

cq-tv

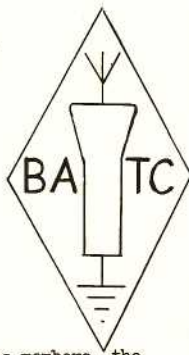
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Editorial

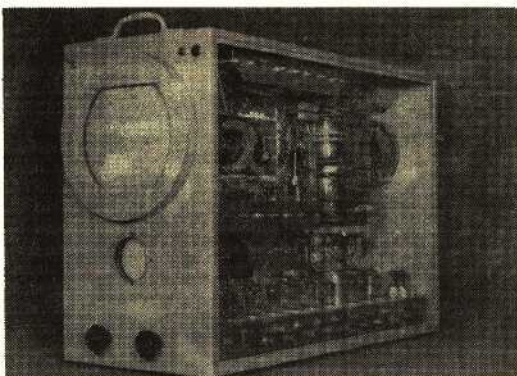


For our large number of overseas members, the good news this month is that **VIDEONS ARE NOW AVAILABLE TO ANY MEMBER ANYWHERE** with the exception of Iron Curtain countries. The tubes are rejected for minor blemishes, and will cost £25 (\$70) plus postage and insurance charges. Send us the £25, and we will send a bill for the extra. Write to G3CVO with your orders, and we will deal with them as quickly as possible. These tubes are identical to the RCA 6L98, but no bases or coils are available. As we anticipate a fair demand for the Club coil data, we are printing some notes in this issue, and would ask that anyone with vidicon circuits, etc send them in at once for publication. Please note that monoscopes are available under the old scheme to UK members ONLY. UK members writing in for tubes will be dealt with under the old scheme (Cathodeon) unless we are requested to the contrary.

The experiment of sending Club lecture tapes overseas was only partly successful; in 15 months only three people apparently heard them, and none of them notified Grant Dixon as to the whereabouts of the tapes. In fact, we hope many more did get to hear the tapes, and we will be glad to continue the service IF you will play the game too. Copies have been made of the two tapes sent out "Getting Started" and "Flying Spot Scanning", and these may be borrowed from Eddie Collins, 1003 East Blount St, Pensacola, Fla, USA; C.A. Rouse 10 Troonville Ave, Auckland NZ. Italian translations are available from Giacomo Vargiu, Via Brofferio, Asti, Italy. Let Grant Dixon know if you would like to borrow the tapes - but note his new address at Kyrle's Cross, Peterstow, Ross-on-Wye, Herefordshire. Our apologies for the delay in getting out the last two tapes - "Pulse Generation" (oversize tape!) and "Telicine" stuck with one of the contributors. Chelmsford group recorded lectures are at present being circulated to the Ross-on-Wye, Yeovil and South London groups, and we would like to extend this facility. Send recordings (of any sort) to Grant Dixon, and he will pass them round. But PLEASE don't keep the tapes so long.....

Another point for our overseas members: in view of G3CVO's forthcoming move, address mail that will arrive after October 1st to G3EKE at 4 Norbury Ct Rd, London SW16. He will be writing the Other Blokelsms column too, so send him all your news and circuits.

Summer is the time for groups and individual members to go out and see what others are doing, and we hope as many as possible of you will find your way to Great Baddow before the autumn. With shows at Dagenham (July 13-14) Birmingham (Scouts Jamboree)



Vidicon picture and waveform monitor built by Jim Russell of Bournemouth. The sync generator is built into the bottom; only the miniature camera is external to the unit.

and Southampton (August), you have plenty of chances to see the gear in action and discuss it with the makers, whilst Don Reid and Jeremy Royle are already thinking about another BATC Convention in 1958. Good luck, all - and lest break a few of the TV DX records this year.

J. Barlow

AROUND THE CLUBS

SOUTHWEST ESSEX is now the name of the old Dagenham and Romford group. Meetings - third Wednesday of the month. Recent lectures: Video Amplifiers (Don Reid), APQ2 Jammer Unit (G3KWD), Effects Amplifier (G3CVO), and the BATC Newsreel. Much more gear is now to hand, and average attendance at meetings is about 18. Work is concentrated on the Dagenham Show JULY 13-14 w/e. **BIRMINGHAM** are concentrating on the Jamboree in August. The camera is now running, but is not yet up to George Flanner's standards. Regular transmissions take place from G5DFI/T and G3KBA/T.

SOUTH LONDON GROUP meets on the first Friday in each month at 4 Norbury Ct Rd, SW16, where a large well-equipped Clubroom is available. Recent meetings have included G3CVO showing his PG and Effects Amp, and G3AKJ with his 5527 camera. The group's own 5527 unit is on the way, PG, PSS and 9" monitor ready. G3EKE/T will take care of the RF side when a PA bottle arrives. A Monoscope is also being built.

