK - C.Rann, VK3ALG - F.Freeman, VK3ABK - D.Highway, VK3SE - S.Widgery, VK3AUX - G.Hughes, VK4GT - W.Heaton VK5AO - M.Lane, and VK6EC - Eric Cornelius. VK2AWW is building a Vidicon camera and eventually hopes to transmit on 288 Mc/s with about 40 Watts.

Max Benyon of Strathfield NSW has been kept busy by his work (design of microwave and mobile radio systems) but has nevertheless rebuilt his FSS to resolve 2·5 Mc/s, and has also improved his scope by adding a compensated attenuator. Warren Heaton VK4GT is working on a FSS. He spent a splendid holiday on Norfolk Island - how's this for an address :"Paradise Hotel, Norfolk Island, Pacific Ocean" ! He bought a 931A from the Club (sorry we have sold out now) and has also been sent a couple of the free scan coil assemblies for use with a 5FP7 (we still have some of the scan coils left).

Over to New Zealand next - Graham Goodger has sent a welcome letter. As he is very short of time, activity has been low. Harry Burton ZL2APC of Eastbourne, N.Z., now has his vidicon and coils, and is starting work on the camera. Rex Firman ZL3DY tells us that TV gear is rather scarce out there, though a 625 line service was recently started. He has built a receiver and can receive Christchurch (100 miles away) on occasions.

That concludes the news from Australia and New Zealand ; let's pass on some congratulations next. To Chris Edgcombe and John Deveson, now both B.A. (Cantab.) ; to Eddie Barrall, G2BCB, now A.M.Brit.I.R.E. ; to Harry Lowe, Sid Robinson and Bill Thacker, who have all passed the R.A.E. ; and to Roger Davey, who has passed the R.A.E. and the Morse test.

B.A. Robinson (Ontario) sends a reference : "Using TV Techniques in Astronomy" by J.Borgman in Electronics, May 8th, 1959. This is likely to interest new member D. Bloxham of Portsmouth, who is a member of the local Astronomical Society. B.A. Robinson has also been reading Wentworth's "Colour TV Engineering", which advises the use of the 10 stage photomultiplier type 6217 for the red channel of a colour scanner (price $72). M.Wild (Leeds) has been trying some "live" scanning, using a Philips projection CRT as the light source, and a 931A for pickup. Quite clear pictures were produced, though contrast was poor. He would be interested to hear from anyone else who has tried this system. Norman Gambles, who has now moved to Brentwood, reports that he is still battling away with scan circuits, pulse generators, lens systems, etc. Another Brentwood member is Alan Sherman, whose vidicon camera is well under construction ; he had some useful discussions at the Dagenham Town Show with John Tanner and Alwyn Stockley. The last named, G3EKE, has had pictures from his vidicon, and is now improving his CCU and monitor.

Grant Dixon has obtained pictures from his slow scan vidicon, early in July. Note that ordinary vidicons cannot be used ; this is a Westinghouse 7290, whose target is a deep crimson colour, unlike normal vidicons. Cop Macdonald, WA2BCW (Elmira, N.Y.) is also working with a slow scan vidicon, with 10 Kc/s dotting on the grid, which works very well ; grey scale reproduction

D. Hodges, G5MXW/T watches Ernie Foulds G5MXY/T operate the M.A.R.S. TV Group camera. This was at the Trentham Gardens rally. John Tanner was there too with his Vidicon camera.

is much better than it is with his scanner. He suggests that two standards might be chosen - one for radio transmission, and a wider band-width version for tape recording. Any comments on slow scan standards ? Gordon Sharpley G3LEE (Manchester) is one of the 12 who have received a slow scan licence ; he received pictures from G3MED on the 13th July. He

organised the BATC stand at the Manchester Electronics Exhibition in July, during which a number of new members were signed on.

John Jull G3MHZ/T has now left Cambridge and moved up to Manchester ; his camera and other gear should be following him soon. Harry Lowe is the new Hon. Sec. of the Cambridge group. John Deveson (Oxford) has had 2 Mc/s pictures from his vidicon, but has experienced some snags due to line scan pickup. It was good to hear from Marcos Huller of Buenos Aires ; he has been working with video amplifiers and sync pulse generators.

