# 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:

Undoubtedly the news of the month is with regard to the supply of camera tubes. As is explained elsewhere, a modern replacement for the ubiquitous 5527 is at last available to all who can afford it. Although the tubes are not perfect, they represent a great advance on the 5527, whilst at the same time they are not so complex as other BBC types of camera tube. It is to be hoped that many BATCs will be able to take advantage of this very kind offer.

Many letters have been received dealing with the subject of proposed standardisation of cable outputs. All bar one prefer the higher output of 5V, for the following reasons: noise and hum pick-up on the cables become proportionately less, a fair amount of loss along the cable can be tolerated, and with the 5V level only one stage of amplification is required in order to feed either a monitor CRT or a simple waveform monitor. Therefore it is proposed to adopt the 5V level, white positive, to be available from cathode followers designed for feeding 75 ohm co-ax. Where sync pulses or blanking pulses alone are required, these will also be at the 5V level, but negative. Vison alone, 5V white positive; complete video, 5V white positive, blacklevel 2V, sync zero in the usual manner. With regard to actual plugs and sockets, it is suggested that standard Pye plugs be used ONLY on RF cables, and that all video and sync be passed through Belling-Lee sockets. Most of those who have written in seem to have adopted these already, and it is hoped that the others will be able to comply.

On the domestic side, the Committee have agreed to accept responsibility for the Club as follows: N and NE, Mr F.Rose, G3BLV; NW and N.Wales, Mr Ian Macwhirter G3ETI; SW and S.Wales, Mr Grant Dixon (Chairman); S.Midlands and Home Counties, Mr Don Bradford G3GBO; E and SE, Mr D.Wheele G3AKJ; South, Mr M.Barlow, G3CVO. Where possible, members are asked to contact their Committee members for information, in order to relieve the load on the Hon Secretary. In addition, technical enquiries on Colour transmission, and reject CPS camera circuits, should be addressed to the Chairman direct. It is hoped to set up a similar arrangement for dealing with 5527, telecine and telestill, pulsing, and Vidicon technical enquiries.

As announced in the last edition, Mr.L.A.F.Stockley, G3EKE, of 309, Norbury Avenue, London SW16, has taken over the office of Hon Treasurer. This has resulted in some delay to mail, and it is possible that some subscription reminders and the like may be sent twice. Please note that all monies made out to the Club should be sent direct to Mr Stockley. As usual, receipts will be sent out with the magazine. Mr Stockley is also going to deal with part of the "First Enquiries"mail, and all the extras such as notepaper, lapel badges, Membership Certificates, in fact anything that does not concern the magazine. G3CVO will continue to deal with back numbers of the magazine, publicity, manufacturers liaison, etc. With our numbers on the increase, however, plus the prospect of the Hon Secretary having to get a job very shortly - and possibly moving house - your co-operation is asked in keeping unnecessary correspondence to a minimum. This does not mean, of course, that your letters are not welcome - indeed, the amount of material sent in may make a larger edition of CQ-TV necessary in the future.

On which optimistic note, I remain

Yours Sincerely, M Barlow

G3CVO
Hon Editor.

## THIS MONTH'S SHORT NOTES.....

Al Bevington, G5KS, 283 Poplar Grove, Gt Horton, Bradford, wants valves for 70 cm PAs, and a 16mm cine projector or parts - cheap, please!
WANTED: 3" or 4" f3.5 lens to cover 1½ x 2", prefer with iris. Can exchange f3.5 35mm focus Tessar with iris, suitable as wide angle lens for 5527. G.Dixon, 23 Wye St, Ross on Wye.
Jack Porter at 30 College St Worcester has a few 7FP7s in units @ £4.
Chris Batty at 220 Brandwood Rd, Kings Heath, Birmingham (and others) want 6SN7s &6AC7s.
THREE 3FP7s for sale: £1 ea plus 2/6 base, or £3 lot. G2BMI, 27, Oakleigh Rd, Hillingdon (Middx. CR100 or B28 handbook wanted on loan: Bob Styring 62 Southgrove Rd, Sheffield.
It appears that the colour system mentioned last time is covered by a U.S patent.
Wanted: VCR138s and 139s. ZL2RP 45A Calabar Rd, Miramar, Wellington NZ.
Anyone found a good source of cheap 931As?
Here's a monumental note from Kenneth Burge, Money Hill Parade, Rickmansworth, Herts. He has a complete TV transmitter on Sutton Coldfield channel, ex-factory test line, including monoscopes waveform generators, mixers, audio and vision txs, rxs and monitors, PSUs, etc etc. 40 rack mounted chassis incl valves! Also complete 35mm telecine unit, Cintel tube, Ross projector, Cintel PEC, all complete with pre-amps. 1500' reels and duplicate chassis. Any BATC members wanting a look are welcome. Tel4469.
IF anyone collects stamps, the Hon Sec gets a few rare ones from time to time. Gift.
Don't forget to let the Hon Sec know whether you want a camera tube. Those who wrote in for the £10 variety (7 of you) please confirm you want a vidicon or....?
I am trying to compile a list of licence fees, permitted frequencies and general data on amateur TV in all countries. Would overseas members please let me know.
Will all /T licences in this country let me have a list of exact freq and sked times?
PAØZX still runs his TV session in Dutch at 1500 Sats on 3750kc/s. G3CVO will try and renew the 3750 sked on Sundays at 1400 (in English!) Please come on if you can. It is hoped to start a North country Top Band TV sked - any suggestions, oms?
Remeber the Northern Convention and the Dagenham Show - probably both in August.
Apologies for the bad typing, mis-spelling and bad diagrams in No 15. Christmas rush.
Part ii of series on Amateur TV Construction was in the Feb RSGB "Bulletin".
Copies of Nos 13, 14 and 15 are now available @ 1/6d from G3CVO.
For sale: BC453. Grant Dixon, 23 Wye St, Ross on Wye.
When setting up blocking oscillators, particularly in divider chains, always use a cathode follower probe input to the CRO, or capacity changes will upset things when the scope is removed.
A 70 cm converter with no tricks is described in the Short Wave Magazine for March '53. The converter is Xtal controoled, but a design for a similar one using variable tuning and a standard TV channel for IF will appear in "CQ-TV" next time.
Be prepared for a change of address when G3CVO gets a job. Please do not expect prompt replies to mail at exam times (June).
Is anyone besides David Nolan working on stereoscopic TV?
Has anyone a source of QQE03/20s?
Please make all cheques payable to the Club.
Many thanks for "DL-QTC", Mullard Outlook, and the Mohawk Journal.
Fink's Second Edition of "Television Engineering" is good; so is "Television" in the Phillips Technical series.
Has anyone a source of 16mm lenses suitable for vidicons?
Please do not keep the file of back copies longer than one week.
CONGRATULATIONS to Bill White and XYL on arrival of a son - David Brian.
The "Radio Amateur" would like a scribe to send in a TV column. Any offers?
A high Q filter in the local Osc injection lead will improve the signal/noise ratio....