CHELMSFORD have their meetings on the second Thurs in each month at G3CVO's. The Club studio is now dismantled to make room for a car. Recent meetings have included "APQ2 Conversion" (G3KWD), Roy Martyr's Super Sync Generator, G2WJ's TCC Monoscope camera, and G3CVO's effects amplifier. The group is supplying two cameras to the Dagenham Fair.

HIGH WYCOMBE meet every Monday at Ken Cooper's, tea on the brew and visitors welcomed. The staticon camera is nearly ready. Recent visitor was G3CVO at Easter, who demonstrated the BATC Sync Generator. Mike Chaney at Amersham also pops in, and Jack Terry has kindly lent his CRO to the group. Two car loads of HW group recently paid a visit to the Chelmsford group, seeing G3CVO, John Tanner, Roy Martyr, G2WJ and G3KOK, acquiring some useful ideas and tubes en route. Regrettably they had to leave just before the colour dem at G3KOK's!

THE APQ2 RADAR JAMMER

This unit is undoubtedly one of the most useful buys on the surplus market. Messrs. Proops for instance have these units for about £5.

The RF section consists of two 588A triodes in a push-pull parallel line oscillator, covering the range 250 to 550 Mc/s, with a power output of some 20W at the lower frequency and 5W at the higher. All controls are continuously variable over this range, but the back lines are clipped onto the valves for use above about 450Mc/s. The heater transformer fitted is a 400 cycle job, and can be replaced by a 50 cycle one supplying 4V at about 6 amps. The filaments were originally fed from two separate windings of 2V, but the unit appears to be quite satisfactory and hum-free with the valves in series. HT in the region 300 to 550 max volts is used, the valves being rated at 50W max dissipation. The aerial coupler fitted has two ranges of tuning, and the unit is designed for 50 ohm co-ax output from a standard 30239 socket. A crystal probe is fitted, which takes a standard silicon cartridge diode; a 500 μ A meter should be used, and a typical reading is 175 μ A for 350V HT. The 28V blower motor is marked "D.C", but if the field coils and armature are rewired in series, will run off the mains via a 2 μ F paper capacitor. Try grid modulation, or there is plenty of room for an anode (series) modulator and pre-amp to be fitted; miniature 807s are probably the best bet here, and will fit easily under the output coupler. An external 500 μ A meter is used in conjunction with the metering switch, for measuring I_k in the two valves, crystal current, etc. If the valves are in series, the metering will need to be changed. There is no apparent microphony from the blower, nor hum, when the RF is picked up on a simple dipole and crystal plus headphones. The frequency can be checked with a simple absorption wavemeter such as that described in "An Introduction to Amateur Television", and the following readings were obtained at 456Mc/s on one unit: Anode 127.5 Grid 241.5 Coupling 4.6 (front end), Stub tuning 2.2. The frequency stability appears to be good. Remember that the valves are bright emitters!

The Video section is identical to that in the APQ9 radar jammer, and consists of a 931A photocell, two 6AC7s and a 6AG7, and two 807 modulators. For use as a slide scanner, remove the cover over the 931A, and remove the lamp found inside. Rotate the base of the 931A so that the cell points in a more useful direction. Strip out all the components, plus the 807 valve bases and chokes, and the block capacitors. Take out temporarily the screens between stages, and rewire the amplifier as a simple RC video amplifier (the circuit in "An Introduction to Amateur TV Transmission" is suitable). Fill in the first 807 base hole with a plate carrying an octal valveholder for the phase-splitter and cathode follower. The second hole can be filled in to carry the PEC volts potentiometer. In the end plate mount the new gain control, power inlet, and output video socket. The ON/OFF control can be used for phase reversing. With the screens refitted, the amplifier will be found quite stable with an unregulated HT supply

of 200 to 300 volts. The negative supply to the PEC should be 150 to 350V, giving a total of about 500V across the cell. Point the cell at the domestic TV set, and view the video output on a CRO, or another TV set. In the latter case some extra amplification may be needed. For synchronisation, feed the same programme to both TV sets, but disconnect the monitor CRT video drive from the set, and feed from the APQ video unit instead. Beware of live chassis in AC/DC sets.

It is unlikely that the video strip will be run alongside the transmitter in its original case, so that there is plenty of room for a modulator etc in the carrying frame. The case itself makes a useful camera or power pack case. -G5KWD

WHY LINES?

No member of the BATC has yet reported experiments with spiral scanning, so the following notes are given in case they should appeal to someone who is about to build a flying spot scanner using a 5FP7 and 931A.

The original 5FP7 deflector coils look as if they could easily be adapted to this application as the line and field coils appear identical. For spiral scanning a sine wave is applied to one pair of coils, and the same sine wave, shifted 90° in phase, to the other. This produces a circular trace on the tube, and the spiral is obtained by amplitude modulating the sine wave oscillator with a sawtooth. If the sinewave is at 10kc/s and the sawtooth at 50c/s, the spot will trace out 200 turns of spiral, giving 400 line definition. The 10Kc/s and 50c/s must be locked by the usual counter chain, and also the sawtooth must be applied so as to dim the intensity of the spot as it approaches the centre of the tube, where it has a low linear velocity. On the credit side, there is only one flyback line to be suppressed, and the circular pictures make better use of lenses and CRTs.