D.Penney wonders if any members are transmitting pictures in London south of his address in Chigwell, Essex ; his site had a view of London from Kingston-on-Thames to 3 miles west of Grays. J.M. Henshall (Stockport) is a new member, with a FSS under construction ; he is using 5FP7 scanner, 931A, three EF91 and a 12AU7. Rex Lakeman (High Wycombe) has little free time as his work takes him abroad, especially to the near, middle and far East. He saw a Japanese portable transistorised vidicon camera in Singapore, selling at just over £100. It was for 405 or 625 lines, output plugged straight into a domestic TV set, and Rex reports that the picture quality was very good. Sgt. Hiles out in Singapore is building a 5FP7 scanner, though he finds it difficult to buy components. Eric Lincoln (Sunderland) paid a visit to Cambridge recently, saw the group equipment there, and has returned, full of enthusiasm. Dave Jones G3LYF/T (Totnes) now lives in a deep valley, with no UHF view apart from Echo I ! He has been busy building a power supply, an oscilloscope, and experimenting with a slow scan monitor.

F.A. Boivin (Montreal) has been away from home for 14 months, so is catching up in his CQ-TV reading. Brian Smith G3LGJ/T (Birmingham) has received pictures from Jeremy Royle G3NOX/T (monoscope and test card) - over a path length of 98 miles ! Although there was much QSB, the call sign was easily readable. He has also received some good FSS pictures from Ernie Foulds G3MXW/T (Smethwick), resolving the 1·5 Mc/s bars on test card C. G3LGJ/T has rigged up a pulse generator which gives him just about everything (including a headache !), and has transmitted to G3KBA/T and G3MXY/T. Ernie Foulds' transmitter and the MARS vidicon were used at a meeting in the Midlands, and caused much interest in amateur television in Coventry. There was not even a single frame slip or line tear throughout the demonstration, which reflects great credit on all concerned. G3LGJ/T has started work on his camera, but in the meantime, George Flanner has kindly offered to loan his camera.

A.C. Bevington G5KS (Langley,Birmingham) is gradually getting over the effects of a fire in Sept. 1960, and is building up a FSS and a 5527 camera, as well as a 430Mc/s transmitter ; he would like to purchase components. Deryck Aldridge is delighted to have obtained the first pictures out of his FSS, which utilizes some 60 valves in all. He fiddled the high peaker, and put a clamp just before the mixer to improve the quality, and finds that the grain of the 5FP7 screen limits the resolving power of the system. The scanner is built in 3 units for a start, to find out the optimum positioning of the optical components, but it will be rebuilt in one unit eventually. Deryck avoids the use of "L"s as he can't measure them, and sticks to"R" and "C" with lots of feedback for response shaping. Out of the total of 60 odd valves, he has had two failures so far - both 12AT7's, with one half of the heater failing. J.A. Hedges G3MMQ (Greenford) has a 5FP7 scanner in operation with reasonable results , but a few snags have to be ironed out. He recommends the R.F. distribution unit by G3MEO/T - says it works fine !

Bill Hipwell and D. McClelland report good news with their 21" colour receiver ; the early troubles with lack of purity have been overcome, and a raster of even hue can now be scanned.

Rene Monteil F8UM has published his article on an 819 line version of the Bill Still scanner in "le Haut-Parleur" No. 1037. His advertisement for BATC at the end of the article has brought in quite a number of enquiries. F8UM reports that F8CN in Paris is also building a vidicon camera. Ian Gurney of Banbury built his own 30 line system, before joining the Club.

Michael Bues G3OPB/T (Epsom Downs) has been in touch with G5DT, and G3OUO/T came in from Wembley - there is a chance of getting video signals over. G3GDR also came in from St. Albans ; the 28 mile path is a good one. G3OPB/T is working with Stan Crouch G3MSN/T (Tolworth) ; they are putting out the first video transmission in Surrey. Stan is putting up a 20' pole for his aerial, and his gear is being installed in the garden shed. Eddie Barrell G2BCB of Colchester has nearly finished his sync pulse generator, though he is rather short of spare time ; he knows Simon Freeman G3LQR/T (Dedham), and they hope to exchange video signals before long.

