

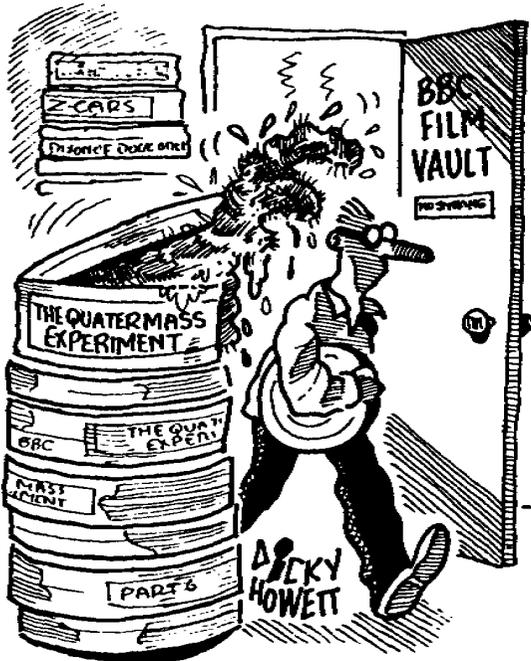
405 ALIVE

OUR SECOND YEAR.

The Newsletter of
the 405 Line Group.

ISSUE 5, January 1990.

Editor Andrew Emmerson, G8PTH

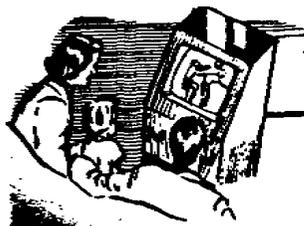


IN THIS ISSUE:

Your Letters	3
Feedback	12
Picture Page	16
Book review	19
Trade news	21
Technical news	21
The Test Card and the Telly Shop	22
Reviving a pre-war TV receiver	24
Servicing valve receivers	28
The Chimes of Big Ben	33
Tales of old TV	34
Simple 405-line Pattern Generator	34
Strange but True	39
Notes and Queries	40
Market Place	41

"We keep 405 alive - do you!?"

"405 Alive supports the BVMS and the BATC"



EDITORIAL

First of all, welcome back and thank you for re-subscribing. Your support is appreciated and in fact, at the time of writing, over half of you have re-subscribed. This means that the others have either forgotten or else they decided this was not quite their cup of tea! Never mind, I'm sure others will come along and take their place. You can do your bit by publicising the group and encouraging others to sign up.

Thanks go to Dicky Howett for our cartoon this time - it should raise a chuckle or two and there'll be more to come!

One of the things people ask from time to time is whether 405 Alive or the 405 Line Group is a club or society, and the answer is no, it isn't, at least not yet and perhaps you're wondering why that is. If you think about it, this means that the Group is not a democratic society - shock horror! - and indeed it puts me, your editor, in the role of 'benevolent dictator' (or at least that's how I view myself!).

A properly-run club would be very nice, but who would take on all the tasks of running it? Not me, I haven't the time. In the longer term I think our aim should indeed be to make the 405 Line Group a democratic society and perhaps even as a recognised educational charity, but at this stage it's difficult to see what advantages that status would bring. We don't really need a secretary, treasurer or other officers because apart from this newsletter we don't actually do anything!

I'm all in favour of democracy of course and if other people were prepared to take on those roles I'd be delighted. I don't see that happening immediately but let's wait and see what happens ...

In the meantime are you happy with the way 405 Alive is going? Would you like to see expanded activities - and would you be prepared to organise them? Write in with your opinions.

Lastly, people have asked what is the editorial policy at 405 Alive? Simply stated, we print all that is submitted by you, the readers. In this way, the content reflects your interests. A certain amount of early 625 line colour is starting to creep in: I'm not objecting and nobody else has done yet either. Equally if we receive articles on the Baird system or early foreign 441 and 455 line systems, we'll print them too. The basic assumption is that you want to read about the history of television in its broadest sense. That said, our chief aim to keep 405 alive. Again, if you disagree write in and say why!

Andy Emmerson.

LETTERS, WE GET LETTERS ...

* From David Boynes, Winlaton:

I read in the *Sunday Post* newspaper that a 50s TV sold at Christies saleroom for £300. I would guess it would be a bakelite Bush TV22 or TV62.

Back to the Poly Chlorinated Biphenol (PCB - see safety item in the last issue). I have spoken to Gerry Wells at the Vintage Wireless Museum about this subject and he believes that the Murphy oil-filled transformers are safe. But he reminds us that the Visconol X capacitors could contain PCB.

I have just finished servicing my Pye FV1 TV. Almost every decoupling capacitor in the sound vision strip had to be replaced: the capacitors were of the dreaded Hunts type.

The set is now working reliably, displaying a bright picture. I have french-polished the top and front of the cabinet with a clear polish. The last time the cabinet was french-polished was in 1961. I think the set would be a good receiver for the 405 Alive display at Harpenden.

Editor's note: these Harpenden events are organised by the BVWS and open only to their members, details on back page.

* From Peter Matthews, Colchester:

I obtained a 405 line

recording: at present I don't have a VHF modulator and I really wanted to see what was on the tape. I thought I might be able to get it on a UHF 625 line set, so I got one of my many sets in from my shed. It was a single standard UHF 625 line Ferguson valve set, circa late 60s/early 70s.

I plugged the coaxial cable from the VCR into the TV and of course got a lot of wavy lines when the set had warmed up. I adjusted the line hold and the picture was there, and with a few minor internal adjustments the TV was able to display the 405 line signal and was easily restored to 625 line working. I have also found excellent results when copying the 405 line tape onto Betamax or V2000 format with slight adjustments to tracking occasionally required if recorded on other machines.

Good work: several dual standard sets can have their switching altered so that they can handle 405 line signals on UHF. [AE]

* From Ray Whitcombe, Kingsbury:

1. Could not someone organise an official and legal 405 line format video tape and copies for us to use? Perhaps a well set up standards converter could be used. I am sure members of our group would be glad to offer an 'economic' price for such a service. OK people can do this themselves but unless everything is

perfect, the quality can suffer a great deal and the end result does not do justice to the 405 line standard.

2. I have a pre-war *Wireless World* front cover which shows that the problem of motor car interference to TV was being appreciated early on! In the 1930s electrical interference was a constant subject for discussion in such periodicals and the industry in general. However, as always, it took many years for any legislation to be generated!

3. (Issue 4, p. 34) I have recently restored a Pye VT4. When it came to the time to align the RF/IF it gave some very peculiar response curves on the 'scope (treble and quadruple humps!). The cause was most of the Hunts decoupling caps had gone high impedance! When they had been replaced - perfection!

4. (Ref. issue 4, p. 34) Very interested in the 'safety' article but did TV manufacturers ever use PCB oil? A long time ago I enquired on the oil used in a HMV LOPT and HMV replied that it was basically Vaseline! (That was pre-Thorn HMV, the real one!). Please could you (or someone else in the group) check if these toxic substances were ever used in the domestic sector.

1. *No technical problem on this, only the copyright, which can involve a lot of organisations. I understand there is a very good digital standards converter at the Vintage Wireless Museum in south London, which may be used by arrangement, and at least two 405 Alivers have*

their own digital converters. Both of them will copy over limited amounts of material if asked nicely but to avoid swamping them I won't give their names here.

Perhaps one of the group who is well informed on copyright could sort something out. Otherwise, I don't think you are doing any harm if you buy, say, the BBC 'Watch with Mother' tape and make/have made a 405 line copy. Apart from that, later this year I will be offering top quality VHS tapes of Test Card C (and other test cards) on VHS tape.

3. *Old capacitors, especially those brown tubular Hunts ones, are devils. If I see any I replace them at once! Fortunately most other components are more stable.*

4. *The balance of opinion now is that PCBs were not used in TVs. Unless someone else knows better, that is ...*

* From Andrew Redding, Rotherham:

Could we have a series of articles on how to identify old TV sets by the model number? We all know what a Bust TV22 is, and a lot of us could identify some post-war TVs but I was amazed to hear of the VT50 TV mentioned in the latest newsletter.

My main interest in collecting TVs is pre-war sets (which I don't own yet!) and early post-war types with mains-derived EHT systems and 'big' valves in them (i.e. EF50, EL33, etc.).

Whilst I know a lot about

pre-war sets through reading magazines from the late 1930s, other than sets I have seen mentioned in Newnes' *Radio and TV Servicing* I'm at a loss to know which post-war sets were made just after the war.

People often ring me with 405 line sets they want to dispose of (usually sixties sets that I'm not bothered about!) but it would be a good idea to run a series of articles reviewing the types of sets available over the years so that I or indeed any other collector could instantly know whether a TV was interesting enough to go and look at!

By the way, Andrew Denton's Bush TV24 is now in my possession! Re the conversion of 405 line TVs to 625 lines, I plan to do it by feeding the video and sound outputs of a video recorder into a home built (valve) modulator. That way a signal can be put into an old TV using most of its electronics. I would run the existing line timebase as an EHT generator and build my own (separate) 625 line generator. The frame generator, sync and video circuits could be adapted to suit the 625 signals and would provide a passable picture with the minimum disturbance to the TV set's originality.

No doubt there may be drawbacks in this scheme but it would be better than ripping out all the innards and putting in (horror of horrors!) a transistor TV set!

Andrew's idea is an excellent one - would someone like to have a go at this? Choose a year of you like - we could do this as a joint effort. Don't

look to me though, I'm not qualified (but I'll happily print your efforts!).

* From Tony Emery,
Bournemouth:

I've just read the latest *405 Alive* from cover to cover! I really can't resist, as you suggest.

Re the solid-state test card generator, yes I'm very interested. I've given this a lot of thought myself, but being more of an "RF" person, I'm afraid the world of bits, bytes and nibbles is a closed book to me. I've mentioned the idea to several digitally-minded people but they have not been much help. So count me in! (625 line version would be best for me).

This letter is just one of dozens of notes and phone calls I have received on this subject. Yes, designing one of these gadgets is a highly specialist task, one which probably only a few people in the country know how to tackle. I hope the person who suggested this idea now feels it would be worth pursuing, but equally I know he has a lot on his plate. Let's see what happens ... In the meantime, Malcolm Burrell has designed an easy-to-build simple pattern generator for 405 lines which uses common or garden chips you can probably buy at Tandy. We publish this design in this issue. [AE]

* From A.S. Redding,
Rotherham:

Regarding your editorial and the price to pay for old

TV sets, I think that people will pay 'collector' prices if they are stupid enough to do so. I am sure there are thousands of second-hand dealers with sheds full of 405 line TV sets who, if they get wind of their being 'collector's items' will put a ridiculous price on what was previously unsalable obsolete electronic junk (but not to us of course).

However, I would have thought 50p was a bit miserly to pay for an old TV especially as many have sentimental value to their owners and have been treated as well looked-after pieces of furniture.

I would have thought that anything up to £10 would be reasonable and if the word gets round that you are willing to pay a reasonable sum, then it is surprising what turns up. This is what I have found whilst collecting vintage wireless equipment.

In conclusion, let us hope the newsletter brings together 405 line TV and the enthusiast who loves old sets for what they are and let us not encourage the 'Art Deco' furniture collectors who collect them because they are pretty. People are already paying vast sums for that damned Bush TV22 but let us not start paying that sort of money for other 405 line TVs. After all it is a hobby, not an investment.

Has anyone got any good deals through our small ads? Please drop us a line and share your good luck stories with all of us ...

* From Dave Hooper,

Templeogue, Dublin:

Many thanks for the 3 copies of 405 Alive. It's very pleasing to know that other people have an interest and appreciation for 405 equipment and all that happened in that era. Every page has triggered memories.

In 1949 or 50, I built the Premier Radio VCR97 TV Kit. It was sold in 4 parts if I remember correctly, which was just as well because I could be building one whilst saving up for the next. I made the sound unit first as I couldn't wait to get something going.

When completed, I had just two faults ... crossed wires causing upside down picture, and short frame scan due to leaving out the HT feed to the frame amp screen grid. Watching the green screen for too long in a darkened room affected the colour response of your eyes and on putting the room lights on all white objects appeared pink for some time. I had the set for a long time and only ever had one breakdown which was the EHT winding on the mains tranny going down. This just have been a known weakness initially, because Premier re-wound it for free. The winding by the way, was 1.4 KV into a voltage doubler.

I recall ten of us, family and friends, watching the Coronation on this postcard-size picture. Only the second TV in our street. Later I fitted a VCR517c to get a blue picture which was quite good to watch.

I worked at Raymond Electric in north west London, on radio

assembly and the prestige of building this kit got me moved to 'TV test' where I did alignment on the Raymond F49. This set was a TRF and with no wob' available we would sweep the gene' over the band by hand whilst watching an output meter, and 'draw' the response curve out in our mind's eye.

Raymonds bought out Beethoven Electric to have another name to trade with, and we had to make fit for sale the 'job lot' of Beethoven TV50's. These had an I.F. which included 14 Mc/s, I didn't like these because I'd just got my licence as G3ICU and considered 14 Mc/s as ours, and sets with this I.F. as trouble. Our own Raymond superhets were 34-38 from the start.

We set up our 10" round tubed F60's to the trade test transmission that was a composite of past programmes like a potted history, It started with that well known piece 'Do you remember me?' (Jasmine Bligh), which I believe was from the first post-war transmission. Our superhets were factory tuned to one of the band I channels, but could be re-tuned by a dealer if required. Later we used the 15" metal coned tube with a thick poly' shirt for insulation. We didn't like these for if the shirt had a pinhole ... you got zapped.

At home I built a band III convertor in time to play with aerials etc. on the Croydon test pattern, and the night before the official opening was rewarded by viewing the 'unofficial' opening where they took the camera round the studio to informally talk to

the workers. What a thrill that was, I remember tuning from noise to picture and back to noise just for the novelty of it all. At least a year before 625 came in, we were making 625 sets for Italy and Australia. The I.F. for Italy was vision on 46.75 and sound on 41.25. Australia was V. 36.0 and S. 30.5, both with 300 ohm ant inputs. We had an Italian Monoscope test gene' supplied by the firm who ordered the sets, and also our own 405 test card C monoscope. We also had by now a wobulator covering IF's, Band I and Band III, which was piped round the test dept.

After a spell on the Turret Test line (Hayer, Brayhead, and Fireball) I got the job I really wanted, test gear construction and maintenance. I'd joined the BATC in 1954 so this job was made to fit.

Raymond Electric became Emerson Electric in 1958 or 9 and built American Emerson designs suitably anglicised, both transistor radios and TV. In 1962 we sold the factory to Dansette, but the team with Mr Raymond at the helm moved to Dublin and set up the Waltham Electronic factory to hand-build and later 'auto-stuff' portable TV etc. at a time when most others were bringing in Far East chassis. Around 1970 I dropped out of the BATC, let my licence lapse and generally was too busy to enjoy radio as a hobby, a sad state to be in.

Ten years later our factory closed down and I found myself in a completely different field. The pleasure of radio/TV as a hobby has re-asserted itself, and I'm

pleased to join the happy band of 405 Alive.

I'm afraid I've gone on a bit, your newsletters have opened the floodgates of memory. At the moment I have two 405 sets, 1 dual standard, and a UHF/VHF convertor, (VHS gear too). I've been going round the older repair shops to hunt out a 405 pattern gene not yet thrown out ... I should have done that years ago.

* From David Boynes (again!):

The EMI mirror view TV is now in my possession. It appears to be a Marconi-branded set. The restoration of the cabinet will be the most difficult I have ever undertaken as the veneer has peeled off the front and the top, and some deformation of the cabinet has taken place.

It appears that the electronics of this set are the least of my worries.