## IMPORTANT ANNOUNCEMENT RE CAMERA TUBES:

Further to the note in the last edition concerning the supply of camera tubes, we have to inform members that the £10 tubes are no longer available. However, as members will be aware, a British equivalent to the Vidicon is being produced in this country, and will shortly be on the market. I have been discussing with the manufacturers the possibility of reject tubes being made available to the Club. Unfortunately, owing to manufacturing difficulties, it will not be possible to sell these reject tubes at less than £25, the exact price depending on the demand. I have seen these tubes in action, and can confirm that they are ideal for our purposes. They have a resolution of 800 lines, the sensitivity of a CPS tube, are only 5½" long and 1" in diam, use easily-wound coils and 16mm lenses. There is no lag with these tubes. They are being rejected for spots on the background. They are ortho--chromatic.

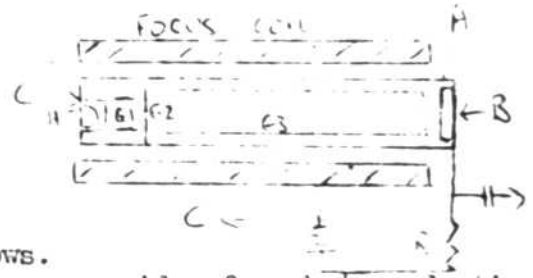
The manufacturers are also prepared to sell reject monoscope pattern generating tubes at £6. Various patterns, reject for blemishes on the pattern. These take standard deflection coils and focus rings. Output about the same as camera tube.

It is essential that anyone interested should let me know as soon as possible. There appears to be no limit to the number of tubes available, so anyone with a 5527, say, wanting a more advanced tube, is also invited to write in. The Club would appreciate it if any tubes made spare by these means could be offered to other members of the Club!

Arrangements with regard to the other varieties of camera remain as before.

Overseas and Dominion members are informed that in all probability tubes can be made available to them also, where trading agreements between firms are not in force. For precise information, write to the Hon Sec who will forward the query to the right quarter. Write in as soon as possible.

## THE VIDICON




As some members may not be familiar with this tube, a few details follow. More information can be found in RCA Review, Sept 1951 and March 1952, and in "Electronics" for May 1950.

The operation of the tube is as follows. A low velocity beam of electrons is scanned across one side of a photoconductive layer A, in a similar manner to an image orthicon scanning arrangement. The layer A is backed by a transparent electrode B which is maintained some 20V positive with respect to the cathode. The beam current is kept sufficiently high to keep the scanned side of the layer at approximately the cathode potential.

During the intervals between scanning, where the layer is conductive due to the action of light, the charge migrates to B. The scanning beam returns the charge to normal, so setting up a current in the load resistor.

The electron gun assembly is standard, G1 being between 0 and -100V, and G3 being maintained at something under 300V positive. The end of G3 near the layer is covered with a 500 mesh screen, which acts as a decelerator in the vicinity of the layer. The layer is about 0.0002" thick, and consequently has a rather high capacity (c 1200pF). The image size is 3/8" x ½". Average beam current 0.2μA, sig/noise ratio 100:1. Typical load resistor 68K. Gamma 0.9. With an f2 lens and an object of 50% reflectivity, 30 ft/candles of light are req uired.

WRITE IN AT ONCE IF YOU ARE INTERESTED IN ANY OF THESE TUBES.

**TELECINE SCANNING** From notes of G.Short and F.Rose.

There are two main ways of televising motion picture film; in the first, the film moves continuously through the scanning head, and in the second the film is moved intermittently, as in ordinary film projection. Allowance must also be made for the differences of speed of the film and the scanning frame speed. Using the 50 frames per second of British and Continental TV, the simplest thing to do is merely to speed the film up from 24 frames/sec (standard sound film speed) to 25 frames/sec. As will be seen, it is also possible to run silent films (16 frames/sec nominal) at 16 2/3 frames/sec, in which case if each frame is scanned three times, we have got back to the basic 50 frames per second required.

The scanning arrangements are exactly the same as for telestill scanning, with the possible exception that the lenses do not require to cover such a large area; in fact 16mm cine camera lenses are, of course, ideal for the job. The scanning tube must be flat-faced and short-persistent, as usual. The actual scanning may be by a single line - relying on the motion of the film to provide the frame scan - or by a complete raster. Consider first the case where the constructor has to hand a complete 16mm film projector of the normal variety. If the lamp housing is removed, a 931A PEC can be inserted in its place. The long focus projection lens should be replaced by a short focus type, to keep the overall length of the unit down to reasonable value. If a standard raster of either sequential or interlaced variety is generated on the scanning tube screen, then pictures of a sort will be obtained. See Fig 1.