We seem to be short of news from the U.S.A. this time, so here is some to complete the columns : Jack Schmermund W8VSY (West Milton, Ohio) has a 432 Mc/s transmitter on the air, using a FSS picture source. Although there isn't much activity in his town, several of his friends in Columbus, 80 miles away, are building up some circuits from CQ-TV. George Russell, W2SJU, (Metuchen, N.J.) reports on the New York Convention of the I.R.E. One of the interesting new devices on show was the electrostatic deflection vidicon - no more scan coils ! However, the cost puts them out of reach of the amateur at present, and the miniature vidicons, using 8 mm cine lenses, may eventually prove the cheapest system for the amateur.

Well, that's all for this time. Do please keep your news rolling in, whether you live in Britain or abroad. 73 for now.

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NEW MEMBERS

F.R.Armstrong, G3NQQ/T, 390 Bromsgrove Road, Hunnington, Birmingham.
E.J.C.Baldwin, 7 Olbury Court Road, Fishponds, Bristol.
M.S.Batt, 123 Manor Road, Fishponds, Bristol.
S.Baxter, VE6KE, 10643 - 59 Street, Edmonton, Alberta, Canada.
C.H.Bedwell, 33A, Station Road, New Barnet, Herts.
D.A.Bloxham, 14 Highland Road, Southsea, Portsmouth.
H.S.Chapman, G3NZL, 20 Wanlip Road, Syston, Leics.
T.Colaluca, 26 Stapenhill Road, Burton-on-Trent, Staffs.
T.J.Cooper, c/o Bonnymount Farm, Syston Hill, Warmley, Bristol.
M.B.Evans, 82 Doveleys Road, Salford, 6, Lancs.
D.L.Fenelly, 3 Montgomery Road, Chiswick, London, W.4.
C.J.Fox, G3HII, 69 Feltwood Road, West Derby, Liverpool, 12.
G.H.Francis, W8FPW, 1308 Pine Street, Marquette, Michigan, U.S.A.
B.N.Gensler, Barry Electronics Corp., 512 Broadway, New York 12, N.Y., U.S.A.
G.E. Goodwin, G3MNQ, "Lynton", Bunny Hill, Costock, near Loughborough, Leics.
I.K.Gurney, "Como", Denham Lane, Chalfont St.Peter, Bucks.
P.L.Hanley, 46 Heathcote Avenue, Hatfield, Herts.
J.M.Henshall, 14 King's Drive, Heaton Moor, Stockport, Cheshire.
D.C.Hodges, G3MXY/T, 154 Galton Road, Smethwick, 41, Staffs.
W.C.Holley, G5TN, "Waverley", Worlebury Hill Road, Weston-super-Mare, Somerset.
J.E.Hunter, G6HU, 63 Aintree Crescent, Barkingside, Essex.
B.N. Love, 61 Southam Road, Hall Green, Birmingham, 28.
H.G. Manchip, ZS1KC, 152 Kommetje Road, Fish Hoek, Cape Town, South Africa.
M.G. Nutt, Highbury, Cuckfield, Sussex.
D.J. Penny, 175 Burrow Road, Chigwell, Essex.
R.Perry, G3OAC/T, 438 Victoria Road, Hanley, Stoke-on-Trent, Staffs.
A.R.Preedy, G3LNP, 24 Cotham Road, Bristol.
A.Richards, 30 Well Place, Cwmbach, Aberdare, Glamorgan, South Wales.
B.C.Terrell, C Troop, 2 Squadron, 8th Royal Signals Regiment, Catterick Camp, Yorks.
D.W.Thompson, G3OXG/T, 94 Archers Way, Letchworth, Herts.
G.E. Thompson, 13 Roselarge Gardens, Henbury, Bristol, 9.
J.Tiffen, 37 Stafford Road, Ellesmere Park, Eccles, Lancs.
G.Turchi, Via C. Arletti 20, Carpi (Modena), Italy.
J.Will, G3OTA, 161 Preston New Road, Blackburn, Lancs.