As there is only one sync pulse per picture, the receiver 10Kc/s and 50c/s oscillators must also be locked by a counter chain, but much better use is made of the time available for transmission, and RF carriers can be modulated 100% with picture detail, if both tx and rx are locked to the mains.

For initial experiments, the same oscillator can feed both scanner and monitor. The sinewave should be of very pure waveform to obtain a true circle; this can be checked by drawing a circle on a piece of perspex, and placing it in front of the CRT. C.G.D

MODIFICATION

to the G5KOK/T 70cm CONVERTER in "CQ-TV" Number 31. On production models of this converter, trouble has been experienced from the mixer line tuning to too low a frequency. As shown it has a maximum frequency of about 450.0 Mc/s. To increase this, either make the centre line of 5/16" diam instead of 1/4", or replace C1 by two 1/2" diam discs, one attached to the line and one to a screw adjustment through the end of the trough, or pad or rebuild the mixer trough to be 7/8" square and not 1".

Please pass your copy of CQ-TV around any of your friends who might be interested in joining the Club.

VIDICON COIL DATA

Continued from CQ-TV No. 25

In all cases, the information given applies to Cathodeon Staticons types C931A and B and later types, to the RCA 6198 and 6326, and to English Electric P810 and P815, and is obviously applicable to any other equivalent tubes.

Most amateurs will not be able to afford to buy the correct scanning and focus assemblies, whilst the ridiculously non-standard base is impossible to buy outside the trade. Details for these will now be given, which will act at least as a guide for anyone to follow, although the detailed construction will depend on the facilities and capabilities of the constructor.

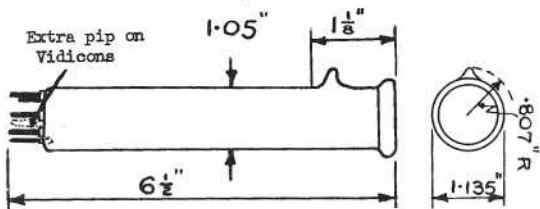


Figure 6/7: Standard Outline of Vidicon/Staticon

Figure 6/7 shows the dimensions of the tube; it should be noted that the side pip on the Cathodeon tubes appears in many cases to be much bigger than those on other tubes, although the clearance shown is adequate. Figure 6/8 shows the assembled yoke, whilst Figure 6/9 shows the dimensions of the inner former upon which the deflection coils are wound.

DEFLECTION COILS

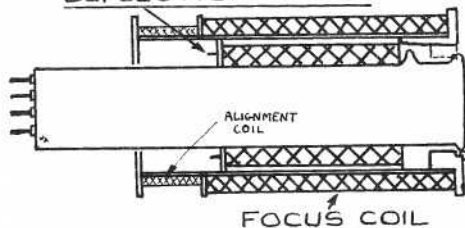


Figure 6/8: Assembly of Complete Yoke and Tube

This is a fit inside the focus coil former, and has its connections brought out to a flange at the end remote from the target plate. The former is made from $1\frac{1}{8}$ " o.d. paxolin tube, which is turned down to be

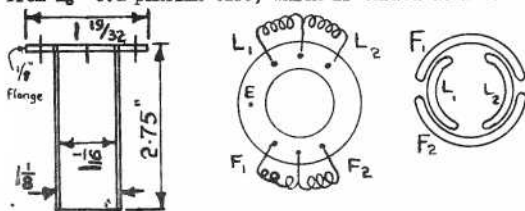
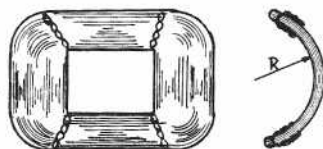


Figure 6/9: Deflection coil Former

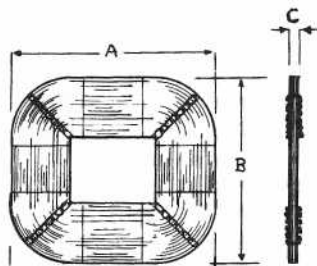
$1\frac{1}{16}$ " i.d. Alternatively, paper can be wrapped round a $1\frac{1}{16}$ " diam core, and well shellaced or stuck with suitable cement to make it really rigid. Upon this former can be wrapped the screening coil, if required (there is some doubt as to whether screening is necessary in amateur gear). A $\frac{1}{4}$ " wide strip of 2 thou copper foil is wound in one layer over the former, the flange end being taken to an earthing tag, and the other end left floating. Great care must be taken to prevent the turns from touching each other.