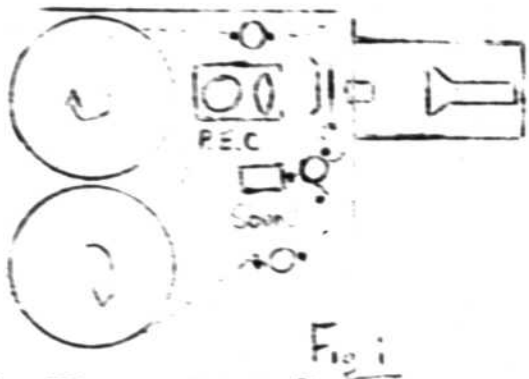



Fig 1

The system has several disadvantages, however. Firstly, for correct operation, the film frame should pull down during the scanning frame flyback period. This is not possible due to mechanical considerations, and on a normal projector the pull-down time is an appreciable fraction of one frame period. This means that the top few lines of the TV picture are going to be missing, which may or may not be serious. Secondly, a multi-bladed shutter is usually built in to a standard projector, and this must be removed for TV use. Thirdly, the system requires a complete projector of good mechanical design - the film must not jitter more than $\frac{1}{2}$ a line-height whilst it is being scanned - all of which make it an expensive item, and the unit cannot quickly be returned to its original state should occasion arise.

If a start has to be made from scratch, however, a considerable saving in cost is possible, provided the only intention is to televise films, and not to project them in the normal way. Firstly, no intermittent motion is required, so that the film drive mechanism boils down to a synchronous motor (of much smaller power than is needed above) and some gearing. Again, if the film is moving continuously, scanning can be done by means of a single line. However, since the tube is probably being run at max brilliance, this will tend to burn the screen and also cause defocussing effects. It is very much better to scan with a complete raster, although the scanning requirements are rather strict. If the film (running at 25 frames/sec) is scanned by two 25 frames/sec rasters one on top of the other, the direction of scan being the opposite to that of the film transit, then each film frame will be scanned by two 25 frames/sec TV scans, which are transmitted in the usual way. Similarly, if the film is moving at 16 2/3 frames/sec, and is scanned by THREE rasters (16 2/3 frames sec vertical speed) on top of each other, then again a picture is obtained to normal standards.

Various points must be watched to make the most of this arrangement. It is

absolutely essential that the frame scan is of constant amplitude, and that there is no alteration of vertical shift. This means good decoupling of the power supply, which should be stabilised if possible. The face of the scanning tube must be dead flat, so that the optical focus does not alter from one raster to the next, and the scanning tube should be of fairly large diameter so that the size of raster is not so small that the spot size becomes appreciable. These points may seem trivial, but although pictures can be obtained without attention to such details, the results will be very much better if care is taken. On the other hand, for amateur use it is not worthwhile incorporating refinements such as film-shrinkage compensators, etc.

A point that arises with any mechanical device is the problem of synchronisation. Owing to the inertia of the system, it cannot respond instantaneously to slight changes in the same way that an all electric system can. It is therefore necessary to generate the sync pulses from the mechanical system, and this is easily done by placing a small contact on a shaft somewhere in the mechanism. If the fixed contact .. can be rotated, a certain amount of phasing relative to the mains can be done.

A design for a complete telestill unit is shown in Fig ii. It will be noted that for economy, the unit can also be used as a telestill scanner (see note on lens coverage). The upper panel contains a 6" monitor tube switchable to either picture or waveform, the photocell with its condenser lens, the video amplifier and phase reverser, and the time bases for monitor and scanner.

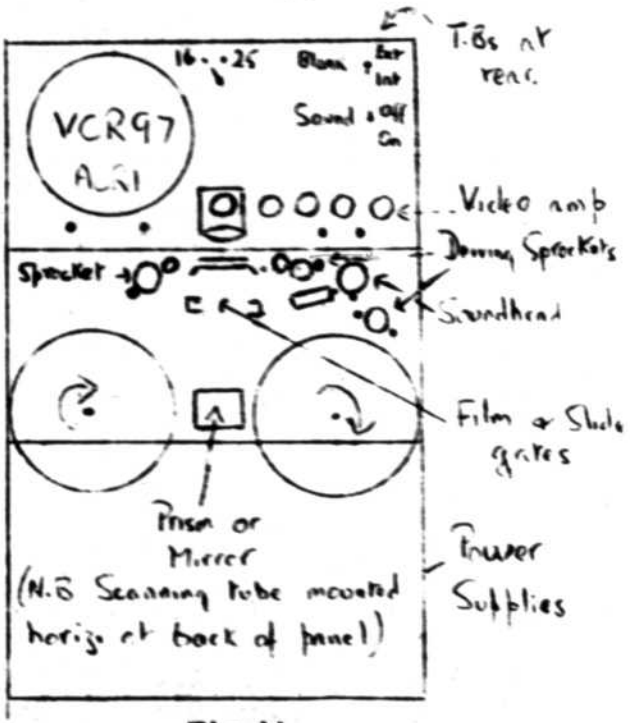



Fig ii

The middle panel carries the scanning tube (5FP7, 3FP7, etc) at the back, the main lens in an adjustable mount (to allow for different sizes of transparency), a prism or mirror to bring the scanning rays onto the film gate, the film drive, spools, soundhead, and interchangeable gate.

The bottom panel is for power supplies. The motor is mounted on rubber mounts to prevent trouble with microphony, the gears being brass/tufnol in the interests of noise. Suitable sprockets for any size film can be obtained from Specto Ltd, Vale Rd, Windsor, Berks, or from Cine Smith Ltd. The latter firm will also make up multiple sprockets for 8mm, 9.5mm, and 16mm films. Interchangeable gates for film or 2 x 2 slides are fitted, suitable clearance for the larger size being left.