I will take photographs of restoration stages of this set and it might even be a good idea to video it too. I think the Harpenden 405 line converter demo was well received by the early TV enthusiasts.

[Yes it was. In case you're in the dark about Harpenden, the British Vintage Wireless Society (BVWS) holds a swapmeet and demonstration/exhibition of old radios and TVs there twice a year. This is a members-only event so to join in you must become a BVWS member (see back page).]

* From Martin Loach, Oxford:

Many thanks for the recent newsletter. I seem to be one of the people who can't leave it alone until I have read it from one end to the other (usually backwards).

Thanks for the new section called software news. I have little idea of what is available on video, and was pleased to learn that the Thunderbirds tape has those adverts. When looking for this in the shop I also discovered that a very early original Doctor Who story (from the William Hartnell days - the real Doctor Who?) is also available.

Fascinated to see the mention of Norman D. Cooper. My letter to him (in response to the ad in our local rag) came back 'addressee unknown'.

Incidentally I am interested in both the standards converter and the Test Card C generator projects. I would be likely to buy any PCBs etc. that were available, even if I have to wait before I have time to build them. I'm currently restoring my Pye VT4 which I've had for two years. Might get around to the B16T soon!

The mention of oil in LOPTs from Murphy sets brings back memories. I used to dislike doing anything with these sets as they were often as oily inside as my car engine. How sure is David Boynes that this was PCB? [he says it's not, see above]. This is something someone needs to do research into. I would have thought that there would have been a number of TV engineers suffering skin cancer if this

was PCB, but better to be safe than sorry.

David's last comment about VHS ghosting - my Sony C5 Beta machine works well at 405 with no ghosting problems at all. So much for the VHS 'standard'!

At least VHS is still a force in the market ... !

* From Dicky Howett, Chelmsford:

I seem to be shuffling my brain into some sort of order and turning up all sorts of TV memories, bits of film and photographs. I recently came across some photos I took at Southend in 1957 when an ATV O.B. unit was covering the Carnival (Anglia TV was two years in the future.) Several of the photos show Pye cameras (Photicons of the image orthicon sort?) Now that's a problem with me. I know what all the old cameras look like and can even name them, but I fall down with Mk numbers. (My article mentions a Marconi camera Mk III; I assume that's the 4 1/2" image orthicon job with the tilting viewfinder circa 1957?).

It would really help idiots like me if '405 Alive' would print a 'check-list' showing a range of cameras with their names/makes and Mk numbers. Perhaps Bob Warren could list his collection at Thames? Which reminds me, I really must wangle a way of seeing that collection!

Your idea of a checklist for cameras is a very good one: fortunately we have in the group two experts in the form

of Brian Summers and Paul Marshall. I shall try and twist their arms! Bob Warren's camera collection (it belongs to Thames TV actually) is currently bricked up in north London: this way the vandals and souvenir hunters cannot get at it. They will have to drill out cement and breeze blocks to unearth it!

* From Stephen James, Nottingham:

In the latest issue, I particularly liked Malcolm Batchelor's light-hearted look of BBC2's trade test transmissions. It's nice to know that there are others interested in this particular period of TV history. I also enclose a couple of photocopies of July 1968's edition of Mullard 'Outlook' which adds a little more information to the picture. The photo of the BBC2 control room of that time is really excellent, even showing the hands pulsing round on the clock to 2.30 when service information continued for the afternoon session. Several of these Mullard leaflets contain useful information on early colour transmissions including the introduction of Test Card 'F' and notices on new demonstration films, so I shall dig deeper into the pile when I get time.

Also on the subject of early colour, you are doubtless aware of the rarity now of these first generation colour televisions. So far I have only come across three, although a few years ago they were being offered very cheaply in the back pages of *Television* in the ex-rental

warehouses. Nowadays they are rarer than the proverbial hens' teeth. Peter Stanley has got one, which I'd like to take on eventually (it's a Thorn 2000). The latest one I missed, however, was in fact yesterday - on chatting to the owner of a local shop that sells reconditioned sets. When I mentioned that I am interested in these sets, he told me that just the other week they had a 25" Marconiphone (2000 series again) which was working but had been traded in just because of its age. It had been lying around and getting in the way in the workshop, so apparently they too great delight in hammering it to a pulp in the back yard! It's always the same - you only learn about these things when it's too late! It would seem that people don't realise that these sets may now be collectible (if only just).

On the subject of the cost of our hobby, it of course is dependent on what era of sets you go for. Obviously pre-war models and the inevitable TV22s will be expensive, but there are alternatives. I must say I really prefer models of the late fifties and sixties, which have yet to be 'discovered' and that will (I guess) form the basis of tomorrow's collectibles. Dual-standard monochromes are still regarded as throwaway, although there are some interesting designs around if you look. It's probably only because I'm fairly young that I regard 20 year old sets as collectible. I suspect that people who grew up with them and even serviced them don't consider them as such. Maybe I'm wrong - I don't know.

* From Roger Bunney, Romsey:

If anyone is looking for a cheap (modern) multi-standard with PAL, SECAM and variations of NTSC, then look at the Sentra STX600 selling at around £179 at Co-op shops. It has infra-red remote control and VHF/UHF tuner. Nikkia (another label) has the same thing on the market at a similar price.

* From Gary Platten, Craghead:

David Boynes and I managed to get a picture on my Decca 1000 projection set. David realigned it for channel 1 as it was tuned to our Pontop Pike channel 5. The results were good, in fact better than I thought it would be. The sound quality isn't as good; I thought judging by the big loudspeaker that it would be but David says the output is only about 2 watts. The focus valve needs replacing and the optical unit lining up slightly. It was good to see test card C on the wall - I must now make a screen for it. I would like to hear from anyone who has memories of this set.

You can write to Gary at 2 Callerton Place, Craghead, Stanley, Co. Durham, DH9 6EJ.

* From David Boynes, Winlaton:

This year I shall start breadboarding a digital Test Card C generator, starting with a sync pulse generator for 405 lines, a grey-scale pattern with definition bars and so on. Last Thursday I

brought a 1952 Cossor 12" model 927 TV from my garage to the workshop and although it had been in the garage for four years we got it going very easily. All that was required were a new mains lead, two fuses and a PY82 valve.

* From Barrie Portas, Grimsby:

For light restoration of TV cabinets I recommend TOPPS scratch cover polish. It comes in three shades, Light, Medium and Dark. Suitable for wood or bakelite.

York Castle Museum has a small display of old TVs and radios, including a TV22 giving a continuous programme of vintage material (including Coronation Street, Flowerpot Men and old newsreels. The two front knobs are missing from the TV. It looks like a modern set has been put in the case. Perhaps someone knows?

* From Alan Keeling, Birmingham:

Thanks to 405 Aliver Bob Jones of Croydon I am now able to further my collection of early ITA test card 'C' L.P. music (thanks also to my local record deletion specialist). I hope to write an article or articles on early ITA trade test music, concerning personal memories, artistes, choice of records, etc..

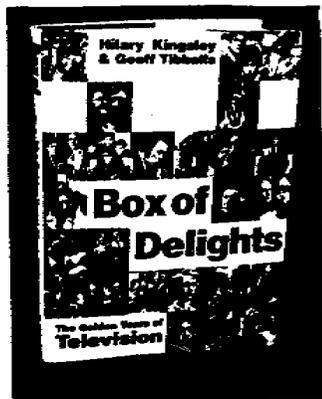
Yes please Alan ... this would be most welcome. Unlike the BBC, normal commercial recordings were used on independent television's trade test transmissions.

OTHER NEWS

We now have an arrangement to swap newsletters with the Narrow Bandwidth Television Association (NBTVA) and in case you haven't heard of them, you should be aware that they look after people interested in narrow-band TV, ancient and modern.

Thus they cover the early disc-scanned systems such as Baird's as well as the latest computer-assisted techniques for getting clear pictures with few lines. Their fascinating newsletter regularly contains historical articles on early (pre-405) TV, plus constructional projects and news in general.

Membership costs £3 a year and cheques or postal orders made out to NBTVA should be sent to the treasurer, Mr N Reynolds, 6a Collingbourne Road, London, W12 0JQ.



see page 19

-----+
| FEEDBACK |
-----+

* From Malcolm Burrell, somewhere in the Netherlands

I enjoyed issue 3 of 405 Alive. Perhaps I can comment and elaborate.

Firstly, re my piece on experimental Colour Transmission, the other feature film which starred Lloyd Bridges was in fact the White Tower.

Trade Transmissions: In London the ITA test transmissions during the sixties alternated two contrast pictures with Test Card 'C' on alternate days. The first was of Tower Bridge whilst the other was of the Sphinx... the latter, being very dark, was quite a stringent test of contrast and black level (or as was the case at the time) LACK of black level clamping on the monochrome sets of the era. You will recall all those adverts for soap powder where the sheets on the line seemed to gleam (unless you had an ailing CRT, of course). These tended to cash in on mean level AGC and lack of black level clamping.

The fact was that sets were made for a price. Until the very late fifties there was a proliferation of British manufacturers. HMV, Masteradio, Ambassador, GEC, Sobell, Bush, Vidor spring to mind. Then came a credit squeeze around 1959/60. This was the beginning of the end. Some disappeared whilst others became the badge-engineered tools of the survivors. Ultra, HMV and Marconiphone joined the Ferguson stable at Thorn. GEC found refuge with Sobell and McMichael in Radio and Allied etc.

It's notable that one 'manufacturer' did survive - that was Derwent who were primarily a rental company with a factory in Perivale. It was to be the mid-sixties before they abandoned manufacture of chassis and began to use Plessey chassis. [Incidentally, when Plessey stopped TV manufacturing, Derwent turned to Philips for supplies.] These Plessey chassis also found their way into RGD, Regentone and Peto-Scott receivers of the era but suffered badly due to heat dissipation. Not so the Derwent sets which used an auto-transformer in place of the destructive mains-dropper. They also had another almost unique 'Derwent' feature - replaceable cabinets. Four screws permitted the polished top and side panels to be slid upwards and replaced if badly scratched. These were, of course, dual standard sets. It's interesting that Derwent also fitted new LOPTX, 625 IF and valve UHF tuner to sets to convert to 405/625 operation. But they had a 405 receiver with 90 degree 17" tube where, apart from the additional IF, system switch and tuner, they 'juggled' the existing LOPTX connections. It worked well for its time.

'Jumping commercials': This is an interesting topic. Remember that commercials are locally originated whilst many programmes come from remote sources. Even with mains locked sync it's still necessary to lock remote and local sources to avoid picture 'roll' when cutting from one to another. Let's also remember that power supplies of early sets were 'rudimentary' by today's standards so some ripple could be present. Using a master slaving unit, locally originated pictures had to be locked to remote programme sources with, in some cases, a substantial ripple running through the final frame(s) of the commercial. This was often apparent on other material - e.g cutting to ITN etc.

'Was 405 Used Anywhere else?' Yes. In Hong Kong. [Yes, Malcolm is right. I have in World Radio TV Handbook (1972 edition) and I see that Rediffusion ran a 405 line cable (not over-the-air) network there.]

Unhelpful ITV? I'm surprised Keith Hamer found commercial TV companies unhelpful in the early sixties. When I was at school I wrote to EVERYONE and invariably got a reply. I even wrote to Prof. Denis Gabor about his projected 'flat' tube for colour TV and eventually met him. The thing is that the commercial companies tended to run on a shoestring at the time and hadn't got their act together as far as 'P.R.' was concerned.

Restoration: The question of 'restoring' old sets is interesting. I would think a good clean is sufficient if they are to lie dormant in 'as found' condition. To 'live' again then a lot of preventative maintenance is necessary. Certain 'waxy' capacitors were prone to go 'leaky' giving frame cramping when the set was hot whereas certain 'tropicalised' capacitors would often go dead short circuit! It is a lot to expect old line transformers etc. to continue after protracted periods of inactivity. Also watch those ion-trap adjustments to get the brightest picture and avoid ion burn.

I think it defeats the object of 'preserving' 405 sets if they're forced to operate on 625. Better to build a pattern generator, simple standards converter with mono camera or use old 405 videotape. A lot depends on the uses to which the set is put. As a collector's item then leave it as 405 only. Be careful with restoration otherwise an Arthur Negus of the future will rip it to pieces! If it's for exhibition then do a MOM! and put a 625 chassis inside the case.

SAFETY! Mid-sixties Philips dual standard sets had 'drop-off' resistors. But a lot of sets did not use 'safety' components. Bush were very adamant with their early CTV25 dual standard colour set to use an updated timebase chassis. The LOPTX was covered in pitch. This kind of thing is a fire hazard if operated unattended. In the early days of TV and radio, if a 1 watt resistor was needed, often 2 watts would be fitted. If a valve - especially frame grid valves like the EF183 - decide to develop an inter-electrode short, a burning screen resistor could take an awful lot with it before any mains fuse every thinks of blowing. So take care! Also remember that a lot of insulators like paxolin and certain plastics change state with time. Dampness or extreme heat is a killer. The result is a set working fine until... 'sizzle, sizzle'!

If you REALLY wanna smell a 'pong', stick the screwdriver blade between the fins of an operating selenium rectifier!

Returning to the changing characteristics of plastics, this was once a problem with the LOPTX housing used on some Ekco sets. Incidentally, with a good tube these sets, together with Philips, gave superb 405 pictures.

One or two other interesting comments. I used to work in a workshop where either Radiospares (as it was) switch cleaner was extensively used. It came in a bright yellow can. One day a 17" portable Sobell appeared. It had a plastic case and moulded plastic user controls which, of course, were 'noisy'. I promptly poured liberal quantities of switch cleaner on them and the plastic melted and they seized up. Penetrating oil is probably the safety solution in areas where there are low or no voltages.

There was another occasion when we used meths to clean screens. One day I had to replace the dial drive (remember them?) on an ancient valve radio. The glass was a bit dusty so out came the meths.... and off came the station indications!

Okay, one more. A big 21" Philips console came in. Being lazy I had to get under the chassis so tipped the set upside down in a blanket. Well, the set got in the way so whilst I worked on it, we had to drag it around. Once we got the set upright, I realised that somebody had left some screws in the blanket. I still don't know how much the shop paid to get the cabinet re-polished!

* From Ray Whitcombe, Kingsbury:

I have read with great enthusiasm the issues of '405 Alive' and may I now make a few comments. Firstly in my own lifetime I must have experienced most of the history of the British TV system(s). I was born during the war and although my parents did not own a TV until the 1950s I still was aware of its existence via contact with an uncle, and school. Publications like 405 Alive are very worthwhile for promoting past achievements but please do not dwell on the deficiencies and great age of the recent history of technologies like TV.

My main interest is technical, as you may have gathered, being an electronics engineer whose career started in the consumer sector (manufacturing). It makes me feel very ancient to have people like the Yuppies idolise the artifacts of a few decades ago, after all my oldest child is only just 9 years old. and looks on a 20 year old radio with the same awe as I reserved for the exhibits of the British Museum at the same age! Again a friend in her early 20's expressed great surprise at the quality of some family photographs from the late 40s, "I didn't realise that photography was so advanced then!" Well we all KNOW that all that stuff was developed in Japan during the last few decades, don't we?