Over the screening, a couple of layers of paper are wound and shellaced, and the former is now ready to receive the scan coils. These are shown in Fig. 6/10 and 6/11. After winding, the coils can be formed round a core $1\frac{3}{32}$ " diam for the line coils, and $1\frac{3}{8}$ " o.d for the field coils. The line coils are placed on the yoke former as diametrically opposite as possible, and cemented in position. The field coils are best attached to a thin paper former, which is then slipped over the line coils. This enables the field coils to be rotated slightly to give a truly rectangular scan, after which they can be secured permanently to the former. The flange, fitted with tags (conveniently made by forcing 16swg tinned copper wire through 17swg holes) is cemented in position, and the coils wired to the tags as shown.

(Right) Deflection coil after bending.



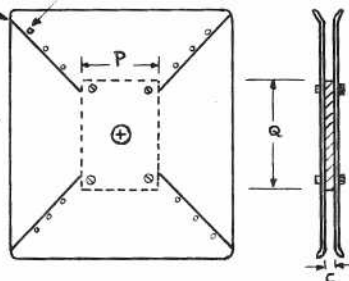
Deflection coil before bending. See Table 6.1 for details.



Saw Slots (see text)

Drill holes for pins (see text)

A typical winding jig for the coils. Aluminium or brass is suitable.



Dim ⁿ	Line Coils	Field Coils	Alignment Coils
A	2 5/16"	2"	1 1/4"
B	1 7/8"	2 5/16"	3/4"
(Tolerance on above: $\pm 1/16"$; alignment coil dim ⁿ are not critical).			
C	0.110"	0.06"	9/32"
P	15/16"	29/32"	5/8"
Q	1 1/4"	11/16"	7/8"
(Tolerance on P & Q: $\pm 1/32" - 0"$; alignment coil jig not critical).			
R	0.55" approx	0.69" approx	1 3/4"
ohms/coil	1.6	82	70
mH/coil	0.62	17	22
Total L, series	1.35mH	41	44
Turns/coil	105	620	1000
SWC	26	38	34
(Lewmexbond T will be found to be easiest to work).			

Winding details

Line: Wind 26 turns, tie with thread; repeat twice (total 78); wind to 105 turns, finish off and tie. Bind sides with Sellotape and bend to shape.

Field: Wind 150 turns, insert pegs into first holes, or tie; repeat for 180, then 150t, then finish off to 620 turns. If Lewmexbond, pass 6.5V or heat to 150°C to bond wire, or tie. Form to shape.

Alignment: Not critical - wind on jig as preferred.

TABLE 6.1: COIL WINDING DATA

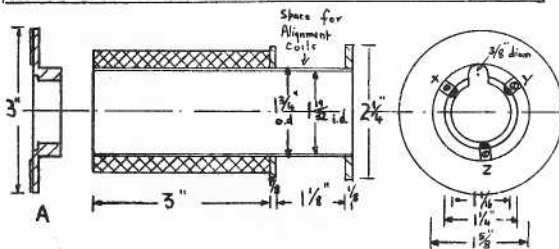


Figure 6/12: Assembly of Focus Coil Former

The focus coil assembly is made up of several parts as shown in Fig 6/12. The end flange A is either turned down from a 3" disc of 1/2" thick paxolin, or it can be made up from thinner pieces stuck together. It has two "steps" turned out of it, to take the three phosphor-bronze contacts XYZ; these serve the additional purpose of centering the tube in the coils. The three contacts are wired together.

The flange should be fairly strong, as it supports the weight of the complete yoke. The coil former is made in the same way as the deflection coil former; before assembling the flanges and former, check that the deflection coil assembly will fit inside, and that the tube pip will go through the slot provided for it. The focus coil has to provide a field of 40 gauss, and one suitable winding is 6500 turns of 34 swg enamelled wire, which will require some 40mA of DC. A final wrap of paper or tape will finish the coil neatly. A winding of iron wire will reduce the

focus current required, but this is not easily obtained. Permanent magnet focus by four rod magnets parallel to the tube can be used if they can be obtained. The tube is very susceptible to external magnetic fields, and should be kept well away from such things as viewfinder focussing magnets, motors and the like.

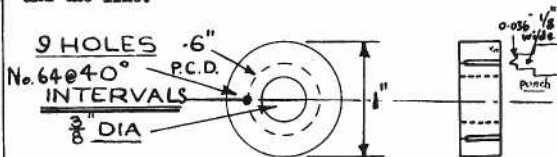


Figure 6/13:

Details of Tube Socket

The tube socket presents some difficulties. No doubt many members will dismantle an old valveholder and just push the connectors one at a time on to the pins, possibly keeping the leads apart with a paxolin disc suitably drilled. For those who wish to make a proper

holder, a piece of tufnol or paxolin about 1" o.d and 11/32" thick is required. See Fig 6/13. The centre hole is 3/8" diam, clearance for the stem of the tube. 9 holes at 40° intervals are drilled on a 0.60" pod. For the particular sockets used, taken from a Clix BSA valveholder FG81815/1, 8 of the holes are counter-bored 1/8" diam for a depth of 5/16". The tool shown is ground from an old hacksaw blade, and punched through the remaining 1/32" of material. The sockets are then inserted and twisted in the same way as in the original valveholder.