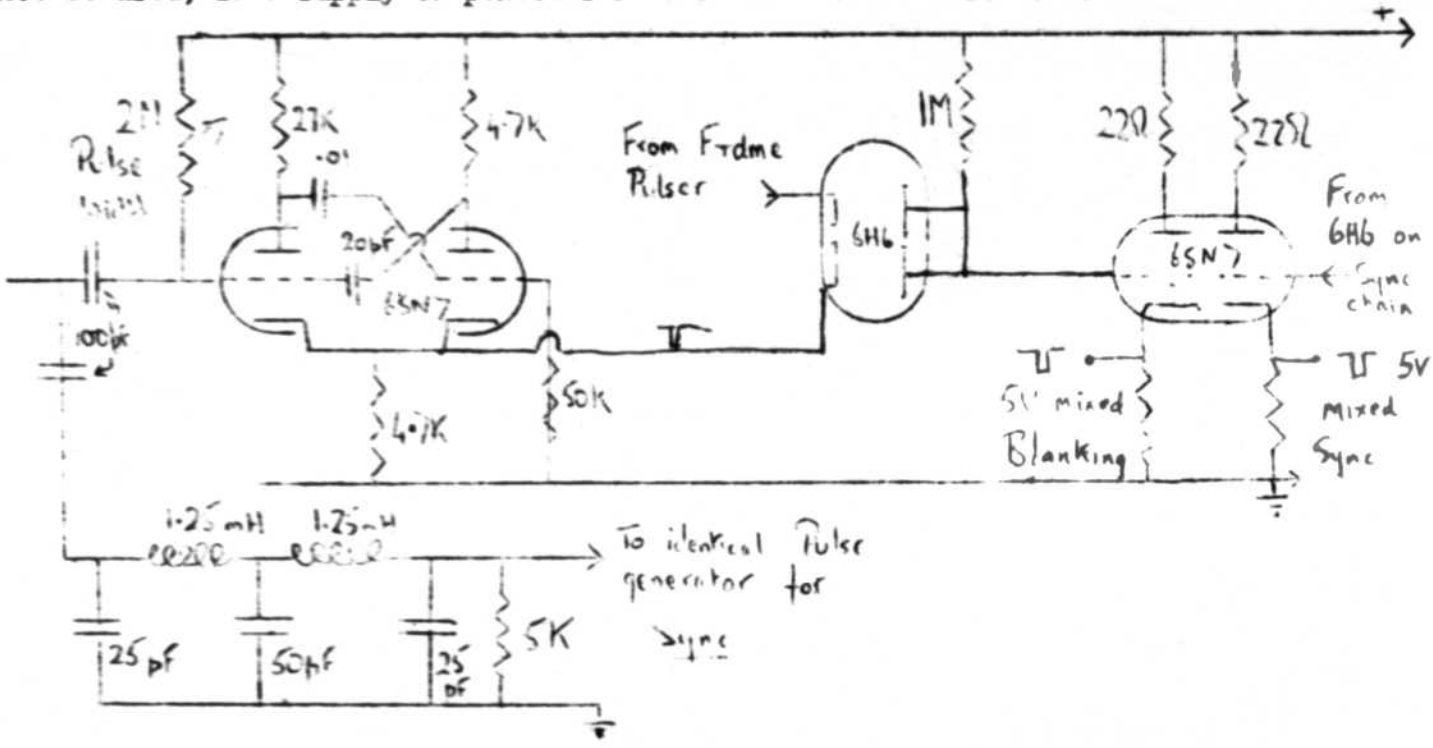
The unit is designed to give 5V output, and as shown the output is unblanked. A switch selects a suitable pulse from the time base for blanking if the unit is being run independent of a proper pulse generator. External blanking and line sync can be fed in, and frame sync is given out. The monitor tube has its own video amplifier built in, so that the unit can be used on its own for demonstrations. Refinements such as gamma control and automatic black level adjusting circuits can be incorporated if necessary. Remember that the scanner needs a separate frame time base to the monitor, as they are running at different speeds.

## A SIMPLE SEQUENTIAL SCAN PULSE GENERATOR

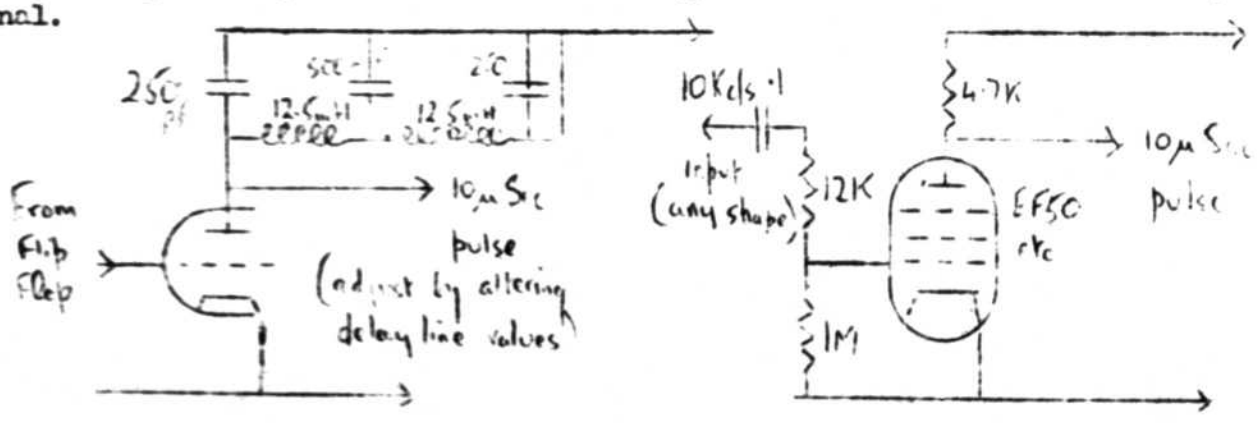
by A.E.Sale.

The first part of this article appeared in "CQ-TV" No. 14, and dealt with the general design of the unit, and the stages up to and including the 12.5 Kc/s Flip-flop. It will be remembered that this design avoided the use of too many controls. The next stage is to generate the sync and blanking pulses, and the simplest way of doing this is to differentiate the square-wave output from the flip flop, and to trigger two pulse generating circuits with the "blip" produced. It is necessary to insert a ½ µSec delay in one lead, so that the sync pulse starts ½µSec after the blanking pulse. If half-line pulses are also to be inserted later, an extra delay must be put in that circuit too.

After the pulse generating circuits come the mixers for mixing frame and line blanking and sync, and then cathode followers to give a 5V output level, pulse negative. The precise form of pulse generator is immaterial; multivibrators have been indicated, but there is no reason why transitrons or other pulse forming devices should not be used, if a supply of pentodes rather than double triodes is available.