Well back to the main topic. I feel that the title of our group is good, but please remember that the number of lines is only a part of a system, perhaps it being always foremost in the general public's mind, it is of almost political significance, but technically I consider all analogue systems as deserving equal interest. The special function of a group such as ours should be the early development of the various systems. For instance the French system of today owes much to the continual development of an original system, 441 lines, the original suggested pre-war world standard (well it had to be a bit up on the British 405!) . Did the French in fact use 455 lines? I have seen this mentioned somewhere, (perhaps they just could not stomach using a German standard!). After the war they kept the 441/455 service going, (the Germans had used it during part of the occupation), I suppose for similar reasons to our retaining 405. Everyone was now planning TV services and better definition was a goal as screen sizes were set to increase, etc. The American system of negative modulation and FM sound seems to have had greatest favour (Cossor even promoted the 525 line system but on 50 Hz field rate during the latter part of the war) The French, however, decided to stick to their own ways (as always) and also to be technologically 'Avant garde'. They put forward a stereoscopic system using two 405 line pictures, left + right to be combined optically at the receiver, hence a scan of 819 lines. Well, I suppose all that hassle would have

been too much, and the standard ended as 819 lines/50 Hz, positive modulation, and AM sound. When colour came I suppose 819 lines appeared as an unnecessary burden and also a problem in standards conversion. So they changed to 625 lines, keeping the other parameters the same, well I suppose that relieved the set manufacturers of some headaches around the sound and video sections.

One could go on to many such topics as to the developments in different countries and I hope other contributors will in the future. What about the American situation, they really got off to a slow start but their final system was decided very early.

Now a question. When I was still at college, and people were all talking about colour, I remember going to an exhibition (I think at the Royal Horticultural Hall), arranged by the I.T.A. and G.E.C. extolling the great benefits of this country adopting the SECAM colour system on 405 lines. They issued a booklet putting forward their cause, and I would like to obtain a copy, anyone out there can help? Going back to the exhibition, there was a live studio and a closed circuit system so that one could 'see the excellent results'. At this time the BBC were broadcasting NTSC colour on 405 lines and were ready to go, Government willing. I was a development engineer at GEC Radio & TV during the last 70s, but no-one remembered this event, perhaps it was at pre-Radio and Allied days (the Sobell, McMichael, GEC merger). [More from Mr Whitcombe in the next issue.]

Ray makes a number of interesting points here.

Yes, despite the title '405 Alive' I think all (or at least most) of us have an interest in all historical TV matters and non-405 line systems will of course get a look-in if people send in articles. We should indeed cover other early TV systems before they are forgotten: I was certainly not aware of some of these suggestions and they deserve further investigation. In particular I had not heard of Cossor's 525 line schemes nor of a 405 line SECAM system; anyone who can provide hard facts would do us all a favour.

I do know EMI were promoting a 605 line system in 1948/9, which might deserve attention as well as the Cossor system you mention. Negative modulation was better, but was not as 'obvious' to the early designers as pos mod was.

I hope you get a response to your request for the booklet; the address is R. Whitcombe, 91 Winchester Avenue, Kingsbury, London, NW9 9TA.

* From James Burton-Stewart, Launton:

I have read the last three or four editions of *405 Alive* with fascination from cover to cover. As one who did his children's TV viewing on 405 and as a former DXer, I feel there is too much television these days and that production techniques have become so sophisticated that TV has long since lost its pioneering spirit - It is frankly dull. So it is lovely to be able to look back on what, truly, were the good old days.

I read with interest the letter from Peter Delaney re Southern TV's opening sequence. We used to live in east Berkshire which was a

Croydon/Crystal Palace area. My first DX experience, little did I know it then of course, was when during certain types of weather we could receive either "ITA Chillerton Down Ch. 11" or/and "ITA Dover Ch. 10". I well remember the film Mr Delaney refers to but do not think it was used when colour started - certainly when Hannington opened and we were able to receive it, they did not use a film. I'm sure Roger Bunney, who as you know worked for Southern, would know.

Westward used a (similar) film to open their transmissions right until their being replaced by TSW - in fact TSW showed a film until programming commitments forced the end of that happy tradition. Re the films used by BBC2 until August 1973, any that were made by the petroleum companies (and most were!) used to be available for rental f.o.c. provided they were being shown to a school, club, society, etc.. They were known as sponsored films - from the Petroleum Films Bureau, 4 Brook Street, London. We used to rent them at home, pretending they were to be shown to the local fishing club. Naughty! I'm not sure if the PFB still exists.

Nor am I - but the films do and can still be borrowed! I managed to get the very last copy of 'Journey into the Weald of Kent' which was given to me as a gift when the National Benzole film library closed down.

Also, I agree that TV has lost some of its magic, but not all fortunately. On Channel Four, for instance, I have seen some superb specialist interest programmes which years ago, I would never dreamed about ever seeing on TV. Perhaps the secret is not to grow up - I'm sure the children of today are absorbed by television. Anyway, get yourself a copy of Box of Delights! In fact at least two 405 Alivers used to work for Southern: perhaps they - or anyone else - can comment on the opening film. [AE].

-----+-----
| SOFTWARE NEWS |
-----+-----

We had a most encouraging response to this feature, so it will stay so long as we receive your contributions! Thanks this time to Stephen James and Alan Keeling.

PICTURE
PAGE

Video Reviews by Steve James ...

If you are reading this, you must have renewed your subscription - well done you know it makes sense! The spirit of 405-Line TV lives on into the 1990s and you are helping to keep it fit and well, long after firstly the setmakers and then the broadcasters thought it was dead and buried. How wrong they were! I wonder how many as yet undiscovered vintage television receivers and programme material we shall unearth in the course of our run...

And so with the glow of valves in the eyes, the line scan whistle in the ears and that certain smell of warm wooden TV cabinets in the air (and me

remembering what I'm here for) I give You this issue's delve into the Video Vaults...

There seems to be an inordinately large amount of vintage children's television material available, so for now we shall concentrate on what's on offer in this particular category. Are you sitting comfortably?

MUFFIN THE MULE - BBC VIDEO £7.99

Show anyone an old TV set and they invariably seem to connect it (no pun intended) with either the Coronation or Muffin the Mule. Well, at last, four episodes of the latter have appeared on a commercially available tape. It was only released in 1989, which suggests that the BBC had quite a job in finding enough complete programmes to fill a cassette. Muffin first clanked into view on the piano as far back as 1946. These episodes date from the period 1952 - 1955 -presumably actual transmission dates are long lost.

Despite the fact that the soundtrack gives the impression that it is raining heavily in the studio, Annette Mills (at the piano) and Ann Hogarth (puppeteer behind not only Muffin, but also Peregrine the Penguin, Louise the Lamb, and Oswald the Ostrich to name but a few) shine through the technical limitations. The programmes appear to be complete and as originally shown, right down to the logo proclaiming 'A Parthian Release' right at the very beginning of each episode.

Annette Mills of course presents the programmes superbly, leading to some wonderful dialogue: In the last episode Muffin is making a pancake - Do I hear sniggering? I mean the edible type of pancake of course, rather than any other kind you may associate with farm animals! Don't be crude children. Anyway, Oswald the Ostrich gives the pancake mixture a close examination, only to be reprimanded by Annette- 'Don't gape in the batter, dear'. There are other gems too. For those of you interested, the pancake does actually get made, but vanishes when it is tossed into the air from the frying pan. It's not gone for long as Monty the Monkey finds it and returns it. However, having been stuck to the ceiling and handled by an ape, no one really fancies it (can you blame them) and Monty gets to wear it as an overcoat (!).

The real classic, comes at the end of the tape in the form of an added extra (10 mins or so) entitled 'Muffin meets Sooty'. It features part of a programme made to commemorate the tenth anniversary of post war television (I sense dozens of eyes lighting up!). It's presented by Humphrey Lestocq (fag in hand, which is rather unnerving when you consider he was children's TV Personality of the year in 1952!). This clip was made without Annette Mills, who alas died in 1955 only a week after the final Muffin programme. In the clip, Muffin and Peregrine together with Sooty slowly destroy long-suffering Harry Corbett. Of course Sooty is rather more to blame than his wooden contemporaries in Harry's downfall, which starts when he won't play Muffin's theme tune on his new electric organ. Naturally it ends with Sooty attacking the instrument with a hammer (you can see the valves when the top comes off!). 'Oh dear', says Harry, 'You've broken your organ!' (nudge nudge). Sooty is speechless. Fortunately Muffin brings Sooty some carrots as a peace offering and it ends fairly good-naturedly- 'Bye bye everyone, bye bye'.

VERDICT: 10 out of 10. Buy it if only for this last section. It's

marvellous.

THE MAGIC ROUNDABOUT - BBC VIDEO £7.99

The Magic Roundabout first revolved on BBC-1 in 1965, and ran for an amazing twelve years. It was created by Frenchman Serge Danot, and written and narrated for British consumption by Eric Thompson (Emma's dad). Although in essence, children's television, it really caught on with adults too, leading to several transmission time changes to fit in best with when people returned from a hard day at the office. Everyone knows the characters:- Brian the Snail, Mr Rusty, Ermintrude (call me 'dear') the Cow, Dylan the far-out Rabbit, Dougal the Dog and, the voice of sanity, Florence. It's written very much tongue in cheek, which really is the secret of its success. There are even cross-references to other programmes- Dougal says at one point 'What's the panic - has Hector's House burned down!'

There are thirteen episodes on this tape, representing very good value. Alas, there is a snag in that these episodes have been horribly 'sequenced' together. This means in effect that at no point do you get original end titles and credits, and even the opening titles, which you get only once at the beginning of the tape, appear incomplete. During the links between the programmes there are desperately unwelcome additions such as 1989-style superimposed graphic titles and non-original music. This may well ruin it for such purists as ourselves, but this aside, the programmes are as witty and entertaining as ever. Running time is 60 minutes and the tape is in colour.

VERDICT: It's a shame that having made a good job of the Muffin tape, the BBC have managed to lose so much authenticity in this tape.

HECTOR'S HOUSE - CHANNEL 5 VIDEO £7.99

In the summer of 1968, the Magic Roundabout took a rest, and as a replacement Hectors House appeared, if only for a short time initially, as public demand decreed that Zebedee and friends should return a.s.a.p! Hector, you may remember is a large puppet dog who lives in a posh house with ZAZA the cat. Always looking over the wall for a gossip is KIKI the frog in a sort of reptilian Hilda Ogden role. Not much room for a full review here, but suffice to say there are a dozen episodes complete with full titles at beginning and end (BBC please note!) Good value once again, but not desperately entertaining. In colour.

...ooOoo...

This of course is only a tiny section of what's available at the moment. Look out for a whole tape of Bill & Ben, The Herbs, and also 'Playschool Re-play' which features lots of vintage clips right from its start in 1964. It also adds nicely to Malcolm Batchelor's excellent article in the last issue by showing colour clips of the programme from 1968, presented by Lionel Morton (who used to be in The Four Pennies pop group in the early sixties). See you next issue

... and by Alan Keeling

I LOVE LUCY - VOLUME TWO ... "Lucy wants to be a Star" - CBS/FOX All-Time Greats. 2308. VHS. Price £9.99.

This highly entertaining tape starts off with an unusual but interesting set of short sequences featuring Lucille Ball and Desi Arnaz in 'colorisation' with a Desi Arnaz vocal rendering of 'I Love Lucy'.

Then we're off with a 1952 episode entitled 'Lucy does a TV commercial'. In this episode Lucy wangles herself a spot on television advertising a health food product called Vitameatavegemin which, incidentally, is 23 per cent alcohol. After many rehearsals she ends up well and truly sloshed. For test card buffs, by the way, there is a comical sequence where Lucy hides in a TV cabinet behind a false test pattern (a bullseye one, not the RCA Indian Head) which she tears off to reveal herself performing a mock commercial. 'Three-dimensional television,' quips Desi Arnaz. This is the late great Lucille Ball at her hilarious best.

'Lucy gets into pictures' is from 1955 and shows Lucy's desperation to get into films via husband Desi, and after many attempts to get discovered she finally ends up playing a corpse.

From that same year also comes 'Lucy's Italian Movie'. In this episode Lucy *does* get into pictures, a movie entitled 'Bitter Grapes', and ends up rather too grape-stained after a hilarious fight with the local wine-making peasants.

The picture quality is excellent and a must for all vintage TV buffs who love old American sitcoms. As an aside, it would be lovely to see many more old series available on pre-recorded tape, such as *Fabian of the Yard* and *Sir Lancelot*. How about it BBC and Channel Five? [Alan Keeling]

...ooOoo...

SCREENTHEMES is the name of a business run by Gareth Bramley in Nottingham, and he specialises in film and television music on record, cassette and compact disc. A large SAE (you'll probably need about 30p postage on it) brings his 20-page list of new and deleted tunes, new and second-hand (the latter all in good or excellent condition). The whole thing looks very professional (and a labour of love) so send off now if this interests you. Screenthemes is at 22 Kensington Close, Toton, Nottingham, NG9 6GR (tel. 0602-732431).

-----+
| BOOK REVIEW |
-----+

BOX OF DELIGHTS by Hilary Kingsley and Geoff Tibballs
Macmillan, 1989. £14.95.

Subtitled 'The Golden Years of Television', this is a rare example of a book which leaves you satisfied after reading it. It is well researched, well written and well illustrated - sad that this is a rarity these days.

Essentially, the book is an illustrated review of each year's British television broadcasting from 1953 onwards. Plays, documentaries and entertainment programmes are all covered, as are major news events and commercials. There is even a fascinating 'Where are they now?' appendix, enabling you to trace the after-lives of people such as Shirley Abicair, Barry Bucknell and Janice Nicholls.

Although this book is richly illustrated and appeared just before Christmas, it is a gift book, not a coffee table book. If no-one else does and you have to give to yourself, then treat yourself, because it is a good one. The text is not the usual superficial waffle that one finds in these books but genuinely informative and well-written by authors who clearly know their subject.

In brief this is a great book, one which will last as a reference book. I rate it on the same level as *The Tuppenny Punch and Judy Show - 25 years of TV Commercials* by Jo Gable (Michael Joseph, 1980).

[AE]

TRADE NEWS

>>>> THE PRICE OF A TV22

A firm called Joseph Urban of Anstruther, Fife was advertising Bush TV22s in *Television* magazine a few months back. First they wanted to sell them, then they didn't, then they did again! The last report heard was that they were asking £150 for a set fully restored and working (on 405 lines of course). Interesting ... [AE].

>>>> TV22 INFO PACK

The Vintage Wireless Company (Tudor House, Cossham Street, Mangotsfield, Bristol, BS17 3EN. Tel: 0272-565472) is advertising a photocopied set of service data and instruction manual for this popular set. The price is £5 and we sent off for one. For your money you get good quality photocopies of (i) the official Bush service instructions and circuit diagrams for the TV22 and TV24, also the TV22A and TV24A; (ii) the Bush additional service information; (iii) the *Trader* sheets for all these sets and (iv) the user instruction book. The only thing they have left out is the service info and *Trader* sheet for the add-on band III converter. Not a bad effort at all: this should prove most useful for people who have one of these tellys - or dream of finding one at a realistic price (whatever that is!).

By the way, the same firm issues photocopy reprints of other instruction books and sales catalogues: send a large SAE for their price list and mention you read about them in *405 Alive*. We need the publicity!

This business is also a useful source of old and new spare parts, valves, also

old books and magazines. Things like old-style Bulgin mains connectors and ancient transformers, Systoflex sleeving and other items you despaired of finding nowadays are all listed in their 'Short Form Catalogue' and if you're engaged on restoration and don't have a bottomless junk box, you'd be a fool not to send for it. WWC are not the cheapest of suppliers but they are always businesslike. The shop is sometimes closed on Saturdays, so telephone and check up for certain before making a long journey to visit them. [AE].

>>>> WHERE THE TRADE BUY

You may have wondered where the antique trade gets all its old radios and TVs (and other things): well, I am told that a lot gets bought and sold at special markets which only the trade attend (and know about). I dare say these affairs are not really the state secrets that my informant suggested, but you may like to try this one out. One of these markets is held every Friday in London's Portobello Road, early in the morning. You want to get there by 7 or 7.30 AM, and it's help close to the railway bridge. If you go there and get lucky please let us know! [AE].