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CHANGES OF ADDRESS

A.S.Coombes, G3OLV, 113 Blenheim Gardens, Wallington, Surrey.
P.F.Cone, Box 283, Wakefield, Massachusetts, U.S.A.
H.A.Cox, 186 Frimley Road, Camberley, Surrey.
N.Gambles, 71 Westbury Road, Brentwood, Essex.
M.W.Heffernan, Blue Bridge Farm, Halstead, Essex.
N.Riggs, 42 Birkbeck Avenue, Greenford, Middlesex.
P.A.Sharp, G3NNH, 8 Broadfield Road, Folkestone, Kent.
Prof.H.de Waard, PAØZX, Werfstraat 8, Groningen, Netherlands.

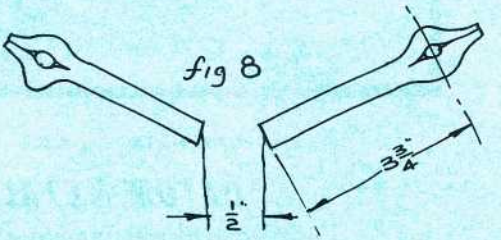
For Sale.
Miniature C.P.S. industrial camera channel - without lenses or tube. Contact D.S.Reid. 21, Silverdale, Sydenham, S.E.26 price £7-10-0

A selection of valves, tubes, two 931a cells and a 5FP7. More details from T. Luxford, G3MUB/T 90, Endlebury Road, Chingford, London E.4.

Amateur Television on B.B.C. again

On December 13th the B.B.C. West Region Magazine programme 'View' featured amateur television. Outside Broadcast cameras visited John Tanner's home in Bristol - during the programme live pictures were transmitted from John Tanner's Image Orthicon camera, although partial failure of the dynode volts just before going on the air took some of the sparkle out of the pictures. Pictures were transmitted over the air on 436 Mc/s to Broadcasting House as well as being sent along the G.P.O. line with the B.B.C. pictures. Podney Staines, another Bristol club member, helped out as Cameraman - a 16mm recording was made of the item, which lasted about four minutes and this is available on loan from John Tanner.

pole. Bend the slot slightly to ensure a tight fit. Tape the slot in position and replace the reflector element. Solder on the coax, arranging it as in fig. 10. As usual at these high frequencies only really low loss coax should be used, and as little as possible between the aerial ad convertor. Tape the coax joins and give the whole assembly several coats of paint.



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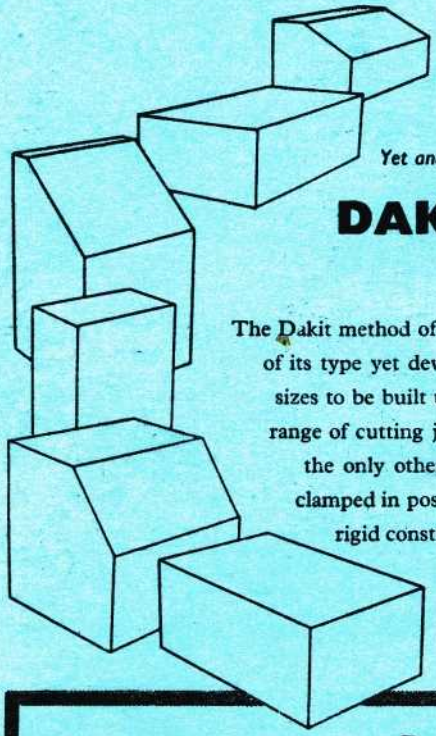

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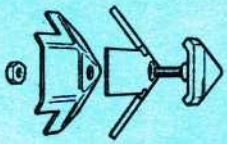
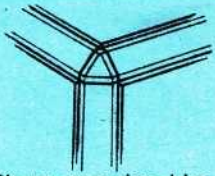


Single nut fixing for quick construction.



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