For those with an experimental turn of mind, one double-triode can be used to give both pulses by either of the methods given below. Circuit values are purely nominal.



**TELECINE** Contd from Page Five.

The resolution obtainable on 16mm cine film is of the order of 800 lines, and proportionately less for the smaller cine gauges. The maximum resolution that Mr Short has obtained is 500 lines with an intermittent type of scanner. He states that a good deal of the trouble with the intermittent system can be counteracted by the use of a long blanking pulse, which should be derived from the motor shaft, either by the use of a contact, or a disc and photocell combination. This pulse blanks out the raster during the pull-down time of the mechanism, this method working much better than the mechanical shutter, which should be removed. The blanking pulse is also injected into the video amplifier, where some shading injection will also improve the picture quality.

The sound channel (if any) on the film is dealt with in the normal way. An exciter lamp (DC or low voltage AC) and a 931A are ideal. A high value of PEC load will give sufficient output directly to feed into the low level audio feed in the "studio".

Suitable synchronous motors can be obtained from Alpha Radio, Leeds. 24V Delco motors are used by G.Short.

.....:.....

## A COMPARISON BETWEEN THE E 4205 E7 WITH THE ACR1

Robert Torrens, GI3FJF/T, writes: "The E4205E7 G.E.C. 2¼" Blue screen CRT gives very good pictures, except for some slight granular effect, and a rectangle of brighter illumination towards the centre, just visible on thin negatives. The face of the tube is very flat, and sufficiently thin for good results to be obtained without leneses. The tube is run at 1400V EHT, and is available at £3-10-0.

"The ACR1 I have has a yellow screen, although a blue and a white version is also available. I find a lens system essential in order to obtain sharp pictures, and the lens must be a good one. The screen material seems to show no granular effect and the illumination appears to be very even. One has to be much more expert to get good pictures with this tube, but it has the advantage that gradation of light and shade is much easier to get to agreeable proportion than I found possible with the blue screen. The signal, with 3,000V EHT, is much lower, and a very much better type of control and mixing amplifier is called for.

"The amount of HF peaking required does not seem to vary much between the two, and both are capable of really fine pictures. The smaller size of the G.E.C tube is an advantage, my camera being 20" long only, and this could be reduced to 17". The ACR1 camera is 4' 3½" long."

Many thanks, Robert. Can anyone supply comparative data for the 5FP7?

.....:.....

**STOP PRESS:** As this goes to the printers, we hear that George Short may be taking his CPS camera to the Dublin Amateur TV Convention on April 20th -24th inclusive. Robert Torrens also announces that his camera is now operating satisfactorily, and highly recommends the Bootstrap modulator. Full details in the next edition. Don Radley has also been doing some work on a simple interlace generator, and details will appear in due course. George Short says that correct blanking on the CPS makes ALL the difference to the picture; details of his auto-stabilising circuit will appear in the CPS Gen Book. Designs for a new cover to "CQ-TV" are invited.

**PHOTOGRAPHS OF EQUIPMENT AND RESULTS ARE URGENTLY REQUIRED FOR PUBLICITY.**

## NEWS FROM OVERSEAS

Two letters have arrived from New Zealand - and neither writer knew of the existence of the other! Firstly, our old friend Graham Goodger ZL2RP has been elected secretary of the TV Committee of the Wellington branch, N.Z Electronics Institute. They have a licence to conduct TV experiments on the 94 - 99.5 Mc/s band, the fee being £2-2-0. A video carrier power of 200 watts, and 20 watts of audio carrier will be used, the station being located in the Wellington Technical College. At the moment, work is in progress on the interlace generator, although Graham is all for starting with something simple such as a telestill unit, in order to gain experience first. Grahams private activities are nil at the moment, as he is expecting a change of house.

Also from New Zealand comes a letter from Ted Carpenter, who is giving TV lectures at the Auckland Tech College. Ted used to be with the GPO on TV here in London before emigrating, and is very keen to get the lads going. There are about 50 of them interested, and they are building up 10 standard 405-line receivers from Pye kits. Work is mainly on paper at the moment, but the idea is to build a telestill scanner first, and go on from there. 5527s are not available down there either. Ted says there is a plan afoot to start an amateur TV Club there, and is going to contact Graham with a view to getting things under way. Good luck, chaps.

Gerry Millerd, VK3XT, writes that broadcast TV will not be ready in Australia for some years yet, as Commissions are still examining the pro's and cons. How about getting an amateur station on the air, Gerry, as did PAØZX and the lads? We know there must be some interest down there, because a series of articles on TV units appeared in one of the Australian amateur radio magazines some time ago.

Gordon Angilley is the Chairman of the Television Society of South Africa, which, he says, in spite of having only just been formed, is flourishing, and has a very keen membership. They are hoping to produce their own magazine "TV-South Africa", and to exchange material with "CQ-TV". From the BC TV angle, South Africa is unfortunate in that the centres of population are isolated and spread out. The potential audience is rather small, but a station is to be erected in Johannesburg shortly. In the meantime, the T.V.S.S.A has three amateur TV stations on the air in Cape Town, one in Jo'burg, and one in Durban (old friends Erasmus and Achurch). The Cape Town transmitters are on 144 Mc/s and use (i) 125 lines 25 frame sequential (ii) 250 lines 50 frames sequential (iii) 405 lines 50 frame double interlaced, all from 5527 cameras. Eventually nos. (i) and (ii) will also be changed over. Positive modulation and vertical polarisation is employed, for (iii), but the earlier units use Negative mod and horizontal polarisation. Radiations occur almost every night for varying periods, a telephone call to the H.Q obtaining any one of the three units on the air. A 10 mile service area is obtained with an 829 grid modulated at 30 watts. The licence fee is 10/- per annum, which is the normal sound-only transmitting fee, i.e anyone holding a normal licence is entitled to transmit TV. Bandwidth employed is 2.5 Mc/s. 5527s can be imported(with persistence!). No doubt we shall hear more from Gordon; how about some circuits, for instance?