>>>> CHRISTMAS CAPERS

The January 1990 (in practice the Christmas 1989) issue of *Television* has an illustrated article by Keith Hamer and Garry Smith on the theme of seasonal captions on BBC TV. The other *Television* magazine - that of the Royal Television Society - has a fascinating review on the history of Soviet television in its December issue.

TECHNICAL NEWS

Thanks to the generosity of David Adams (one of the Vintage Wireless Museum team) we have been given a pile of old service sheets for just pre-war and early post-war TV sets, particularly English Electric, Philips and Ultra. If anyone has a set in this category please drop me a line with a SAE and I'll check if the service data is here. David also says he has indexed a lot of pre-war magazines (mainly *Popular Wireless*) and can turn up reviews and advertisements for some sets. This is not a general offer as it involves a lot of effort but if anyone is doing any serious research I'm sure he'd be happy to assist. [AE].

David Boynes has acquired a pre-war mirror-lid TV which is going to need total rebuilding. To aid others he is going to take step-by-step 'before and after' photographs and let us have progress reports. He is also shooting a video film - sounds fascinating!

I THE TESTCARD AND THE TELLY SHOP

It would appear that most of us who like the test card became interested as very young children by seeing this apparition before and after 'Watch With Mother'. This was the case with me and I tried every excuse to have the television set left on after closedown, much to my parents' annoyance and questionable worry. My favourite excuse was that I wanted to draw the test card and therefore needed it on display - it worked for half an hour or so anyway!

When we went into town I used to head for the TV dealers' shops, here I could see countless test cards on display in the dealers' windows and it was this sight that led me onto my own television collection in later life. The earliest TV set I can recall in the house was an Ekco table model no. T216 with a 12" tube, my first view of test card C was on this set. This set was replaced by another Ekco set, this time a 19" model no. T377 which gave long service and on which I enjoyed test card D days. Eventually my parents decided they wanted BBC 2 but could not afford colour, so in 1968 the trusty Ekco was pensioned off in favour of a dual standard GEC model 2018 which is still in my possession. When BBC 1 and ITV went into colour my parents considered buying a new set but didn't take the plunge until 1971 when a HMV Colourmaster was purchased. This set was responsible for my interest in the Thorn group and eventual collection of mainly Thorn sourced sets. The GEC was relegated to a back room where I was allowed to listen to the test card and watch the trade test colour films - why couldn't I have the colour set on all day? Well according to my folks it was not a toy and too expensive to 'play' with. In retrospect they were right, but it is something you don't appreciate as a youngster.

Dissatisfied with the back room and having left school to start work I decided to purchase my own set - the first of many to follow. It was a single standard Hitachi portable so no more 405 lines for a while. After a further two years I bought my own colour set, a Sony 13". Both the Sony and Hitachi sat side by side in my bedroom ever keen to display Test Card F all day. Seeing the two sets side by side brought back childhood memories of TV dealers windows and I decided that I had to acquire further sets. Living at home meant that my folks were not keen to have more sets in the house, there were after all now four of the things there already. Undeterred I bought two second hand sets hoping to sneak them in but I knew they would be discovered, after all how can you hide a television set? The new acquisitions were both dual standard Ultra Bermuda 19" models (nos. 6624 and 6626) complete with plate glass tube implosion protection. I still have both sets though one died in a puff of smoke, the other had a new tube fitted but was so temperamental that I no longer use it. You will observe that the Thorn connection occurs here, I was fascinated by the links between Ferguson, Marconiphone and Ultra not forgetting HMV, that I decided I would like to specialise in collecting Thorn/BRC sets.

After a further year I purchased another dual standard Ultra, this time no. 6642. This set too has been pensioned off - poor tube and tuner, though it remains complete. In their day the three Ultras and the Sony and Hitachi all sat in my bedroom making it look like the dealer's display I desired as a child. Before leaving the nest to find my own place I acquired another set. This was

from someone in the family and was not a Thorn. It was a Sobell 1018, a clone of the GEC. All these sets left home with me and I eventually sold the Sony and Hitachi to buy a new Ferguson and a second hand Marconiphone colour set. Since then I have only acquired various Ferguson colour sets with the exception of a little gem that someone gave to me about ten years ago. This is a 405 line-only HMV 12" transportable model (2634). It worked up to the end of the 405 service receiving Ch 2 from Holme Moss quite clearly on its own telescopic aerial. It still works now but there are no signals for it to receive.

I no longer operate any of my dual standard sets but I shall keep them in complete condition. I am sure the value of those early dual standard Ultras must be increasing and to think I paid only £9 for each of them in working condition! [PP]

-----+-----
| BRINGING A PRE-WAR TV RECEIVER BACK TO LIFE Part One |
| by Steve Ostler (Radiocraft Ltd) |
-----+-----

Television is very much a central part of modern life and is still developing rapidly, both in terms of engineering and production technique. Something that I have always found rather amazing is that Television - in its modern electronic form - dates back to the mid-thirties and is therefore very much part of the 'vintage' period of interest to our society. I had long wondered just what Television was like to own and operate for its select group of owners nearly fifty years ago - how good were the pictures and sound, and what were the first programmes like ? I decided to try and find out, and this proved the start of an absorbing hobby.

The natural first step in this quest was to acquire a receiver. This was not easy, particularly for someone who at the time had never heard of the B.V.W.S. A visit to the Science Museum in 1980 whetted my appetites but provided no leads. At length I decided to place a 'wanted' ad for a 'pre-war TV' in Exchange & Mart, and after hearing from several people who wanted to dispose of slimline '60s sets received a call from a gentleman in S.E. London who had a 1937 Marconiphone 702 for sale. This was a receiver with a 12-inch screen that was viewed via a mirror in the lid of the cabinet. Apparently the set had recently been removed from a 'tip' but was in restorable condition. I recruited the help of an old friend who possessed a hatch-back and we travelled hot-foot down to London from my home near Evesham to have a look.

When we arrived, we found the set standing in the front room but looking rather out of place. The cabinet was scratched and faded but the set was complete and appeared basically sound. I lifted the lid and saw a small, rather dirty screen. It gave the impression of not having been used since the birth of television in the remote past. At that moment I longed to see that small screen lit up again and recapture the long lost novelty and sense of magic that Television must have carried before the Second World War.

After safely transporting the set the hundred-odd miles back home, the

restoration commenced and was to take about six months. The first major problem to present itself was the large, pitch covered mains EHT transformer which had developed internal shorts. I was unable to find any firm prepared to rebuild it but a small local concern, Skot Transformers of Hanley Swan, agreed to design and manufacture a 'one-off' unit. In the event they did a magnificent job and the result closely resembled the original in appearance but lacked the pitch covering. This was installed in the set and after minor adjustments the correct EHT voltage of 5KV was obtained. Now, after replacing some leaky capacitors in the power and timebase units, it was possible to get the set to work. However a new and greater problem now became apparent. The cathode ray tube had 'died'. In a blacked out room, all that was visible on the screen was a very faint scanning raster with an intense black spot in the centre. It seemed unlikely that the tube could be rejuvenated or re-gunned and after various consultations this proved to be the case.

It was not that I had an incredible stroke of luck. One of my duties at work is the processing of redundant engineering plant. Some time ago I had cleared out several dozen cathode ray tubes but I noticed one that was a bit different - it was a peculiar looking thing with a narrow deflection angle and a strange base. It seemed a shame to dispose of it so I tucked it away in the Stores and forgot about it. Now, remembering this, I got permission to remove it and tried it out for size. It proved to be an almost exact fit and was obviously an equivalent to the original Emiscope 6/6, probably being a 6/7. This tube was unused and on fitting it the set was transformed. A bright raster was obtained with no central burn mark.

Remaining electronic repairs were mainly confined to the Sound Unit, where a soft crackling noise from the speaker when a signal was applied was traced to a faulty I.F. transformer. This was rewound. The loudspeaker had an off centre cone and was replaced, as were all the rectifier and output valves in the set. The magnificent intaid veneered cabinet was in sound order under the dirt and only required cosmetic repairs and cleaning.

The set was now ready but there was one more problem to overcome before it could actually be used. Living as I did about a hundred miles from London I was well outside the Band 1 service area of Crystal Palace and there was no suitable television signal available. In the next article I will recount how a signal was eventually obtained and how well the set performed in regular use.

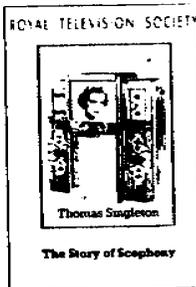
SERVICING VALVE RECEIVERS

The article on page 28, Servicing Valve Receivers, is reproduced from the November 1989 issue of Radio Communication, by kind permission of the editor. Although the author had only radio receivers in mind, the information is equally valid for television receivers and other valved equipment such as test generators.

RTS PUBLICATIONS



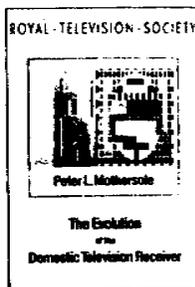
A.A. Campbell Swinton
 The life and achievements of the man who devised an all-electronic television system a quarter of a century before it was realized by EMI and adopted by the BBC in the mid 1930s.
 Price £3.75



The Story of Scophony
 by Thomas Singleton
 A study of the development of the Scophony television system and of the men who made it possible, led by the extraordinary entrepreneur Solomon Sagall and his team of physicists and engineers.
 Price £5.75



Sennors, Soap and Television
 autobiographical notes by John Logie Baird
 The publication of these highly entertaining and well-written memoirs provide an opportunity to understand better and to appreciate Baird's crucial role in establishing television so early in this country.
 Price £4.75

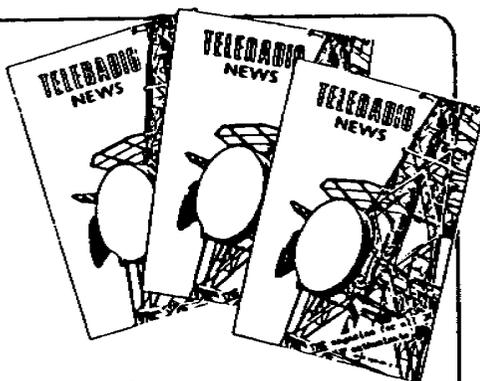


The Evolution of the Domestic Television Receiver
 by Peter L. Mothersole
 The story of how the television receiver has evolved from one employing, typically, a 9-inch picture tube and a dozen or so valves to a 26-inch colour set with remote control, teletext and tape recorder inputs.
 Price £3.75

All these titles (prices include p & p) available from

Royal Television Society Tavistock House East, Tavistock Square, London WC1 9HR

TELERADIO NEWS



Discover What You're Missing

TELERADIO NEWS NOT ONLY COVERS DX-TV RECEPTION IN DETAIL BUT ALSO RELATED TECHNICAL TOPICS PLUS NEWS FROM AROUND THE WORLD AND THE LATEST IN TV GRAPHICS. YOU'LL BE AMAZED AT WHAT CAN BE RECEIVED IN THE UK AND NOT BY SATELLITE!

DON'T DELAY -SUBSCRIBE TODAY!

Annual UK subscription (Six bi-monthly issues) £7.50.....Sample copies £1.50

HS PUBLICATIONS

7 EPPING CLOSE DERBY DE3 4HR

Page 15-17: BBC-tv Test Card Music

To add a little to Paul's article about "BBC-tv Test Card Music", the official reason which I received from the BBC as to why regular Trade Test Transmissions had been discontinued (in May 1983 incidentally, not March although the exact date is somewhat of a grey area) was that there was a risk that the test card could be permanently etched on to TV screens! It took someone a long time to discover this phenomenon because the BBC have successfully radiated a test card since 1934, if not earlier (yes, even on the 30-line system prior to the birth of high-definition television on November 2nd, 1936). Although this etching process *is* possible, a test card would have to be displayed on a CRT for a very long time and boring things called programmes tend to get in the way, especially these days! Someone recently told me that when they were in the Radio & TV Trade, they did actually see an example of Test Card "C" being etched on to the screen (although it was extremely weak). This was due to a housewife regularly leaving the TV on all day so that she could listen to the music while she did the housework (no chance of doing that nowadays). But this was way back in 1962 when there were few programmes to interrupt the test card. Those were the days....

Page 35: Feedback

Regarding the "Feedback" item on the "Test Card Saga" article (Issue 3), I am also very keen on accuracy and spend quite a lot of time researching my articles. From Paul's letter I am not exactly sure which years he is referring to regarding the best time to listen to BBC test card music. In the original text it was clearly mentioned that I began taking an interest in BBC Test Card music in 1963. I can assure Paul that the worst possible time to record the normal 'National' music from London was during Regional transmissions. I know 'cos I was there in those far-off halcyon days with my microphone strapped to the loudspeaker (well, almost) to cut out unwanted sounds from the coal fire which spitted and crackled merrily, one eye on the clock, the other on the green 'Magic Eye' on my Portadyne tape recorder, a sign up on the door asking everyone to be quiet (which didn't always work) and a cushion within easy reach ready to smother the clock on the mantelpiece just before it started chiming! Sometimes, just as a particular 30-minute tape was about to be played all the way through from London, Regional opt-outs would begin with either the "Bugle Call Rag" or the "Binokel" tape (Scotland seemed to be in a world of their own with different Regional music. BBC North also had a Regional Classical tape. I spent many happy hours in the 1960s tuning into various BBC-1 Regions when they opted out. I could monitor BBC Midlands, East Anglia, Cymru, North, Crystal Palace and, occasionally, South). The two widely used Regional tapes (featuring *Twelfth Street Rag* and *Rio Cha Cha Cha*) were not always played in full so, taken all round, the Regional transmissions were definitely not the best times to hear tapes all the way through although they were always a most welcome event. What happened prior to 1963 I don't know but Paul doesn't mention exactly which period he has in mind on this particular subject (he mentions the 'early 1960s') although he does mention 1960-1963 regarding tapes which lasted less than 30 minutes. How 'early' is early? It could well be that most of the Regions used copies of all the National music from London during local opt-outs but this would have been before the latter part of 1963. Perhaps Paul could clarify this interesting point by going back to his original source for more details?

Paul has quoted me out of context when he says that he "doesn't think that I am the only person to have a more-than-keen interest in BBC Test Card music". I said in my original article that I appear to be the only person interested in both the music and the appropriate BBC Test Card and/or identification symbol. If Paul knows of anyone else who collected the music and off-screen photographs of captions, etc., would he please write in to "405 Alive" with details?. I know over 40 enthusiasts -some collected the music, some the test cards but, sadly, not both (certainly not from the 1960s right through until the 1980s). Also, it seems that I am the only person who was sufficiently dedicated to have recorded virtually ALL the music from 1963 until 1983 (around 3,000 pieces). Of course, some people were too young but others just lost interest. Various enthusiasts I know have been interested at some stage in the music (for example, the late 1940s or the 1950s, or 1960-1963, or 1963-1969, or the 1970s or the early 1980s, or even Ceefax music) but I haven't met anyone yet who actually recorded the music at the time (i.e., who didn't obtain recordings the easy way years later from a pool of other enthusiasts) . Unfortunately I haven't come across anyone else who spans all the years that I have (I don't think Paul started recording until as late as the 1970s). If there is someone else out there who did take an interest in the BBC Test Cards and music used over all those years (and I hope there is someone), then please contact me at: 7 Epping Close, Derby DE3 4HR (or telephone 0332 51 33 99 before 9.30pm).