The tube is held in the yoke by gentle pressure from the front, ensuring good contact with the three target connectors, and is supported at the back by a simple Jubilee clip, suitably padded, around the glass neck. In professional circles, the actual tube socket is not supported, but acts merely to keep the connections separated. No doubt there is a good reason for this, for at first sight it would seem better to clamp the socket rather than the glass.

The alignment coils serve to ensure that the scanning beam meets the target at 90°. They may not be required, or can be replaced by bar magnets. When the alignment is correct, adjustment of the electric focus electrode (G3) of the vidicon will not shift the position of the picture. One, two or four coils can be used, wound to fit into the end cheeks of the focus coil former. With one or a pair of coils, their position and current is varied to adjust the alignment; if four coils, disposed in pairs like deflection coils, are used, then only the currents need be varied. The coils shown draw about 40mA max, and can conveniently be wired in series with the focus coil. They may be shunted by 250 ohm wirewound potentiometers to vary the current. Alternatively, another set of field coils could be wound, shaped to fit the available space, and a much higher current passed through; this current might well be the centering current passing through the scan coils.

no input from V1 or V2, this switch will merely change from input 1 to 2 with a slight delay, and the unit can be used as a two channel vision mixer. V1 and V2 are simple integrators producing line and field sawteeth. If, say, line sawtooth is added to the DC fed to V3, then by setting the manual control the changeover will occur at any desired point in the line, and the resulting picture is as in Fig. 3a.



Figure 3: Some of the effects produced by the unit.

On auto, the vertical division moves across the picture producing a horizontal wipe. Using the field sawtooth from V1, a horizontal division is obtained, or a vertical wipe. Adding field and line sawteeth cuts out ideally a rectangle from the bottom righthand corner as in Fig 3c, but in practice this becomes rounded and rather contemporary in shape as in Fig 3d. The aspect ratio of this "lozenge" can be varied by altering the amplitude of one of the sawteeth. An external input can be used for a variety of effects such as "Venetian Blind" (sinewaves or bars at a multiple of field frequency) and inlay and overlay, where the input signal consists of the output from some camera clipped above or below some reference level.

The unit is built on a 4" by 15" panel mounted above the vision mixer panel at G3CVO. Only the controls project at the front, and a 12 way connector joins the unit to the input sockets which are mounted on the frame of the mixer console. Video, and line and field syncs, are looped through in the usual way.

Hints for further improvements:

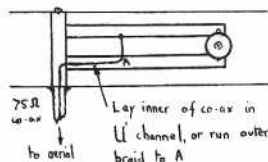
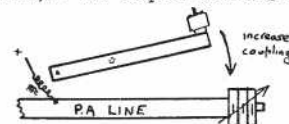
Applying last months BACF Wrinkle, the 6F35s could well be replaced by 12AT7s, connected as cathode coupled pairs. The video would go in on one grid, and the switching waveform from both anodes of V3 to the other. This would mean that all six valves would be similar, and the increased g_m of the 12AT7 would allow the 10K common video load to be reduced. A fairly large peaking coil would extend the bandwidth too. If 6F35s are used, the video could well be applied to the control grids (higher g_m), with the anodes of V3 connected suitably to the suppressors. There is a white bar produced at the chageover which can be reduced to about 1% of the line width by choice of capacitors across the Schmitt coupling resistors, but this bar is of large enough amplitude in the Positive Output condition to cause DC restoration in following amplifiers, so depressing the pictures into the black region. The net result is that the contrast of the pictures suffers as the wipe occurs. A peak white limiter, possibly on V6A grid combined with some load and bias switching, would be an advantage. In the negative output condition no such trouble occurs. It should be possible to switch V2A to act as an amplifier of external signals. G3EKE suggests making V3 a flip-flop of adjustable duration to produce the switching. In any case the RH grids of V3 and V5 can be used to add more waveforms, and there seems no limit to what can be done. However, oddly enough, a simple diagonal wipe has so far defeated us, but makes a grand

subject for argument as to What Combination of Line and Field Sawteeth should produce it!

Finally the author would like to thank PAOZX and Mike Powell for helpful suggestions over the past few years. The unit will be in action at Dagenham - possibly doing the Daz window test with one half of the picture negative and one positive!