Hendrik de Waard, PAØZX, says that the Groningen group are overhauling their camera unit - even to the extent of incorporating a stereoscopic rangefinder coupled to the lens! Hendrik is going to send over photostat copies of the camera circuits as soon as possible; certainly the 5527 results they are getting are the best I have seen - about 300% better than RCA think can be done!

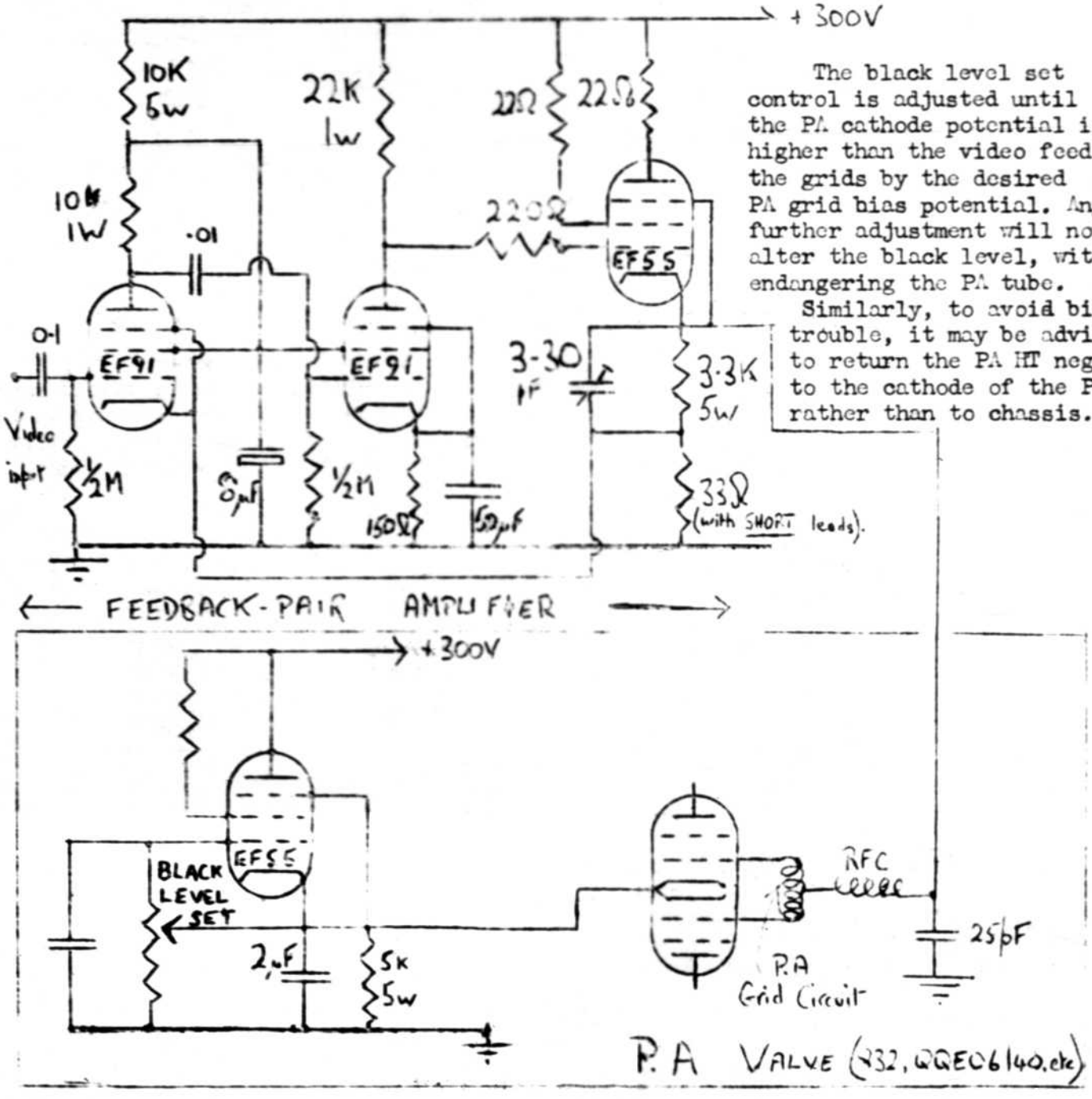
Heinz Richter writes in from Pilsensee that he is interested, so we may shortly have news of activity in Germany. Nothing new has come in from our members in Sweden, Finland, France, Eire, or Canada. However, a postcard from Russ Spera W2UFU/TV states that a U.S.A.T.C is under way, with W4MS/TV at the helm.

PUT A NOTE IN YOUR LOCAL RADIO MAGAZINE; THERE MAY BE OTHERS INTERESTED IN TV.

## A MODULATOR FOR USE WITH DOUBLE TETRODE PAs

Contributed by Dick Grubb, G3FNL/T.

The circuit shown was developed for use with an 832 power trebler stage, (although it could be used with any other valve, as either a multiplier or better still as a straight P.A), and gave very satisfactory results. It is not now in use, as the 832 is not felt to be an efficient valve to use in this manner at these frequencies. The feedback pair video amplifier is from "Electronic Engineering" for October 1952, and by itself is flat from 8 cycles to 8 Mc/s. It is an ideal circuit to use for a waveform monitor, and has a gain of 100 as shown. It will give a response flat to 3 Mc/s when feeding into 300pF, i.e the order of the grid grounding capacitor necessary in a 420 Mc/s GG PA.