Regarding the tape featuring the Chopin "Polonaise in A Flat", it would appear that there were two versions of this 30-minute tape. My original recording (which I recently unearthed) is different to the one which an enthusiast supplied to Paul. Does anyone else know anything about these two tapes?

Finally, a mish-mash of other points connected with Paul's article.... With reference to very early BBC-2 Test Card music, I have a number of these tapes in my collection and I can confirm that the style of music was very much in keeping with the music used on BBC-tv/BBC-1. In fact, some of the better-known pieces were repeated on several BBC-2 tapes.... I have some SESAC recordings in my collection but not enough (at the moment) to recreate entire tapes although I'm getting there.... Personally, I thought the two guitar pieces which Paul mentions as being used on BBC-2 (which I have on disc) were great to listen to but, there again, I liked every single piece of BBC Test Card music so perhaps I am a little biased!.... It's interesting to note that various pieces of music by Roger Roger have been used from the 1950s right up until the 1980s (he's obviously in a musical league of his own).... The Colour Receiver Installation Film was narrated by Michael Aspel (at least it sounds like the former BBC-tv newsreader to me) and, strangely, although it's known to most enthusiasts (including myself) by this title and was, I think, shown in "Radio Times" under this heading, the actual film (lasting around 11' 30") didn't include the words "Colour Receiver Installation Film" at any point!

Page 5: Charles Brown's Car Ignition

Further to Charles Brown's letter about problems with interference from car ignitions, I can certainly remember such difficulties in the 1960s (1963 onwards to be precise) when listening to BBC Test Card music. Usually the interference seemed to start just when the seldom-heard end pieces were about to be played. There were many times when I wanted to throttle certain people -particularly motorcyclists!

Servicing Valve Receivers

A large number of elderly valve receivers are still in use, and they frequently appear on the market. However, in recent years not much seems to have been published on servicing these sets. Needless to say, if you're planning to carry out a full service and alignment, it's helpful if the service manual is available. Resorting to hit-and-miss methods such as tweaking cores and trimmers in the hope that it will make things better is decidedly not recommended, and any 'adjustment' of this sort should only take place as a last resort. Having said that, most receivers can be put into a usable state without this information, and we'll try to give some pointers to common and not-so-common faults to which valve receivers are prone and how to trace them with a minimum of test equipment. What follows is biased towards communications receivers but most points are just as applicable to domestic valve equipments.

First of all, in these days when everyone is used to low-voltage transistor circuits, no apologies for stressing that the HT rail in a valve set can be around 300V DC and 700-odd volts can appear across the rectifier valve base. The old rule that a radio engineer worked with one hand in his pocket is as valid nowadays when working on valve equipment as it ever was. Also, remember that some valves - especially the audio output and the HT rectifier - can get very hot. Equally, mains voltages tend to appear at more points around the circuitry than they do with the transistor equivalent. In the case of equipments such as the Eddystone 870A which are 'universal' in the sense that they can run off AC or DC supplies, one side of the mains is connected directly to chassis. This means that the only safe way to work on them is via a mains isolating transformer. Note that a Variac or variable transformer does NOT give mains isolation.

On removing the set from its case for the first time, we'd suggest that if any form of dial cord and pulley system is used for the tuning scale, a drawing should be made of how the cord or wire is strung round the various pulleys and drums and the appropriate number of turns. In this way you can put it all back together if it comes adrift during servicing or if the string breaks at a later date. It is also advisable to make a note of the positions of all valves and their numbers for later reference, since markings can often become unreadable with time and handling. If the tuning capacitor is not enclosed, turn the tuning control so that the plates become fully meshed. This will guard against accidentally knocking and bending the vanes.

Firstly, look for any obvious signs of overheating such as blackened resistors or a smell which suggests that something has got hotter than it should. Check any fuses which have been fitted. If one of the clear glass variety has been used and is open-circuit, the way in which it's blown can give a useful clue as to why. If the glass is blackened and there are minute blobs of copper visible amidst the black, the fuse has been subjected to a massive overcurrent - suggesting a short-circuit fault. If the wire is discoloured and there's a small break visible (often with a blob at each end of the wire) a higher current than normal has caused the fuse to blow. If the wire is broken and not discoloured, the set may have been knocked or subjected to some vibration. Low-current fuses quite often fail this way.

A common problem with older equipment is that the capacitors age and either decrease in value or become leaky. Apart from electrolytics - which are always suspect in old sets and which we've discussed at some length in these pages recently - the flat bakelite-cased mica types and the tubular wax-paper variety also seem to be highly unreliable - the latter often show signs of cracks in the coating. Noticeable hum in the speaker is a good indication of a faulty reservoir electrolytic, and the symptom is easily checked by temporarily connecting another in parallel. However, if the capacitor feels warm or hot, switch off AT ONCE and change it - otherwise you may be about to have a nasty explosion. A quick check on the condition of small decoupling or audio coupling capacitors having HT connected to one side can be made by disconnecting one end and connecting a voltmeter in series. If the meter shows anything in the way of a steady reading after the initial 'kick' at switch-on, the capacitor is leaky and must be replaced. Capacitors which are suspect but which only have low voltages on them will need to be removed and tested in the same way. Alternatively, use some form of capacitor tester which produces a voltage near the component's rating. A low-voltage ohmmeter test will only reveal the very worst cases.

Leaky capacitors can put excessive loads on the HT rail, reduce the voltages on screen grids, put positive bias on the control grid of the audio output valve - which will probably cause its anode to glow red-hot as a result of the excessive anode current which will flow - and cause various other tiresome symptoms. All in all, it's well worth spending some time carefully checking all capacitors in elderly equipment; in most cases you'll find at least one faulty. Don't forget the capacitor which is often connected across the output

transformer to act as treble cut - also, the component which may well be connected across the mains input for interference suppression. This latter is likely to be a paper type rated at 750V DC or more - although it's used on AC - so select a replacement with great care. It needs to have an AC rating of 300V or more or a DC rating in excess of 1kV. Better still, use a 'Class X2' or 'Class Y' component specifically rated for connecting across 250V RMS mains inputs - see the 'Suppressors' section of the Electromail catalogue for some examples. Whilst you're in this general area of the set, you could also fit a modern mains socket with integral filtering - see last month's 'In Practice' for more information.

Resistors don't present so many problems, although storage under damp conditions can cause wirewound components to go open-circuit as the wire corrodes away with no visible signs. To find the value of an open-circuit wirewound resistor which has no markings, carefully scrape the coating away at the centre of the body to expose the wire. You should then be able to make a measurement of resistance from there to one or other end of the resistor. Doubling this reading will give a value for the whole component, which will be close enough for most practical purposes.

We've already mentioned the Eddystone 870A as an example of the type of receiver which has the mains connected to chassis and does not use a transformer from which to derive the heater and HT voltages. In this type of set, the HT is produced by direct rectification of the mains and the heaters are connected in series with a resistor is used to set the correct operating current. In the case of equipment having a mains transformer, the valve heaters have the same voltage rating and draw different currents. In the series chain type, each valve must have the same current rating - but they will inevitably have vastly differing voltages across them and must be appropriately rated. This does not matter if a valve is replaced with another of the same type or a direct equivalent. However, you must bear these factors in mind if you substitute a 'near equivalent'.

When one valve heater fails open-circuit in an AC/DC set, none of the valves will light up - so each heater will have to be tested for continuity to establish which one is faulty. If all the valves appear to show continuity across their heaters, check the series resistor. If the valve heaters are run in parallel from a mains transformer and the set contains metal-envelope valves, feel each one after five minutes or so to see whether it is warm. If it is not, check its heater for continuity. In the majority of cases the heater pins of an octal-based valve will be 2 and 7, but there are exceptions!

If you are planning to keep the equipment for some time, at least one example of each valve type should be kept as a spare. As well as being available to replace a tired valve, it makes servicing easier if a known good valve can be tried in place of a suspect one. Whilst on this topic, it's worth considering the matter of different versions of octal-based valves. They come in three variants:

- 1) Those with large glass envelopes, which have the suffix G after the type number (i.e. 6V6G).
- 2) Those with small glass envelopes, which have the suffix GT after the type number (i.e. 6SN7GT).
- 3) Those with metal cases, which have the suffix M after the type number (i.e. 6R8M).

Interchanging G and GT types doesn't normally cause problems providing that the G will physically fit the space originally intended for a GT. However, interchanging glass and metal types without bearing a few points in mind can cause all sorts of trouble. The reason is that the metal case is connected to pin 1 of the valve, which is not used in the glass versions. In sets originally designed to use all-glass valves, pin 1 on the valveholder is often used as a convenient HT connecting tag - so the later substitution of an M variant will leave you with a couple of hundred volts on the metal envelope! You may need to do more than disconnect the HT from pin 1, however. Most equipment designed with the metal versions of octal-based valves in mind connected pin 1 of the base to chassis so that the valve's outer screening was earthed. Leaving it floating may cause instability - so watch this point carefully if swapping valves seems to cause more difficulties than it solves. This problem, incidentally, can work the other way round - replacing a metal valve with a glass one may require the latter to be fitted with a screening can.

When considering how to replace defective octal-based rectifiers, bear in mind that it was possible some years ago to purchase substitutes consisting of solid-state diodes wired to the appropriate pins and encapsulated in a suitable envelope. These may still be available in the small ads, etc. Alternatively, it is possible to wire suitable silicon rectifiers directly across the valve base. However, both methods must be used with caution since they can cause damage to other components in the equipment. Thermionic rectifiers heat up at more or less the same rate as the other valves in the receiver, so that the HT comes up slowly and the valves are drawing current at the same time as the rectifier is producing it. However, solid-state rectifiers begin working immediately; since the valves will not draw current until they have warmed up, the HT may well rise to well in excess of its normal value. A 300V rail can easily

reach 420V under these circumstances, and this may be too much for some antique reservoir capacitors not designed with surge voltages in mind. Equally, fuses may blow as a result of the unaccustomed inrush current. A similar consideration will apply if an indirectly-heated rectifier is replaced by a directly-heated one, although this is not a very likely scenario.

The quickest way to test a suspect valve is to substitute a known good one for it. If this produces no change and you have to make checks on the various voltages on the base, check at the pin itself rather than at the solder tag. It's not unknown for the valve to fail to make contact with the base connection for one reason or another, and cleaning its pins and the contacts in the base with a suitable proprietary contact cleaner is always a good idea. Actually, there's a good argument for substituting all the valves at once if the set is not working since it's not unknown for more than one valve to be faulty at once in a long-disused set; if this is the case, swapping only one valve at a time may leave you more than a little confused. However, if substitutes are not to hand you will inevitably have to get down to checking voltages on each stage. In passing, a very few dealers still have a valve tester tucked away at the back of the workshop; if you know of one who has, it might well be worth getting both the existing valves in the set and your stock of spares tested.

Here is a suggested test procedure. Firstly, establish that HT is present and has more or less the right value; the reservoir capacitor is the obvious place to look. Turn up the AF gain control to maximum and touch each tag on the control in turn with a pen-type square-wave signal injector (or, if all else fails, the blade of a screwdriver) to establish whether or not the audio stage is working - if it is, you'll hear the injector signal or a loud hum from the speaker. Be careful here; the mains on-off switch is combined with the volume control in many receivers, so be sure not to touch its tags with anything at all. If the audio stage is not working, find out why by measuring the voltages on the valve pins and deciding whether or not they are sensible. In essence, the anode ought to be at virtually the full HT voltage and the screen grid somewhere near it. The control grid ought to have a negative potential on it, probably of the order of a few tens of volts although the number of different circuit arrangements and valve types makes it impossible to be more precise. The cathode should be somewhere near earth unless the circuit arrangement is decidedly unusual. The heater pins ought to have the correct heater voltage across them. Is the speaker open-circuit, or are the contacts on the headphones jack dirty

and open-circuiting the connection between the audio output transformer secondary and the speaker? Is the secondary of the audio output transformer OK?

If the audio output stage is operating properly, work backwards through the set via the detector and IF stages. Make sure that the IF gain control - if there is one - is set to maximum. An RF signal generator is best for testing, although a square-wave injector works well enough for a quick check. However, be careful not to touch anything other than the control grids of any valves; the HT or screen voltage could damage the injector. As you progress backwards through the stages towards the mixer, the signal should become stronger. A sudden fall in signal level as you test a particular stage would indicate a fault in that stage. Faults in IF stages are most likely to be low-emission valves, faulty capacitors or a screen lead resistor going high in value or open-circuit.

Having proved that the audio and IF stages are working - even if only approximately - you now only have the mixer and local oscillator and possibly an RF stage to worry about. To some extent the mixer and oscillator are interdependent insofar as, if either is not working, the result will be no output when a signal is applied at the input to the mixer. Using a square-wave injector here can give some misleading results because if you hear any signals, it isn't clear what frequency the set may be responding on and you could just be hearing stray breakthrough into the IF stage. However, you can use the signal injector for a rudimentary check on whether the local oscillator is working. Connect an antenna to the receiver's input and connect the signal injector to the mixer grid. If you now hear some weak and distorted stations as you tune across the band, it's likely that the local oscillator is at fault. If you know what frequency the local oscillator is supposed to be working on and you have access to a serviceable receiver which will tune this frequency, another way to check the LO is to listen for it on the other Rx. If you have an oscilloscope, of course, it's merely a matter of using that to see whether the LO is working; you should find lots of RF at the anode of the LO valve, or at the appropriate grid if it's a self-oscillating mixer. The best valve communications receivers generally used separate thermionic stages for RF, mixer and local oscillator; others often combined mixer and LO in a single multi-grid valve and didn't always incorporate a signal-frequency amplifier before the mixer. Incidentally, if you're new to valve equipment, don't fall into the trap I recently heard a newly-licensed operator falling into. High-grade valve receivers often used 'cold cathode' gas stabilizer tubes to regulate the

local oscillator anode voltage for less tuning drift. These usually glow a bright purplish-blue or orange inside; our man was hastily switching off his recently-purchased vintage valve receiver a minute or so after it had warmed up and the stab. tube had struck because he thought that there was something wrong with one of the valves! The glow is quite normal, and the time to worry is when it stops.

The RF stage is easily checked by connecting the antenna via a 100pF capacitor to the grid of the mixer. If stations can now be tuned in, there's obviously a problem in the RF amplifier.

Let's now consider some general faults to look out for. A common problem with elderly octal-based valves is that the envelope glass comes loose in the base. Do NOT try and remove valves thus afflicted by pulling on the glass; instead, ease them out with the blade of a screwdriver gently applied between the valve base and its holder. A very good and sound repair can then be made by means of epoxy adhesive. This problem is not confined to octal-based valves; almost every 807 we've seen in the past few years has a loose envelope.

It's highly likely that the contacts on wavechange switches and the like will have become tarnished over the years. Be careful how you clean these up; some switch cleaners are somewhat aggressive and have a very bad effect on elderly coil formers. They can also soak into the dust which inevitably accumulates around the switch wafers - together with what remains of any old grease, etc - and HT voltages can then track across the residue and burn up the switch. So do be very sparing with the switch cleaner. Incidentally, dampness can have a similar effect. If you suspect that the set has been stored in damp conditions, leave it in a dry and warm place for a week or two before doing any work on it. Then run it for a few hours with the HT off (some equipment has a switch with which to turn it off, or remove the rectifier valve or HT fuse) but not for too long since this can 'poison' some valves. Careful use of a hair dryer can also help. RF and audio gain controls are prone to becoming noisy and scratchy. The obvious answer is to replace them, but you can try injecting small amounts of switch cleaner which contains a lubricant and then rotating the control a few times until the noise disappears. The cleaner can be applied through the gaps which are usually present around the connecting tags. This technique usually works quite well with wirewound pots and the older carbon controls, but be careful that the

switch cleaner isn't of the type which eats the plastic from which the bodies of some newer ones were made or loosens the carbon track. I ought to mention that in an emergency I once used ordinary light machine oil to clean the track of the AF gain control in an AR88 and it worked very well indeed, but I'm not sure whether that's something I'd try again!