AN OUTPUT COUPLER

One of the most difficult operations at RF is to abstract the hard-won RF from the PA tank circuit and to push it into the feeder. It is possible to lose easily 90% of the output by inefficient coupling; this will show up as a weak signal, and entirely the wrong modulation characteristic for the PA brought about by incorrect loading. Series tuned loops, pi-coupled loops and the like can be used, but a very successful device is that used by G2WJ/T. The coupler consists of a shorted quarter wave line tuned by a small capacitor, with the output co-ax tapped up the line. An almost unlimited number of variations can be made, but the design shown has proved very satisfactory. $\frac{1}{4}$ " side U channel, brass, is used, although $\frac{1}{4}$ " tube would do. The "cold" end is spaced about $\frac{1}{2}$ " above the "cold" part of the PA plate lines, i.e where the



HT chokes are connected. With the coupler parallel to the lines, tune the PA for resonance, tune the coupler to resonance, and then move the coupler closer or further from the lines until maximum HT current is indicated - retuning if necessary. It may be found that slight overcoupling gives the best results with TV modulation.



Mike Bailey operates G2WJ's photicon camera at the 1956 ATV Convention in London.

WHAT THE OTHER CHAP IS DOING

As usual, most of the news of progress comes from the various groups. Whether there are two or twenty-two of you, do please get in touch and share the work - its more fun, more instructive, and you get there quicker....

Bill Still W2GVR/VE2 of Montreal writes that he has been in the TV business since 1938, and is now permanently in Montreal, where he has been pushing ATV for two and a half years. Already on the air, besides himself, are VE2AFM, ART; LS and VE3RM are experimenting, and by the autumn VE2JF, ADR, AES, JL, AFD and OM Karas should be putting out pictures. Others building gear include VE2AKK, AWP, KB, MB, AUV APU, SC and ZP, whilst W1VSA is hoping to relay the pictures of WCAX-TV from Mt. Mansfield, Vt some 65 miles away. The VEs are using more or less a 625 line version of our 405 line system, with the addition of a front porch on the field sync period (Why, oms?). Sound is radiated on a 4.5Mc sub carrier, FM. They reckon on a 3Mc/s video band. To add to this sterling work, Bill has recently duplicated his complete circuitry for the conversion of an IFF unit; this uses a pair of 826s as a p-p oscillator on 145Mc/s driving an 832A tripler and a pair of 9910 or 9903 tubes in the PA, and has been copied by several stations. Sound and vision modulators are also given; Bill doesn't state a price for the data, but no doubt can supply if you write him at 4367 Papineau, Montreal. Well done, om, and good luck to Still Pictures!!

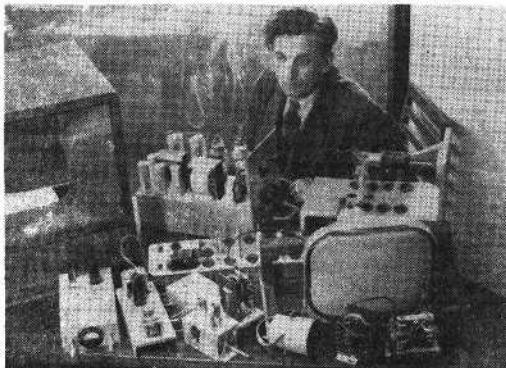
Charlie Coorsh VE2AFM sent in a colour print of his gear. Unfortunately we cannot reproduce a colour print even in B&W, so we hope for a monochrome print for next time. The gear looks fine, and Charlie is active with AM FM Mobile and ATV. Cliff Sunderland VE2CB is visiting the UK now, and hopes to look up a few /Ts.

Peter Burrage (Suffolk) has had a spell of bad health, which has prevented him from completing the 15cm microwave link. He is now collaborating with Roy Martyr (Chelmsford) in building a 5cm link for the Dagenham show, using 723A/B klystrons and FM. 45Mc/s Fye strips will be used initially, but wider bandwidth IF strips will be required later for good TV results. Roy has put the Super Sync Generator and its 400mA regulated power supply in a 6' x 19" enclosed cabinet; a clamp pulse generator is next on the list, together with FSS and vidicon camera. Ted Pegram G3LNT/T is working on the CV67 klystron link for 15cms, using AM by grid mod. The G8SK transmitter is now working fairly well, and Ted has built a wonderful version of the 70cms converter in "I.A.T.V." booklet. A lattice mast for further HF experiments is being built.

Ken Cooper (High Wycombe) has made a lens turret assembly from an old cake tin lid, whilst the station focus coil is wound on a shellaced "Bronco" toilet roll former! Syd Collins and Colin Draper are making a 1" angle iron frame for the monitor (don't get it magnetised, oms) whilst John Easden is making an audio mixer panel. Brian Hoppood is building a monitor amplifier. Rex Lakeman has finished the camera and now awaits the station and valves: S.O.S the group is stuck for 3 6CB6s (same as EF91 but g2 and

g3 reversed). Any help would be much appreciated by the H.W. group.

Yeovil (Somerset) and District Amateur Television Club meet every Wednesday at Alan Stacey's. That is G3AST, now in temporary accommodation whilst his new house (superb VHF site) is built, Alan and G4OZ at Sherborne, some 6m away. Alan has a 30C4 FSS tube by Mazda, and gets 3Mos easily from the video amp using EF91s with 4.7K loads. A 5FF7 in the same setup gave distinctly noisy results. A 55Z7 is to hand, which the boys will probably use for film scanning, and with John's equipment as well the group has a good nucleus of ideas and gear to keep them going. Visitors and tapes always welcomed.