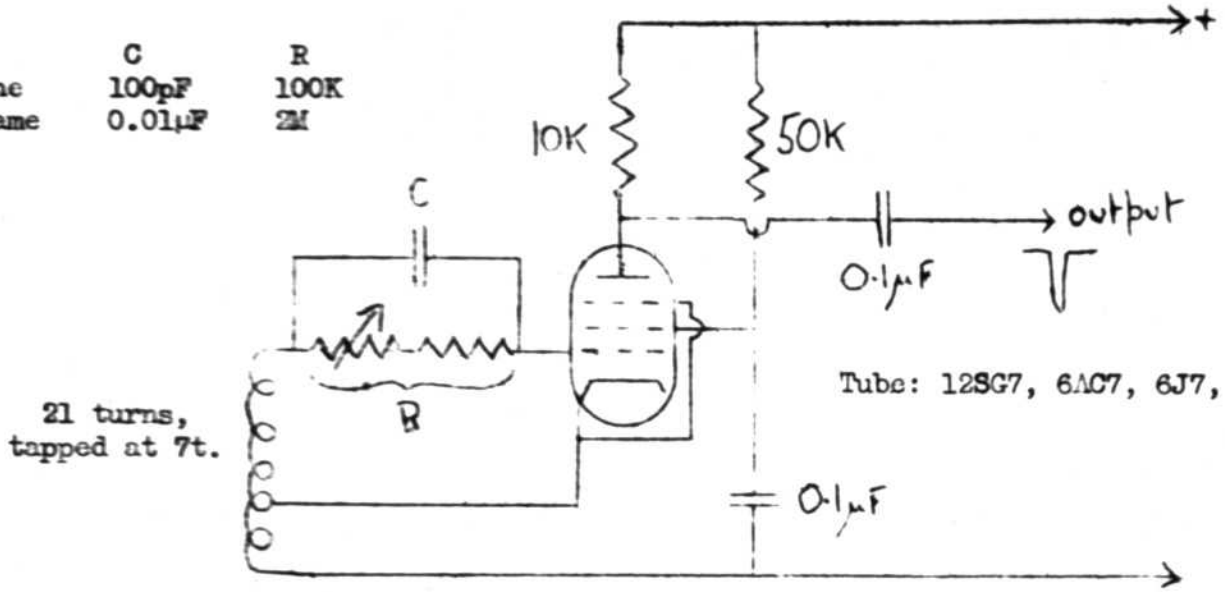

The black level set control is adjusted until the PA cathode potential is higher than the video feed to the grids by the desired PA grid bias potential. Any further adjustment will now alter the black level, without endangering the PA tube.

Similarly, to avoid bias trouble, it may be advisable to return the PA HT negative to the cathode of the PA rather than to chassis.

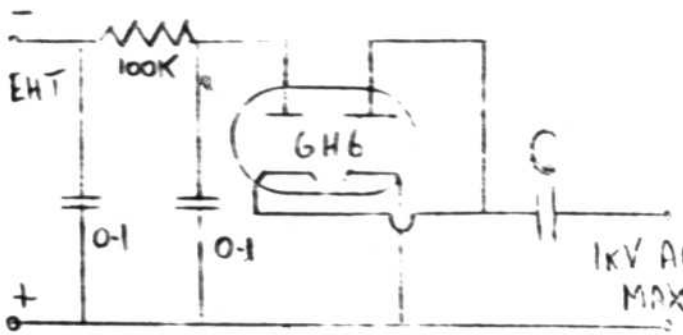
## USEFUL CIRCUITS SECTION

First, here is a simple pulse generator circuit, culled from "Electronics" for May 1951 by Frank Lee. Frank says that a 150V pulse (negative) 10μSeconds long is produced, with 400V on the anode. There is no need to use such a high HT, nor is a 12V tube required, of course. A smaller positive pulse can be obtained from the cathode. Values are given for PRFs of 10 Kc/s and 50 cycles.

| | C | R |
|---|---|---|
| Line | 100pF | 100K |
| Frame | 0.01μF | 2M |




The next circuit is used by Bob Styring, the original being in an old copy of Practical Wireless. A 6H6 is used as a cheap EHT source, the EHT depending on the value of "C", as in the table. The 6H6 heater must be isolated, the valvebase must be a good one, and DON'T TOUCH the metal shell of the tube! Life 1 - 2,000 hours.




| "C" | E.H.T |
|---|---|
| 0.002μF | 1,200V |
| 0.006μF | 1,800V |
| 0.1μF | 2,000V |
| 0.15μF | 2,450V |

The AC input can be obtained from an old audio transformer.

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Have you seen the article in the February "Electronics" concerning a device made by NBC for use in TV studios? It uses 6 valves, and electronically produces the sound of pistol shots, machine gun fire, 40mm anti-aircraft fire, distant cannon fire, and three different varieties of ricochet effect! It is all done by gating the output from a VR150/30 used as a noise source, and introducing echo delays and tone control circuits. The ricochet effect is done with a multivibrator. Have any members any similar bright ideas?

**DON'T FORGET TO SEND IN YOUR USEFUL CIRCUIT, TOO.**

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

Ralph Royle, G2WJ/T, writes in to say that the camera is finished and ready for testing, for which purpose a self-contained transportable 9" monitor plus 436 Mc/s rx is under construction. The 70 cms Tx is now much improved since the CV53 driver was changed from a trebler to a doubler. Power output is now 3 watts. Work on the Det 24 PA proceeds. Ralph says that he is now putting out a regular TV transmission every Saturday at 1800, on 436 Mc/s. For the first ten minutes, he beams N to Cambridge, and for the next ten, SW to London. Reports will be most welcome.

Johnny Hogarth at Blyth now has a 5527, and he is going at it hammer and BA spanners to get pictures across to G3BLV. Also up North, Al Bevington (Bradford) has a tube and is building a camera. By the way, Grant Dixon keeps a "Gen Book" on the manufacturers reject tubes; how about starting something similar for the 5527s? All who have one contribute their gen.... Frank Lee, Beverley, Yorks, has built a Pulser and CRO and the necessary power packs.... George Short now has his reject tube in action, and is highly delighted with it. The insurance people have now settled up the wrecked trailer business, but George has not yet had time to do anything about it. George says he has his camera stopped down to f8 in a 12 ft square room lit by one bare photoflood in the ceiling socket; that'll make the 5527 boys envious! The only blemish on his tube is a tiny pinpoint in one corner. George says the 5527s are really spotty by comparison..... Geoff Hill G3DFL and Ernie Foulds of Birmingham bemoan the lack of activity round there. They have a three-tier telestill scanner running, and an interlace generator under construction. The gear is open for inspection by anyone in the area..... Michael Hill (Sidcup) has finished a 10 valve pulser to BATC standards. He is swotting up Morse, but reckons it will be some time yet.... Ian Macwhirter G3ETI has been doing a lot of work on his camera, and sent in some photos of results to prove it. He exposed a 30° Sch film for 10 secs at f7, and he certainly is getting BBC quality with his reject tube. Ian is going to organise a Northern area Convention later in the year, and would like to hear from volunteers who can bring gear, etc. Harold Jones G5ZT (Plymouth) says he is still putting out a regular transmission (what freq, om?) on the band, but with only one viewer still! M.J.Hitchman, G3HAN, of Wigston Magna, has a telestill unit built up...Alan Lord and the East Grinstead group are still saving up for the camera....Doug Wheele G3AKJ has already circularised the Dagenham and Romford groups with a view to making this year's annual Show bigger and better; the old camera is being overhauled, and a new one being added. Doug is kept busy by I.E.E exams at the moment.