With advancing years, the lubrication of the tuning system can dry out and it's worth applying a drop or two of light oil to all the metal-to-metal bearings and some light grease to ball races such as the one in the tuning capacitor. Don't overdo this - use an eye dropper, or dip the blade of a small screwdriver into the oil and apply to the point to be lubricated. A small quantity of switch cleaner on the rotor earthing fingers of the tuning capacitor is also a good move.

It is not advisable to try cleaning the dial or scale plate with anything other than a soft dry cloth, since it's extremely easy to remove the artwork or background colour and the result looks awful. A dirty scale is much less hard on the eye than a patchy and discoloured one with half the legends missing as a result of over-enthusiastic cleaning. Keep all switch cleaners well away from this part of the equipment, since they make excellent solvents for vintage enamels and paintwork - not to mention the 'indian ink' which was used in some wavelength scales.

So far we've been assuming that the equipment was totally dead; now let's consider one which partially works. Valve ageing is a common fault and shows up in a number of ways. In fact, it can be so gradual that the deterioration in receiver performance isn't noticed until you begin to realize that you're not hearing things that the locals are, or you compare the set directly with another one of the same type. The point at which this effect becomes a problem is to some extent a matter for the individual. Unless adequate test equipment is available and you know how to use it, do NOT be tempted to start tweaking every coil in sight. Replacement of valves in IF stages shouldn't have the slightest effect on the tuned circuits, and tweaking won't usually compensate for a deteriorating valve. Re-tuning of IF stages should only be necessary if components have been replaced - or, in very old sets, when component values have altered slightly with age and the IF tuned circuits need to be brought back on frequency.

All in all, unless the IF needs to match into something like a crystal filter, it's generally safe to assume that you won't have to touch the IF

transformer cores. In any case, you need access to the manufacturer's alignment information to do the job properly - not to mention the right tool for adjusting the cores. ON NO ACCOUNT attack ANY cores in ANY equipment of this type with the nearest handy-looking screwdriver from the tool kit. The last thing we want to do is to keep issuing warnings and putting you off trying things for yourself, but a ruined IF transformer with a broken core and cracked former is likely to be almost impossible to replace.

Replacement of oscillator and RF amplifier valves will probably necessitate a small amount of re-alignment, and luckily this can be done without too much in the way of test equipment. One indication that one or other of these valves needs replacing is that the equipment appears to work at low frequencies but not on higher ones. If the dial alignment is out after replacing the LO, find the appropriate oscillator coil and trimmer capacitor for each range and tune to a signal (or the signal generator) at the low end of the band you wish to adjust. Tune the oscillator coil's core so as to bring in the signal at the correct point on the dial. Repeat at the high end, but now adjust the trimmer instead of the coil. Keep doing this until the "tracking" is correct at both ends of the band. The RF stage is peaked in a similar manner. Find a signal at the low-frequency end of the band and adjust the coil for the loudest signal; do the same at the HF end whilst tweaking the associated trimmer. Repeat until there is no improvement. You can use the S-meter reading as an indicator; if there isn't one, connect a high-impedance voltmeter to the AGC line and look for the highest reading.

Finally, if you discover that the set refuses to work at a certain point on the tuning scale and the fault appears at the same point on each range, check the tuning capacitor to see whether any vanes are shorting as it is rotated. A delicate operation will be necessary to restore clearance. It's also worth checking that the bearing screw has not worked loose; if it has, carefully tighten it until the rotor vanes are equidistant from adjacent stator plates when the capacitor is fully meshed. Tighten the locknut and check that the spacing has not altered. You will note that the outer vanes are slotted and may look 'bent' at varying angles. Do NOT be tempted to 'tidy them up' since the bending forms part of the tracking alignment of the tuning capacitor.

ELECTRICAL AND RADIO TRADING

October 15, 1955

Spate of work for TV dealers when Ally Pally closes

WHEN the new BBC television station at Crystal Palace comes into operation early next year, retailers will have a spate of work in reorientating aerials and making adjustments to allow for increased signal strength.

The frequencies of the station and polarization of wave will be the same as of the Alexandra Palace station.

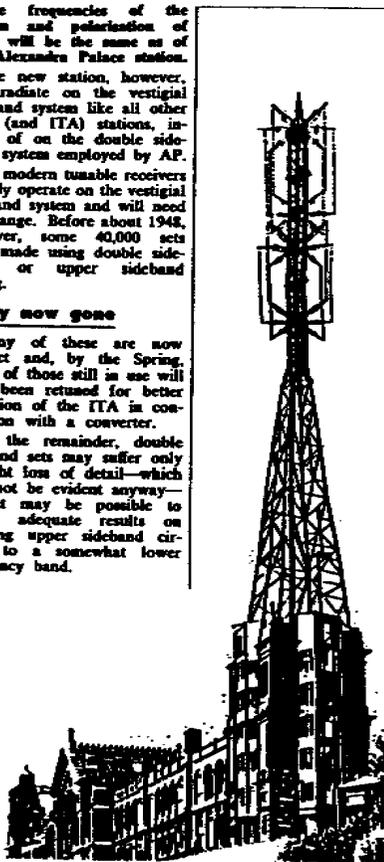
The new station, however, will radiate on the vestigial sideband system like all other BBC (and ITA) stations, instead of on the double sideband system employed by AP.

All modern tunable receivers already operate on the vestigial sideband system and will need no change. Before about 1948, however, some 40,000 sets were made using double sideband or upper sideband tuning.

Many now gone

Many of these are now defunct and, by the Spring, many of those still in use will have been retuned for better reception of the ITA in conjunction with a converter.

Of the remainder, double sideband sets may suffer only a slight loss of detail—which may not be evident anyway—and it may be possible to obtain adequate results on retuning upper sideband circuits to a somewhat lower frequency band.



THE CHIMES OF BIG BEN

(or How to watch two T.V.'s at once)

Long long ago in a remote village there lived a man. He didn't have a name but he did have a number. It was Number 6.

All the other people simply wanted to know the answer to one question. WHY DID HE RESIGN?.

O.K. Most people will have seen the ITC series The Prisoner. Reactions vary from totally bored and unable to understand the plots let alone the final ending in the seventeenth episode, to one of total LOVE (Series in-joke).

The village where the outdoor locations were filmed was at Portmerion in North Wales while the interior shots were at the MGM studios at Elstree / Boreham Wood. (No argument please as to which side of the towns' boundary MGM occupied).

The series while it was been made did have its ups and downs and several changes were made to scripts and programming at the last moment.

This had the result in two slightly different editions of the same episode being made.

It was believed that the second versions were either pilot episodes and used as a sampler to sell the series or when the episode was finally made extra scenes were either cut or added to change the length by a few seconds or to make an item a little more clearer.

In this episode Number 6 tells us he wants to escape from the village and eventually come back and wipe it off the face of the earth.

I first became interested in the Prisoner back in the mid 1960's when it was first shown.

I was nine at the time and did live in a type of village. It had its own school, hospital, chapel, cemetery, meeting hall. But the item that was the same as the series was that you were not allowed to leave the grounds. There was the freedom of around forty acres but all the residents longed for freedom.

It might be a coincidence but it is around fifteen miles from the Studio where the series was shot. The other coincidence being that the studio and where I was have both closed down.

Portmerion in North Wales simply closes down to the public during winter months.

So I was hooked, keeping a full set of the tapes from the 1983 showing I do watch them from time to time.

I was offered and gladly accepted an Episode entitled "The Chimes Of Big Ben" after being told that there was something different about this print.

This was rerecorded from an NTSC tape made in the US to the PAL system used in the U.K. via a standards converter (a standards converter looks like something out of the T.A.R.D.I.S but costs twice as much) so there was a slight loss of clarity and the colours were a little weak.

Watching it through in one go there was something different about this copy, from the episode I had seen on T.V. up to now.

The story was the same but bits of music were different and it had an extra logo at the end of the titles.

Time to get down to the hard stuff. Connecting up my 1983 tape on the Beta system to one T.V. and the US copy on VHS (Very Horrible System) to a second T.V. I started them, for a few second they ran all right then the UK print started to get ahead of the US one. This I realised was that when transmitted the UK print went out at 25 frames a second while the US one was still running at 24 frames per second. The Beta machine I use is a three year old Sony 950. It is still in production and although very costly it is about the only Betamax machine left around that one can purchase new. The best feature about this series of machine is the still and pause button, extremely accurate for a machine designed over three years ago. By careful use about every fifteen seconds a quick stab at the button and the two tapes would run in sync.

It is possible that people with the knowledge can make little electrical changes and get the two machines to run in sync without the use of the pause button, but I am only a passive TV watcher, my main interest is in cars. Yes they were all built in the 1960's and they are all Rovers, were coming back to that TV programme again, Their Rovers used to come after you to take you back to the village.

Finally going through the tapes there were several differences. The main title music had been changed as had some of the background music. Several sections were still the same but close up shots and long shots had been added and removed. An extra item had been added. This was a Triquetrum, a device used in navigation by positions of the stars. The other major item was an extra dialogue from a Government official (Richard Wattis) in the US print where he mentioned "he had been at school with him" (Number 6). At the final end of the titles after the ITC copyright sign Two Globes are shown followed by the word POP.

There are several other minor changes and there might be a few more that I haven't found yet.

Must now go out and purchase the video copy that is in the shops to see how that compares with the 1983 TV print and the US print, who knows it might be the same, but it might be different again.

HAPPY VIEWING. and "Be seeing you".

P.J. Howard, BOURNEMOUTH.

Where are they now? Where was I then? Well, as a small child in 1951 I was stuck in front of a 9" Ekco. Reflecting on this riveting situation, I recall that children's programmes began with a 'stop animation' film of a 'herald' plodding out of a castle. The 'herald' held a trumpet proclaiming 'Children's Television'. Onward then to 'Muffin the Mule' and 'The Man in Armour', (Bruce Gordon as a ghost in armour.) The theme tune to this series was 'Horse Feathers', later used in radio's 'The Huggetts'. Ah, but the best is yet to come. 'The Quatermass Experiment'! I was allowed up to watch the lot. All except, that is the final episode when, tired out from all this TV viewing I fell asleep and missed the cardboard cut-out Westminster Abbey with the 'Thing', (a suitably made-up gloved hand) dangle in front of the camera!

So where are they now? Resting snug and secure in a film vault? Unfortunately, as is the case with so much old TV, like hell!

In fact a couple of episodes of 'The Quatermass Experiment' are on film, but as for Muffin and the armoured chap, not a chipping or an iron filing.

Fortunately, old TV recordings still turn up. Some in basements; some in lofts. Some even, in my loft! All of which goes to prove that my years as a BBC employee were not entirely wasted. Along the way I 'acquired' a 'Dixon of Dock Green' (1956), the first 'Sid Caesar Show' (1956) and a two part adaptation of 'Macbeth' (1956) produced for children and starring Douglas Wilmer. The 16mm prints withstood my loft and have since been returned to the BBC Library (VHS copies by return) and now stand as the only surviving examples of those episodes and programmes. In fact of the 13 Sid Caesar shows produced by the BBC, only one (no. 11) remained in the library until I returned the first programme, much to the delight of everyone who saw it. It is indeed a funny show.

I suppose all this TV nostalgia could be construed as having one's head in the clouds. Luckily for the BBC library, I had my head in my loft.

Recent interest in retaining the operational condition of 405 line receivers led to the design of this low cost pattern generator. It permits the display of simple screen images in the absence of a videotape source whilst also enabling assessment of operational status. Three patterns are provided:

Chequerboard
Cruciform
Step Wedge

Additionally, Black Level can be obtained from the fourth switch position.

Although a simple Band 1 modulator is included, a video output could be fed to a more elaborate unit or an emitter follower incorporated to drive a 75 ohm load.

Description (Sync. Generation)

The origination of random interlace sync. waveforms is entrusted to a circuit based on that published in the August 1979 issue of TELEVISION. IC1 generates a square wave which triggers IC2 monostable to produce the Logic 1 LINE BLANKING signal fed to AND gate G1. It also triggers two monostables in IC3 to produce line front porch (set by C3, R4) and back porch (set by C4, R5) whilst the output on pin 12 gives LINE DRIVE.

Similarly, IC4 is a low frequency square wave generator which triggers a monostable in IC5 to give a FIELD DRIVE pulse (set by C6, R8) and FIELD BLANKING (selected by values of C7, R9). The latter, at Logic 1, is fed to G1 where it is 'OR'ed with LINE BLANKING and subsequently inverted by G2 to give a MIXED BLANKING signal.

FIELD DRIVE is combined with LINE DRIVE in G3 then inverted by G4 to give MIXED SYNC. FIELD DRIVE is also fed from the Q1 output (pin 13) of IC5 to reset IC7b.

Since early 405 line sync. pulses were mains-locked, feeding a sample 50Hz signal into pin 4 of IC4 will no doubt improve results on receivers with deficient smoothing circuitry. With additional gates and low impedance outputs, the SPG section could also be used to drive 405 line picture sources such as cameras, monoscopes or flying spot scanners.

Description (Pattern Generator)

IC6 is a square wave generator locked to line sync. Its frequency is set by adjustment of RV3 and its output fed to the counter contained in half of IC7. This is reset by inverted line blanking pulses fed to pin 2. Similarly, IC8 generates a low frequency square wave locked to field pulses. Frequency adjustment is by RV4. Its output is linked to the second counter in IC7 which is reset by Logic 1 field drive derived directly from IC2.

Chequerboard

Composed from a number of black and white rectangles, the Chequerboard forms a useful test of poor synchronisation where there is the possibility of horizontal displacement of the white rectangles due to leakage of video information into the line sync. period. This is often prevalent in valve sync. separator circuits due, for example, to defective screen grid components or coupling capacitors. Badly resolved edge transitions indicate poor HF response whilst the linearity of line and field deflection can be assessed by the geometry of the rectangles over the entire screen area.

Vertical square wave signals are available at pin 3 of IC7 whilst horizontal bars are accessible from pin 11. They are fed to NAND gate G16 to produce a pattern of rectangles which are fed to G21. These signals are also

inverted by G17 and G19 and fed to NAND gate G20, the output of which is also fed to G21. This results in a pattern of offset rectangles combined into a Chequerboard signal which is subsequently fed to G29 for the addition of blanking pulses and gating by the pattern selector switch S1.

Cruciform

One of the earliest generated patterns, the Cruciform forms a bold black cross on a white background. Its a useful test signal possessing large areas of black which can reveal a lack of LF clamping - often absent in low cost monochrome receivers - as a brightening of the bars towards the bottom of the screen. The effect can be perceived as a tilt to the square wave video waveform by examination on an oscilloscope.

Poorly defined edge transitions again denote a lack of HF response whilst a receiver with inadequate sync. circuits may well endeavour to lock its timebases to the image rather than the sync. pulses.

Vertical bar patterns from pins 3, 4 and 6 of IC7 are, where relevant, inverted in G6 and G7 and fed to gates G10 and G11. The resultant two narrow vertical bars are combined in OR gate G12.

Horizontal bar patterns from pins 9, 10 and 11 of IC7 are similarly fed to AND gates G22 and G23. Inversion is, where necessary, accomplished by G18 and G19. OR gate G24 combines the two horizontal bars which are then passed to G13 where they are mixed with the vertical bar signal to give a Cruciform pattern at Logic 1. This is inverted by G14 and fed to G25 which provides similar blanking and switching functions to G29.