JANKO VASILIC of BELGRADE with some of his gear.

PAOZX has been extremely busy, and unable to do much with TV; the 80m sked for German and Dutch speaking BATCs has had to slide. Harry Grimbergen PA0LQ (Leiden) continues the excellent work: a new FSS using a 5WE15 scanner at 20kV, and a 48 element 70cm array made from copper tube. A short spell in hospital will set Harry back a week or two for his trans-North Sea tests. W8MRH is at Pontiac, in Michigan. He runs an AX9903 PA on 430Mc/s to a 24 ele beam; the camera uses a 6526 vidicon, built on a 5" by 7" by 2" chassis. 525 line type of sync is used, but non-interlace (ie 262/525 lines). The 6526 is designed for film work at high light levels, and we should be interested to hear of results. Eric Lawley (RAF Locking) manages to find time to do a few small ATV units, and hopes to be in Birmingham at the time of the Scouts Jamboree. Simon Freeman is now G3LQR/T at Dedham, Nr Colchester, and has had some unsuccessful tries at persuading overtone oscillators to work. With a supply of new crystals, and an old SCR522 of G3CVO's, Simon hopes to get some real drive into his QQV06/40s. He is 6m from Eddie Barrall G2BCB at Colchester, but the latter has very little spare time at present.

Mike Barlow G3CVO has had a major rebuild, taking the gear out of the rack and putting it into mobile cases 24"x15"x8 1/2". One of these contains the sync generator, pattern generator, RF distribution, power supply and camera control; another contains 70cm tx, sound tx, waveform monitor, and modulators; the third

contains a Test Card C monoscope camera and power supply - TOC selected for the benefit of Montreal viewers who may not know it. It has, at great expense, been overprinted with the call letters of Barlow's Broadcasting Co. The master control console has been completed, with four sound channels, four vision mixing and two vision effects inputs, and talkback and cue control. Because of the cables involved, some non-BATC standard 8 way plugs carrying mains, HT, LS FS and MS are used between certain of the units, being sure to finish up with a standard Belling-Lee, of course! An EG91 pre-amp to G3VI's design in the last edition has proved to be just as good as the RF105 unit with its disc seal CV55. The vidicon camera proceeds slowly, and is designed to be interchangeable with John Tanner's.

George Flanner G5KBA/T in Birmingham continues to be one of the leading lights up there. His camera is 12"x8"x5", complete with free-running timebases, video amp, regulator tube, and scan failure circuit 11 valves in all. He gets 3Mc/s easily, and is very pleased, but had some trouble at first with non-linearity of scans, due to mismatching. George tried a cascade pre-amp but found no improvement over a simple pentode, and the present lineup is EF91/6CB6 (triode conn.) EF91, EF91, EF91 GR. Line and field osca are EF91a, with a 5763 Line o/p and EF91 field. The camera itself is made from two standard 12x8x2 1/2 chassis back to back, with hinges for easy access. For camera cable, George has used 50ft of ordinary 7 way flex. He finds this quite adequate provided the "live" video and pulse leads are run at about 25 ohms impedance. It is very much lighter and more flexible than proper camera cable, and so there is less chance of pulling the small camera off its tripod. George reminds us that he recorded video on tape two years ago by FM of the bias oac; Bill Stapleton is now trying a carrier system.

John Tanner's vidicon camera chain is almost complete, and should be running at the Dagenham Show. The camera is 8" x 5" x 4", with the CCU etc on a separate rack mounting chassis. Whilst John builds the camera, Mike Chaney (Amersham) is toying with PSS, and John Deveson is working on a 430Mc/s TVTX, using a QQV06/40 PA. All three share a shack at Chelmsford, so a complete station should be available by the time G3CVO leaves in November.

J.Shankland GMSFM complains that all the BATCs in his area (Edinburgh) have either lost interest or moved South to the land of the telly. He is very anxious to have a go at ATV himself, so if you are near him - please write. Tom Douglas G3BA is now well installed at his new home at Sutton Coldfield, with a very good 70cm site. How about some pictures, Tom? J.A.Cusdin (Polegate, Sx) would like to meet a 931A and a mixer Xtal. He has written several articles for the Radio Constructor. Mike Cox has temporarily returned to Beccles whilst preparing for exams. His "Pathe-Cox" telecine unit is a great improvement on the old one. The 931A fits in the lamphouse with its pre-amp, so cutting out a lot of the motor hash. The scanner CRT is placed a couple of feet in front of the lens, and the results are surprisingly good. Mike has tried a colour wheel between lens and CRT and has had good results. A transistorised pattern generator using surplus transistors is also on the way. He has scrapped the counter, and is currently obtaining field timing from the T41 thyatron which locks on

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 Don Oliver VE7AOG 1209 Vancouver Ave, Nanaimo B.C.
 R.F.Redfern 23 Rawalpindi St, Auckland, N.Z.
 J.V.Sergeant W0WJ 1016 Trant St, Bettendorf, Iowa.
 J.M.Shankland GMSFM 28 Craigmount Crescent, Corstonphine, Edinburgh 12.
 Paul Vago 1515 Bryson, Youngstown, Ohio.
 D.J.Whitehead Albert Hotel, Madoc St, Llandudno.
 S.F.Wyndham 32 Rothmans Ave, Chelmsford. (562).