A very interesting letter packed with information comes from Robert Torrens, GI3FWF/T. He has tried a cross between the high stability divider and the tuned oct idea for the frame pulses (see CQ-TV 14); oct tuned to 750 cps was connected to grid of existing 50 cps multivib. The pulse obtained was amplified and clipped, and is used as a keying pulse for the interlace. (Circuits, please, Robert). The main divider uses a ÷ 15 High Stab, and then a ÷ 27 in ordinary multivib to 50 cps. The 931A amp (CQ-TV 14) is used with a GEC 4205 3" blue tube; the PEC load has been increased to 60K. A feedback loop from V3 anode to V1 grid via a 500K pot and 0.01µF gives some extremely fine pictures. Robert tried some negative feedback to the scanner, but without any conclusive result. Recently the 931A went dud for no obvious reason; anyone else had this trouble? After the unkind things said by the pundits, Robert

**New Members this quarter:**

| | | |
|---|---|---|
| A.Baker | | "Eadiston", Chester Rd, Woodford, Ches. |
| D.E.Saunders | | North Down Farm, Sutton Poynty, Weymouth, Dorset. |
| J.Adams | | "Colinton", Bangors Rd North, Iver Heath, Bucks. |
| S.J.Parker | | 37, Craven Gardens, Wimbledon, SW19. LIBerty 5055. |
| P.J.Robinson | | 15, Canterbury Rd, Worthing. |
| R.L.Whorwell | G3CTR | 29 Aspindon Rd, Rotherhithe SE16. |
| E.Lambert | G3FKI | 68, Lower Rd, Rotherhithe SE16. |
| E.A.Dedman | G2NH | 75, Woodlands Avenue, New Malden, Surrey. |
| B.G.Roberts | | 41, Puriri St, Miramar, Wellington, N.Z. |
| F.Northwood | | 6, Guildford Rd, Harold Hill, Romford, Essex. |
| B.A.Bisley | G3JRC | 53 Ommarey Rd, New Cross, SE14. |
| Jeff Jeffries | G8PX | 1, Lovelace Rd, Oxford. |
| J.Brewster | | 3, Weardale Terrace, Chester-le-Street, Co. Durham. |
| K.Cooper | | "Hayreed", Gallows Lane, Sands, High Wycombe, Bucks. |
| H.G.Cox | | 68, Sherwin Rd, Linton, Nottingham. |
| J.F.Anglin | G4GZ | 160,Cloethorpe Rd, Grimsby, Lincs. |
| J.A.D.Lobb | | 28, Annesley Drive, Shirley, Croydon, Surrey. |
| Marquard Vos | | 1, Springbok Rd, Green Point, Cape Town, S.A. |
| L.E.Bleay | | 29, Upper Rhine Rd, Sea Point, Cape Town, S.A. |
| J.H.Neethling, | | "Devon", Avenue Le Hermit, Sea Point, Cape Town, S.A. |
| C.G.Angilley | | 61, Strand St, Cape Town, S.A. |
| S.Liff, | | 30, Rona Court, 259 Bree St, Johannesburg, Transvaal, S.A. |
| F.Lee | BRS18002 | 11, Railway St, Beverley, E.Yorks. |

Changes of address: P.Parkin, The Fox and Hounds, Chessington, Surrey; I.Howard, Sunnyside, Wallington, Nr-Baldock, Herts.

OTHER BLOKEISMS: Contd.

fired up the 832-8012 rig again recently. The drive was around 5mA to a 2K grid leak plus 12V fixed bias. With 300V HT and 15 watts input, the signal was S9+ 20dB at 18 miles range; the transmitting antenna was a 16 ele stack, but a 48 ele stack has now been built prior to tests to get pictures across the 115 miles to Scotland. Modulation is by the bootstrap method given recently in "CQ-TV".

Down in Oxford, G8PX is starting work on a telestill unit. He is active on 70cms already, as are G3EHB (4 miles) and G2AOK (20 miles).....P.J.Robinson, last seen at one of G2DUS's shows, is now in Worthing with a 35 mm scanner.... G2RD, G3JRC and S.J.Parker, all in the London area. offer assistance with reports on TV signals. G2DD is equipped for 70cm TV reception, too....John Nettell collecting bits...Dalton Raby is trying to get a PAØ call from the PTT, but has temporarily had to give up TV due to his migratory habits...Don Radley has a telestill unit built; interested, Derby? Robert Buchanan too, now after a camera tube. Norman Harris wants to contact other BATCs near Putney.He's had the tape recorder bug recently. Ian Waters now has a new rack containing the bits that were missed at the RSGB show; all outputs to BATC standards, too! He is putting on a show at Chatteris in August. Jack Lane's 5527 is going home - it now takes 1½ HOURS to heat up! Jack is after a Vidicon, too, but does not think the 5527 is worth passing on. Grant Dixon is re-organising his power supplies so that he can run the 5FP7 Monochrome scanner as well as the 3-colour camera. All this will be demonstarted at a Hobbies exhibition at Ross on April 9th, 10th,11th. David Nolan is holding an Amateur TV Convention in Dublin on 20th - 24th April incl, and would be very pleased to hear from anyone with a camera willing to go over there, ALL EXPENSES PAID. Contact him at 3, John St, New Ross, Co. Wexford.