Step Wedge

Correct setting of receiver contrast and brightness is facilitated by a pattern of intermediate tones between black and white. This is provided by the Step Wedge (Grey scale) pattern of eight vertical bars positioned in order of INCREASING luminance across the screen.

Waveforms from IC7a are fed to AND gates C26, C27 and C28. Blanking is added together with the switching bias from S1 and the resultant bar signals summed in resistor network R14, R15 and R16 to give the Step Wedge.

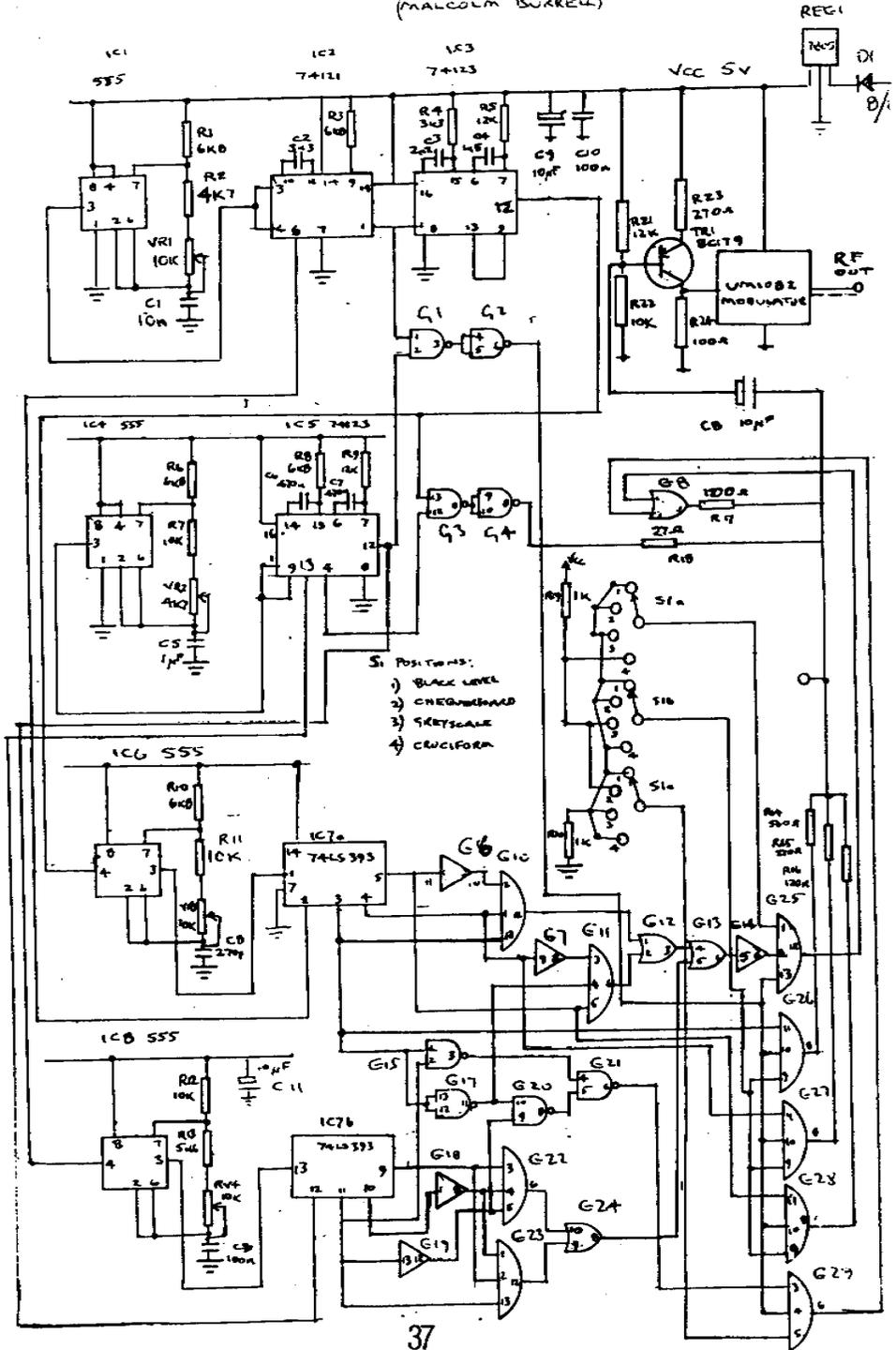
Sync. Pulses

Negative logic sync. pulses from G4 are resistively mixed with the video signal via R18. Meanwhile, R17 equalises the amplitude of the Cruciform and Chequerboard patterns with that of the Step Wedge.

Modulator

In the interest of maintaining a simple, versatile design: the unit provides a composite positive-going video signal which can be fed to any 405 line monitor or modulator. For those requiring a compact unit, however, a

40SLINE PATTERN GENERATOR (MALCOLM BURRELL)



commercial CCIR Channel E3 modulator has been specified due to its availability. This would normally accept 625 line positive-going signals to provide an RF output with negative modulation. However, a 405 line receiver requires positive-going RF which necessitates the inclusion of the inverter stage (TR1) to avoid internal modification to the modulator whilst also permitting simple adaptation of the pattern unit for use with alternatives or to provide a video output. Constructors can, therefore, omit irrelevant sections of the design to suit individual circumstances.

Construction

To facilitate ease of construction, a single-sided PCB has been designed to fit into a no. 203 Vero box. Whilst there is sufficient space for a power supply, a steering diode together with a 7805 regulator are incorporated, thus permitting the connection of mains adaptor capable of supplying 300mA.

Although it will protrude over IC13, there is sufficient clearance for a phono plug connection to the RF modulator. Component layout is shown in the diagram however, since there is a number of wire links (which should be insulated coupling cable) it would be good practice to refer to the schematic throughout construction and to insert these initially. Take care with those in the vicinity of the modulator and fit a small heat sink to the regulator. S1 is a four way, three-pole make before break switch.

Setting-Up

Having ascertained correct assembly, apply power to the pattern generator and tune the receiver (carrier frequency 56.5 MHz in the case of the UM1082 E3 modulator) until an image is displayed. Switch to BLACK RASTER and adjust VR1 and VR2 to lock the receiver timebases. Switch to STEP WEDGE and adjust VR3 such that the eight bars fill the screen. Select CRUCIFORM and check that the vertical bar is central in the display before setting RV4 to centre the horizontal bar. Finally ensure the presence of the CHEQUERBOARD signal when selected.

Component List

IC1 - 555 Timer	IC5 - 74LS123
IC2 - 74121	IC6 - 555 Timer
IC3 - 74LS123	IC7 - 74LS393
IC4 - 555 Timer	IC8 - 555 Timer
IC9 - 74LS00 (Gates G1, G2, G3, G4)	
IC10- 74LS04 (Gates G6, G7, G14, G18, G19)	
IC11- 74LS00 (Gates G15, G17, G20, G21)	
IC12- 74LS32 (Gates G8, G12, G13, G24)	
IC13- 74LS11 (Gates G25, G26, G29)	
IC14- 74LS11 (Gates G10, G22, G27)	
IC15- 74LS11 (Gates G11, G23, G28)	
RF MODULATOR: Astec UM1082 E3 (Manor Supplies)	
Electrolytic Capacitors: 16V Tant.	
Other Capacitors: Mylar 1V except C2, C5, C6, C7 - Polyester	

C4 - Polystyrene 160V
C8 - Ceramic Plate 100V
All Resistors 0.6W +/- 1%
D1: BY126 TR1: BC179 REG: 7805UC

The circuit diagram had to be photo-reduced to fit but if you would like an A4 size copy please send a stamped addressed envelope to the editorial address.

-----+
| STRANGE BUT TRUE |
-----+

>>>> Mystery circuits (anonymous)

Every ITV programme contractor has instructions on what to do in the event of a national emergency: this is to cease normal programming and instead take programmes from an unmarked circuit in the 'Lines Room'. This intrigued the staff at one company so they determined to find out where this circuit came from. That was difficult: no-one seemed to know!

In desperation they had a brainwave: they notified a fault on it. From this it transpired that the circuit came from the regional BBC headquarters, where, surprise surprise, there was a similar unmarked circuit from which *they* would take programmes if the unthinkable happened. They too were unable to determine the other end of their mystery circuit, so they too used the ruse of declaring it was faulty. From this it transpired that it came from BBC central control in London.

Independent local radio stations have sealed instructions on the action they are to take in the event of a similar emergency. At one station the staff could not stand the suspense any longer and had to open the envelope. The instructions inside said ... "Relay the BBC"! So now you know as well.

>>>> Dicing with death? (Adrian Morant)

In the early 1950s when people built their own TVs they had to make do with which ever CRTs they could find. The best of this bunch was the VCR97, whereas the VCR517 was less favoured because of its longer persistence (smearly pictures). Some people left their tube outside in the sun for a while as this was said to reduce the persistence - did this really work?

A friend who built his own set derived the EHT from a mains transformer 9" cubed - it gave 1200 volts at 0.5 amp! When he lost the picture for any reason he used to trace the EHT by drawing an arc with the tip of his finger! His logic was that the soles of his shoes would serve as adequate insulation.

[We do not recommend copying these dodges!!!]

>>>> Missing heritage?

A recent visit to the Science Museum in London (admission £2 now) revealed the startling fact that television is represented by only three exhibits, namely a pre-war Pye receiver and a nice model of the Alexandra Palace aerial (in the telecommunications gallery) and a Bush TV22 (not for sale) in the shop. I wonder why ... perhaps it's because everything else has been sent to their Bradford museum.

-----+
| NOTES AND QUERIES |
-----+

* From Dicky Howett, Chelmsford: I've often wondered what happens to redundant BBC/ITV cameras.

Most of these get junked unfortunately but ...

1. Bob Warren at Thames TV has about 30 different old broadcast cameras at Teddington, a fascinating collection which is not on open display at present,
2. there are some more of these at the Science Museum outpost at Bradford (the national museum of photography, film and television),
3. no doubt there are a few more in other museums,
4. several private individuals have the odd one or two broadcast cameras (they are members of ours and indeed, at least two people have complete old outside broadcast scanner vans to go with their cameras!
5. then there are quite a lot of folk who have old 405 line cameras which came from industrial or education TV setups. These cameras are a lot smaller and much more manageable in the home.

Even so, a lot of this stuff must get junked unfortunately. We try to keep our ears to the ground but we can't keep up with all the disposal outlets. If you know of any old equipment, please ring Brian Summers on 01-998 4739 (answering machine when out). Also, if you know of any other preserved TV equipment, please tell us!

-----+
| RECORDING RESOURCES |
-----+

One of our readers has made the excellent suggestion that we set up a register of video recording formats which we possess, so that if readers come upon a recording in a 'strange' format, we may be able within the Group to have it converted to a format they can use. We'd be pleased to borrow old recordings,

too, so we can build up our own archive of old programmes.

Formats we know we can handle include Philips LDL1000, Philips N1500, Sony CV-2000, Sony CV-2100, Sony 3420/3470, Sony Betamax, VHS and S-VHS. Does anyone have U-Matic and Philips N1700 for instance?

If you can help please drop a line to me at 71 Falcutt Way, Northampton, NN2 8PH or ring 0604-844130. Thanks!
(Andy Emmerson)

-----+
| PROGRAMMES SOUGHT
-----+

* I would be interested to hear from anyone who may have recordings of the mid-sixties ASP childrens' programme called *Forest Rangers* and screened by various ITV regions. The last time I am aware that this was broadcast was in the mid-seventies. Martin Loach, Oxford 735821.

* I'd be pleased to hear from anyone who has 1950s and 60s BBC and ITV demonstration films, any technical or instructional films on TV or the 'A for Andromeda' series (some hope!). Andy Emmerson, 71 Falcutt Way, Northampton, NN2 8PH (0604-844130).

-----+
| MARKET PLACE
-----+

This is the area for buying and selling all kinds of things to do with television, new or old.

Want to join in? Then send us your advertisement: there is no charge, although if space is short we may have to 'prune' out the least relevant adverts or hold them over until next time.

Advertisements are normally inserted for two issues: please indicate if you wish your ad. to run longer. There's no extra charge but we try to avoid repeating 'stale' material.

Traders are also welcome here but we do require people who are commercial dealers to state this in their advertisements. The letter (T) at the end of an advertisement indicates that the advertisement is 'trade'.

Also please note that we do not accept any responsibility for dealings resulting from these advertisements, which are published in good faith. Replicas and reproductions may be difficult to identify, so beware of any items 'of doubtful origin' and assure yourself of the authenticity of anything you propose buying. And try to have fun, after all it's only a hobby!

We have had a number of ads requesting 405 line recordings and circuit diagrams for standards converters and Band I modulators - why haven't we printed them? Well, the ads for videotape recordings were getting out of hand and there was no response to our idea of a clearing house. Building a standards converter is a major undertaking (parts are likely to cost £300 minimum) but one of our members who has built one is now working on a set of printed circuit boards and parts lists. Watch this space! And two designs for modulators have been published in *Television* magazine - see issue 1 of *405 Alive*, pages 10/11. We can supply photocopies.

Please note that we are not in a position to supply circuit diagrams, service sheets or other information on equipment. For this you need to read the small advertisements below and those published each month in *Television* magazine. But we will also print requests for help in this section of the newsletter. Most valves and other components are not hard to find: we recommend Billington Valves (0403-210729), Kenzen (021-446 4346), Wilson Valves (04575-6114) and PM Components (0474-560521). Would you like to recommend other firms? If you think a firm gives good service please tell us all!

* VINTAGE TVs, radios and testgear repaired and restored. Personal attention to every job and moderate prices. Estimates without obligation - deal with an enthusiast! (BVWS and BATC member) Please include SAE with all enquiries - thanks. Dave Higginson, 28 High Street, Misterton, Doncaster, Yorks., DN10 4BU. (T). Tel: 0427 - 890768.

* FOR SALE: several 405-only and dual standard sets cheap for quick disposal, 14" upwards. Dave Higginson (Yorks.), 0427-890768 (T).

* FOR SALE: (1) 56 minute video presentation made for the BATC "The Development of the TV Test Card". Your editor interviews George Hersee, designer of Test Card F. Lots of old test cards included. 625 lines, VHS only. Recorded on E-180, so you can put other material on the tape. £6 including postage.

(2) Audio cassette (90 minutes) of TV idents of the 1950s, 60s and 70s. Lots of defunct stations, starting with G9AED. Reference TV1.

(3) Ditto (60 minutes on C-90 tape), more recent (but still obsolete) material. Reference TV2. These audio recordings are put onto tapes of quality brand. Price £5 inclusive of tape, post and packing. Money back if not satisfied but I've had no complaints! Allow 14 days for delivery. Andy Emmerson, 71 Falcutt Way, Northampton, NN2 8PH.

* FOR SALE: Valves for your 405 line TV (and other equipment) can be obtained from Kenzen, Unit 9, 16-20 George Street, Balsall Heath, BIRMINGHAM B12 9RG. Send SAE for quotation by return or telephone 021-446 4346 or fax (new number - please note) 021-446 4246. Many thousands of new, boxed valves at unbeatable prices. We can also supply components, e.g. 'spot-tip-body' colour coded resistors, wirewound resistors, droppers, EHT capacitors, etc. etc. Send for

our latest 26 page catalogue of goodies - only £1 plus A4 size SAE with 32p stamp please. Interesting items available now include: ex-IBA UHF television transmitter (parts of), about 1/2 tonne of ex-BBC video and audio equipment (mostly 19" rack mounting) and lots of 19" video monitors. Callers welcome but please telephone the warehouse first.(T)

* FOR SALE: Regentone R143T receiver, BBC only, tuned to Holme Moss. Never used, still in manufacturer's box with showcard/price ticket! Very nice, perhaps unique - even gives raster when switched on. Offers please to Brain Day G8EKO on Heathfield (Sussex) 04352-6773.