Changes of Address

4160556 J/T Brett, Tech Section, RAF Scarinish, Isle of Tiree, Inner Hebrides, Scotland; F.Brown G3JQP Myrtle Villa, Clifton Rd, Pound Lane, Pitsea, Essex; E.H.Butcher G3CUH 4 Crowsfield Cottages, West Hanningfield, Essex; Eric Cornelius VK6EC 157 Wood St, Inglewood, W.Australia; C.G.Dixon Kyrle's Cross, Peterstow, Ross-on-Wye; J.Harte Chapel St, Newcastle West, Co. Limerick, Eire; Ivan Howard G2DUS/T 40 Regent St, Stotfold, Beds (tel 297); J.V.Mercer 73 Timsbury Crescent, Bedhampton, Havant, Hants; J.Plowman G3AST 4 Hewish Farm Cottages, Bradford Abbas, Sherborne, Dorset.

the HT ripple!

Alwyn Stockley has been very busy with exams and house painting, but has started work on the 441.4Mc/s vision tx; his 160m gear is working and he hopes to start a regular TV net in S.London. Doug Wheeler has been very busy building gear for the Dagenham Show, including a 4 channel vision mixer using suppressor grid switching, but with the push buttons remote from the unit. Frank Brown is designing a vision transmitter, and Martin Lilley has built a 16 ele stack. G3AKJ/T, using a 6J6 transmitter, should also be on the air soon. Peter Waspe has built a very neat 9" picture monitor, using 1/2" angle dural; like Jack Terry's 14" one, it can be stood any way up. Anyone using MW6-2 projection tubes as monitors? Vidicon coils fit these quite nicely, and waste less power than standard 35mm coils would. Grant Dixon hopes to make a 3-tube "Triniscope" using 3 MW6-2s. G2WJ has aligned his converter for him, and Grant also has an RF105 70cm pre-amp. When he is settled into the new house at Peterstow (a much better VHF site) some HF tests will be laid on. Eric Lawley, RAF Locking, says there is a very active TV group there who want to contact BATCs in the area. They intend to build the lot....

Eric Cornelius VK6EC is ordering a new vidicon as the old one is spotty. He reckons that VK6WJ/T (those letters again) is the only other ACTIVE TV man in the whole of Australia. Full details and photo next time. If our next Convention lasts two days, do you prefer Fri-Sat or Sat-Sunday? 75M

BRITISH AMATEUR TELEVISION TRANSMITTING STATIONS LICENSED BY JUNE 1957

G2DUS	I.Howard, Stotfold, Beds.	G3KFK	P.Robinson, Worthing, Sx.
G2WU	R.Royle, Gt. Canfield, Essex.	G3KKD	I.Waters, Ely, Cambs.
G3ACK	J.Hogarth, Blyth, Nthmblid.	G3KOK	B.Partridge, Bishops Stortford.
G3AST	J.Flowman, Yeovil, Som.	G3KPK	R.Howard, Maidenhead, Berks.
G3BAY	G.Addison, Leicester.	G3KQJ	M.Sparrow, Wolverhampton.
G3BLV	F.Rose, Sunderland.	G3KRA	M.Cole, Chelmsford.
G3CTS	TV Society, SE26.	G3KYW	R.Watson, London SE2.
G3CVO	M.Barlow, Gt. Baddow, Essex.	G3LCM	L.Mansfield, Coulsdon, Surrey.
G3DFL	G.Hill, Birmingham.	G3LDW	W.Ellesmere, Birmingham 16.
G3EKE	A.Stockley, London SW16.	G3LNY	T.Pegram, Chelmsford.
G3FNL	R.Grubb, Upminster.	G3LOS	G.Chatley, Enfield, Middx.
G3FWF	R.Torrens, Belfast.	G3LPB	J.Brown, Penryn, Cornwall.
G3GDR	L.Dent, Abbots Langley, Herts.	G3LQR	S.Freeman, Dedham, Colchester.
G3JVO	F.Lee, St Albans.	G5ZT	H.Jones, Plymouth.
G3KBA	G.Flanner, Birmingham.	G3JLO	R.Smally, Carnforth, Ches.
G3KFE	G.Ellery, Enfield, Middx.	GW3FDZ	D.Whitehead, Llandudno, N.Wales.

This list includes only those who are known to the BATC.

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G3LCM/T

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