

Even in film studios the sound engineers needed to work only in prescribed areas for the length of a take - and could always go for take 2 - and the safety net of post-production dubbing.

But the problems that arose from actors walking about - the dead areas, the live sound, were quickly dealt with by the boffins at Nightingale Square, the then home of [BBC] Research Department. It was here that I played such a monumentally insignificant part.

Signed up by Dicky Drewe to work for seven quid a week (if I'd known how anxious he was to recruit staff for the move to Kingswood Warren I'd have stuck out for seven pounds ten!) I became a BBC designer/draughtsman.

My first job was, literally, a cracker.

A lovely scientist whose name I have unfortunately forgotten was testing the studios at Alexandra Palace for acoustics; and to get accurate decay measurements he needed a standard sound. No, not a tone source, a pop! Well perhaps not a pop, more of a sharp crack really.

And that's how he and I endeavoured to build the ultimate pop-gun. Based on a child's toy, popular at the time, it produced a bang by rupturing a diaphragm of paper with compressed air.

We built ours of brass and enlarged it to the size of a blunderbuss. When fired, the retractable spring-loaded piston compressed the air inside, forcing it through the paper which sealed the muzzle, producing a sound like the bursting of a paper bag (remember those?). Visitors to the drawing office would leave white-faced and shaking, while my fellow draughtsmen petitioned management to have me re-located in a shed outside.

Super-gun it was - constant it wasn't. I don't think it ever made the journey to AP.

Reluctantly we abandoned the project, returning the various parts to stores for re-use. My boffin went on to write abstruse papers about narrow-band sound filters while I was forced to work on such prosaic things as chassis layouts, microphone plots and wiring diagrams for derivative equalisers.

But Heath Robinsonism will out and fired by my first lack of success I went on to design even more bizarre devices. Perhaps in some later edition of *405 Alive* the editor will let me talk about them.

*No perhaps about it - it's an order! [AE]*

## David Grant's 625 to 405 Standards Converter

*A review by Jeffrey Borin*

Suddenly the world is full of standards converters! David Grant's converter has existed for a little while but I have only recently obtained a sample for review. Inevitably this review will compare his design with the Pineapple unit reviewed in the last issue of *405 Alive*.

## A FAMILY OF CONVERTERS

This is not one design but a whole family. This ranges from a kit without interpolation at £180 to a unit built in a very professional 19" rack case for over £800.

At the time of writing not all prices had been finalised but here is some idea:

Kit without interpolator: £180

Kit with interpolator: £250

The kits come with all tricky assembly such as surface mount components done. The analogue parts are pre-aligned so no test equipment is needed. Assembly is not difficult but remember that soldering chips to PCBs is a rather different task to wiring valveholders. You will need to provide your own box and power supply. Instructions are provided along with circuit diagrams etc.

Ready built unit including box and power supply: Add £80 to above.

Broadcast grade video filters, 19" rack case etc are by individual quotation.

There is no intention to add a modulator. Refer to my review of the Pineapple converter for information on modulators.

## FIRST THOUGHTS

Operation could not be simpler. The only control is the mains switch! BNC sockets are provided for 625 video in and 405 video out.

The construction quality is excellent. There are two PCBs for the main converter and a further one for the interpolator. These all plug into a small PCB mother board. Unfortunately this means that access to the lower boards is very limited so faultfinding and repair might be tricky. On the other hand it all runs cool and should be very reliable.

The review sample used a small switchmode power supply. This was not shrouded and would make working inside the box quite hazardous. With the outer cover in place the converter is perfectly safe. I am assured that all future converters will have their live parts adequately covered. Future units will probably also have a linear power supply since the total consumption is under 10 watts.

## INTERPOLATION

David Grant's converter uses conventional line store technology and its concepts are based on the BBC CO6/509. This contrasts with the Pineapple and its frame store. The two line interpolator uses successive lines from the same field. It is fully digital unlike the Pineapple design. The interpolation is excellent and difficult to distinguish from the CO6/509 which uses four lines.

## RADIO INTERFERENCE

The converter contains much high speed digital circuitry which is a potent source of RF interference. If you buy a kit you must house it in a metal box. The review sample did not cause any significant interference.

## ENGINEERING NOTES

All the circuitry has been designed and built to a very high standard. It is difficult to find even the most minor fault with the performance of the converter. In the absence of video input the converter produces 405 line sync at the wrong frequency. This is comparable to the BBC CO6/509. With very poor quality inputs it is possible that the Pineapple converter with its frame store might produce usable pictures where David

Grant's might not. Certainly the Pineapple converter is incapable of producing bad 405 sync pulses however grim the picture looks.

### PICTURE QUALITY

The subjective picture quality is very good. I compared the converter with a BBC CO6/509 using a professional video monitor and several receivers both pre- and post-war. It was difficult if not impossible to tell the difference. In particular there was no ragging of verticals. (NB this effect is still present on a production version of the Pineapple converter that I saw recently) The unit copes well with VHS replay.

### CONCLUSIONS

For many people the Pineapple converter will be the right choice. It is cheaper, has some nice tricks like picture freeze and gives good pictures. If you want the very best results or if you enjoy building a kit then David Grant's converter offers outstanding performance and is recommended.

## Coming next...

The article starting on the next page by Tony Currie appeared first in *Television*, the journal of the Royal Television Society (yes, that one, not the magazine previously called *Practical Television*), and is reprinted here with his permission and with acknowledgment to the RTS. There are two minor points worth mentioning: Victor Lewis-Smith was not the person who discovered the Law of Logos. In his usual derivative manner, he ripped off the idea from Peter York, who had expounded it earlier on BBC2's *The Late Show* (but nobody stays up that late to watch BBC2).

Technically, most of these symbols are emblems or idents rather than logos. The Oxford Dictionary defines a logo as a printed symbol (not a heraldic device) used by a corporation or business company etc. as its emblem; the word is short for logotype and comes from printers' jargon to cover the situation where a word (*logos* in Greek) was used so frequently it was worthwhile making up a block of type for the complete word (rather than setting it up letter by letter). Of course, not many printers use type set in metal these days but the expression has stuck.

Most of these TV emblems are abstract symbols or devices rather than words! In the TV business they are often called visual idents, short for identification symbol, since they were used to distinguish the station you were watching (or which had created the programme that followed).

Fine - end of lecture, over to the inimitable Tony Currie...