* FOR SALE: Printed circuit board for David Looser's design of Band I modulator. Size 160 x 100 mm, undrilled. £5 including post and packing. Dave Boynes, 12 The Garth, Winlaton, Blaydon, NE21 6DD. Tel: 091-414 4751.

* FOR SALE: Eckovision TC138B 12" screen 405-line TV receiver. BBC only, came from the Oxford district. Wooden console, speaker at bottom, in good order, minor scratches (not deep). Complete except mains lead. £30 or near offer, can deliver locally. Paul Ewers, Brill (Bucks.), tel. 0844-237131. (T)

* FOR SALE: Ekco AD65 and AD76 reproduction dial bars: brown £18.75 incl. P & P, chrome £25.75 incl. P & P. R.E. Tucker, Foxhall Cottage, Caston, Attleborough, Norfolk, NR17 1BL.

* FOR SALE: This firm has (or at least had) Pye Lynx cameras without lenses for £20. Condition not brilliant, as recovered. Video Computer Systems, Coalville 810962 day, Coalville 32088 evenings.

* FOR SALE: GEC BT1252 14" TV £6; GEC BC3965 radio, working £10. Both good condition. WANTED: Marconi 296 chassis, back for VT73DA TV or complete set. High price offered for a Pye D18T console TV and a pre-war TV. Robin Howells, 6 Dunlin Drive, Spennells, Kidderminster, Worcs..

* FOR SALE: *Practical Television*, many issues (150 plus?) from 1950-1989. £15 the lot. Martin Loach, Oxford 735821.

* FOR SALE: Marconiphone 12" model 4618 TV, 405 lines only, grey wrinkle case, good condition but needs attention. Also Ferguson plano-key VCR model 3V16. Appears to work but needs attention. £20 the pair or exchange for what have you. B. Portas, 4 Summerfield Avenue, Waltham, Grimsby, DN37 0NH. Tel. 0472 - 824839.

* WANTED: Head for my Philips N1500 VCR, which I use for 405. Can you sell me one or tell where I can get one? Ray Whitcombe, 91 Winchester Avenue, Kingsbury, London, NW9 9TA.

* WANTED: Pre-war TV or late 1940s set. Any condition, anything considered, especially with mains-derived EHT system or octal/B9G valves. A.S. Redding, 13 Richmond Park Avenue, Rotherham, Yorks., S61 2JE. Tel. 0709 - 567531 after 6.

* WANTED: Can anyone sell me a ready-made modulator for 405 line TVs? Also any vintage electrical equipment and literature required for my personal collection. Contact Peter Matthews on Colchester 0206 - 766543.

* WANTED (I'm perpetually hopeful!): Loop type set-top aerial made by Belling-

Lee for VHF reception - this had a walnut bakelite base. Odhams Television Annuals of the 50s and 60s. *Basic Television* part 2 (Technical Press). Most kinds of closed circuit and industrial TV cameras and sales literature. Sony 405 line modulator, camera switcher and other accessories. Diode-matrix calligraph generator. Old C-mount lenses for TV camera, also 2" x 2" slides of test cards and captions to borrow and copy or buy. Andy Emmerson, 71 Falcutt Way, Northampton, NN2 8PH (tel: 0604 - 844130).

* WANTED: Does anybody know where I may obtain a replacement CRT for the Sony TV9-90UB 9" dual-standard TV. Tube type is 230DB4. Would prefer a new one if possible. Also wanted: Philips N1700 VCR, cheap! *Practical Television* for 1976 Jan., Feb.; 1977 Aug., Oct.; 1978 Jan., May; 1979 Aug., Oct., Nov., Dec.. Does anyone have any spares for the Philips LDL1000 series reel-to-reel VTR, which they want to dispose of? Martin Loach, Oxford 0865-735821.

* WANTED: Pye broadcast equipment, the mauve and light blue valve type. What have you? M. Bond, 0733-53998.

* WANTED: any old television magazines and books, wartime or pre-war *Radio Times* for the archives. Douglas Byrne G3KPO, Hon. Curator, The Wireless Museum, Arreton Manor, Newport, Isle of Wight. Tele. 0983-67666.

* WANTED: any recordings of Test Card C music (1950s until mid-1964). Keith Hamer, 7 Epping Close, Derby, DE3 4HR.

* WANTED: old camera tubes and other imaging devices sought for the BATC's collection. Also data sheets or technical articles relating to same (can photocopy and return within a few days if preferred). Also seeking an Orthicon to fill a gap in our historic collection. Peter Delaney, 6 East View Close, Wargrave, Berks., RG10 8BJ (tel: Wargrave 0734-403121).

* WANTED: I could do with a LOPTX and linearity control for a Bush TV22. Also a standard 8mm cine projector. Malcolm Burrell, 04023-40531.

* WANTED: Bush TV22 to love and cherish, or table model of similar era. Must be reasonably priced, as I am not made of money! Pat Hildred, 01-452 9087.

* WANTED: ditto. T. Rice, 89 Whipperly Way, Luton, Beds., LU1 5LD. 0582-414483.

* WANTED: 12" CRT type Emiscope 3/18 or Mullard 31/16. Norman Newbould on Cambridge 0223 - 63983.

* WANTED: Test Card C, either as a card or as a transparency. Also sight of the service manual for the HMV 905 7" TV-cum-radio of 1938. David Looser, Maristow, Holbrook Road, Ipswich, IP9 1BP. Tel: 0473-644589 (day), 0473-328649 (evenings).

* WANTED: Any recordings of BBC test card music taken from the 1950s, 60s and early 70s - in particular cheerful light music that preceded the childrens' programmes. Could reciprocate with other light music. FOR SALE: RGD model 6012T table TV - manufactured in 1952 - fixed tuned to old Crystal Palace transmitter. Would need new round tube plus valves, etc. - attractive case. £20 o.n.o. Paul Bulley, Sussex Lodge, Upper St. John's Road, Burgess Hill, Sussex, RH15 8HB. Tele: B. Hill 232516.

* WANTED: Circuit diagram and/or servicing information on Philips TVT/5M dual standard solid state crosshatch generator. Geoff Turner, 111 West Malvern Road, Malvern, Worcs., WR14 4NG. 0886-32453.

* WANTED: *Practical Television* index to volumes 1 and 28. I also require some back numbers in the last 10 years. Martin Loach, Oxford 0865-735821.

* WANTED: Bush TV22 in any condition, also interested in any other bakelite TVs. Good prices paid! Stephen Maitland, 12 Church Walk, Kinghorn, Fife, KY3 9TP. Tel: 0592-890235.

* WANTED: Independent Television trade test music lists for the following periods: (i) Jan - Jun 1958, (ii) Jan - Jun 1959, (iii) Jul - Dec 1959. Bob Jones, 215 Longheath Gardens, Croydon, Surrey, CR0 7TR. Tele: 01-656 3887. All costs will be reimbursed. [If you get any response, PLEASE let us know, Bob. Many readers would also like to see this info!]

* WANTED: *The Quatermass Experiment and Quatermass II* by Nigel Kneale in Penguin paperback form. Dicky Howett, Chelmsford 0245-441811.

* WANTED: To buy or copy, all costs reimbursed. Original Bush TV service manuals for TP01583, TP1421, TP1431, TP1380, TP1396, TP1375 and TP1473 (TV103 to TV118 series); Pye model LV30 original manual and Murphy 'Astra' series UHF/625 converter kits original service data. I already have a circuit diagram for the latter. I am also still looking for a Murphy 'Astra' series TV + Radio/625 convertible, model V789 or V783. Dave Hazell, 0993-771373.

* WANTED: Cathodeon Staticon type C932, will buy or swap for a new Telefunken Orthicon (for studio cameras). Also a pre-war vision-only receiver - good price paid. Rudi Sillen, Limberg 31, B-3170 HERSELT, Belgium.

* WANTED: pre-war HMV or EMI radios, paperwork or consider cash sale (offers £30 plus). Andrew Denton, 41 The Grove, Norton, Malton, Yorks., YO17 9BW. 0653-694804.

* WANTED: Photocopy of service sheet for a 9" Ferguson 941T and for Channel type T2 405-line pattern generator, both of which I am working on. Dave Hooper, 2 Cypress Lawn, Templeogue, Dublin 6W, (Eire).

* WANTED: I need a small 9" or 12" 405-line TV or else just the cabinet and back only. Also, does anyone have a 9" GEC in bakelite cabinet? Open for swap/cash. Ian Beckett, Gorran, Chackmore, Buckingham, MK18 5JF. Tel: 0280-813448.

* EXCHANGE: various 405 line recordings on VHS tape or Sony CV2000 format for others. Andy Emmerson, 71 Falcutt Way, Northampton, NN2 8PH.

* EXCHANGE: I have 29 copies of *Television*, January 1968 - July 1970 (with 1968 complete) to swap for *Television* Sept 1984 - April 1985 inclusive. WANTED: pre-war EMI/Murphy/Ultra/Ekco TV, prefer table model. Allstair Jones, tel: (work) 0743-232391.

* EXCHANGE: Having just bought even more old magazines, I now have loads of *Practical Televisions* to dispose of (most issues of *PT* for the years between 1950 and 1960.) It's worth sending me your wants lists (plus a SAE please); I

can sell you these mags at 25p each (plus post) or, preferably, swap them for issues I am missing. Act now, while I still have them! In the meantime I am looking for *PT* April, November 1950; March, April, November 1956; July and September-December 1961; February 1962; March 1965. Andy Emmerson, 71 Falcutt Way, Northampton, NN2 8PH.

* **CALLING ALL DXers!** Keep up to date with *Teleradio News*, the only magazine for dedicated enthusiasts. Six issues a year cost you just £6 post paid, so send your name and address with a cheque made out to HS PUBLICATIONS, 7 Epping Close, Derby, DE3 4HR.

* **HELP OFFERED:** I know of places where very old televisions do turn up in various conditions. If other members are seeking a set give me a ring. Paul Thorpe, 0922-645683.

* **RECOMMENDED SHOP:** J. & N. Bull Electrical, 250 Portland Road, Hove, Sussex has old TV servicing equipment from time to time, also obsolete and spare parts at reasonable prices - Albert Pritchard.

* **HELP!** I am desperately in search of mains drive belts for Ferguson/Marconiphone reel-to-reel recorders. I just cannot obtain them anywhere. The specific model is 3247/4247 and part number 08C8-110001. Perhaps someone out there has some spares - if they could drop me a line I would be grateful. Paul Pearson, 10 Osborne Road, Hartshill, Stoke-on-Trent, ST4 7PF.

* **MOMI - THE WORLD'S MOST EXCITING CINEMA AND TELEVISION MUSEUM.** South Bank, London SE1. Tel 01-928 3535.

* **NOTHING** to do with vintage TV but if you are interested in the 'alternative' video and independent TV production scene, you may care to read *Independent Media*, a thick monthly magazine costing £1.25. Full details from Independent Media, 7 Campbell Court, Bramley, Basingstoke, Hants., RG26 5EG. Telephone 0256 - 882032.

+-----+
| **GOOD HOMES WANTED!** |
+-----+

The following items have been offered free of charge or almost free by their generous owners, though they will doubtless accept small donations if you are pleased with what you get! In each case the advertiser has agreed to hold the items for one month from publication - after then it's the corporation rubbish dump. You have been warned!

FREE: Newnes Radio and TV Servicing. Mostly early volumes, you pay post. Martin Loach, Oxford 735821.

FREE: Bush TUG34 chassis, will dump it soon! Ray Whitcombe, 91 Winchester Avenue, Kingsbury, London, NW9 9TA.

FREE: Philips projection set, model 1400. Will need to be collected. Mike Hill, Hillside, Walking Bottom, Peaslake, Surrey, GU5 9RR. Tel. Dorking 730186.

NEWSLETTER CONTRIBUTIONS

We want to hear from YOU! This is *your* newsletter, so please send in your letters, notes and articles; don't be bashful, other people *will* be interested in what you're doing! As we do this for fun, not profit, we regret that we cannot pay for contributions but authors are encouraged to retain their copyright and are free to publish their articles in other publications as well.

If at all possible, please **TYPE** your contributions using a dark, black ribbon. I don't have a lot of time to spend retyping and editing: I'd much rather print stuff exactly as it comes in!

Contributions on computer disk are particularly welcome and your disk will be returned. I can handle most variations of IBM PC, Amstrad and CP/M disks in 3", 3.5" and 5.25" size but please process your words as an ASCII or WordStar file. I cannot handle BBC or Macintosh disks, and if in doubt please ring first on 0604-844130. Thanks.

Salary up to how much? For Electronic Engineers? WOW!

GRANADA
DESIGN & DEVELOPMENT
need **TWO** more ENGINEERS

**ELECTRONIC
APPLICATIONS ENGINEER**

with experience in the mathematical approach to electronic equipment development.

**TELEVISION RECEIVER
DEVELOPMENT ENGINEER**

with experience in TV Receiver production.

Working conditions are excellent. You get full Granada Group benefits. And a salary up to £2000 per year.

Write (giving details of qualifications, experience, present salary) to:

C. H. BARDS, CHIEF ENGINEER, ATHERTON STREET, MANCHESTER 3

MARCH, 1965

THE BACK PAGE

* **405 Alive** is the newsletter of the 405 Line Group, an independent, informal non profit-making group devoted to the study and preservation of old television technology. It is sent to subscribers without further charge and thus has no cover price. This publication is not subsidised by any other organisation. Publication is at approximately three month intervals, normally in January, April, July and October.

* Editorial correspondence should be sent to Andrew Emmerson, 71 Falcutt Way, Northampton, NN2 6PH. If your letter is not intended for publication please indicate this clearly. All letters are gratefully received and will be acknowledged in the next Newsletter if not sooner. If you are expecting a reply you *must* include a stamped addressed envelope *and* preferably also your telephone number - thanks.

* Advertising rates. Classified: free to subscribers. Display, using your artwork: £5 per half page.

* Copyright (c) 1990 by Andrew Emmerson and contributors. E&OE. Whilst every care is taken in the production of this newsletter, the editor and the Group accept no legal responsibility for the advice, data and opinions expressed. No guarantee of accuracy is implied or given for the material herein. The contents of the newsletter are covered by copyright. Partial reproduction is allowed so long as the source is quoted.

* Allied interest groups. For details of the BRITISH VINTAGE WIRELESS SOCIETY send SAE to Gerald Wells, Vintage Wireless Museum, 23 Rosendale Road, London, SE21. To join the BRITISH AMATEUR TELEVISION CLUB send SAE to Dave Lawton GOANO, Grenehurst, Pinewood Road, High Wycombe, Bucks., HP12 4DD. NARROW BANDWIDTH TV ASSOCIATION: send SAE to Mr N Reynolds, 6a Collingbourne Road, London, W12 0JQ.

* Other specialist publications of interest: RADIO BYGONES, 8a Corfe View Road, Corfe Mullen, Wimborne Dorset, BH21 3LZ. TELERADIO NEWS, 7 Epping Close, Derby, DE3 4HR. Send SAE for details.

WOULD YOU LIKE YOUR OWN COPY OF 405 ALIVE?

Perhaps you are reading a friend's copy - now you can't wait to receive your own copy four times a year. This is what you do ...

You send a cheque for £8 (made out to A. N. Emmerson), which will pay for a year's issues (four). The address is 71 Falcutt Way, Northampton, NN2 6PH.