When a favourite TV show is literally consigned to the scrapheap, most people would give it up. One fan didn't; he set out to recreate it.

New age cybermen

Just thinking about that creepy, spine-tingling theme music is enough to bring back fond memories of floppy scarves, metallic mutts and exterminating aliens. *Doctor Who* ended in 1989 after a 26-year run, but since then there's been an explosion in official and unofficial merchandise — everything from original fiction to PC games and audio adventures. I'm pleased to say that I've now made a small contribution to the growing range of unofficial *Doctor Who* memorabilia.

For many devotees, the show's first decade, featuring William Hartnell and Patrick Troughton in the lead role, is remembered with particular fondness. Sadly, many of the episodes from this period are missing. By 1969, 253 episodes had been produced, but 109 have yet to be located. The BBC purged much of its film stocks during the '70s and *Doctor Who* fell victim to the Beeb's desire to dump material no longer considered to have commercial value. How wrong they were!

Fortunately, an abundance of other material, such as photographs, audio recordings and BBC documentation still survives. Thanks to PC technology and meticulous research into the camera scripts, a small group of dedicated fans,

including myself, have recreated the missing stories. The reconstructions have even convinced the BBC that a market exists for such material, and they have already released two incomplete stories.

The fan-produced reconstructions are amateur efforts produced with no profit motive and no official distribution, but we like to think that a professional level of care goes into the creative process. These unique compilations have given fans such as myself, who are too young to have seen the original stories, access to a very special period of the show.

You might be thinking that this endeavour would require costly equipment likely to be found only in TV stations. Actually, most home PCs already possess sufficient power to undertake television reconstructions. Many of my earlier reconstructions were completed on a humble Pentium 90 with 32M of RAM.

Photographs

The first step in any reconstruction is to gather together relevant source material. Depending on the quality of the material, some effort may be required to get it into a condition capable of being displayed on a television screen. All the material for the *Doctor Who* reconstructions is over 30 years old, so hours of restoration work is often required before even a single frame of video footage can be created.

Many of the early *Doctor Who* stories were accompanied by an extensive collection of off-air photographs. These were taken by a freelance photographer hired by the BBC to keep a permanent record of the programs. In addition to these photographs, many publicity shots were also taken. Additional pictures taken by set designers, cast and other crew are also available. Unfortunately, due to the age of the material, much of it is afflicted by coffee stains, poor contrast and general wear and tear.

This is where the PC plays a crucial role in the reconstruction process. After the photos and slides are scanned at the highest
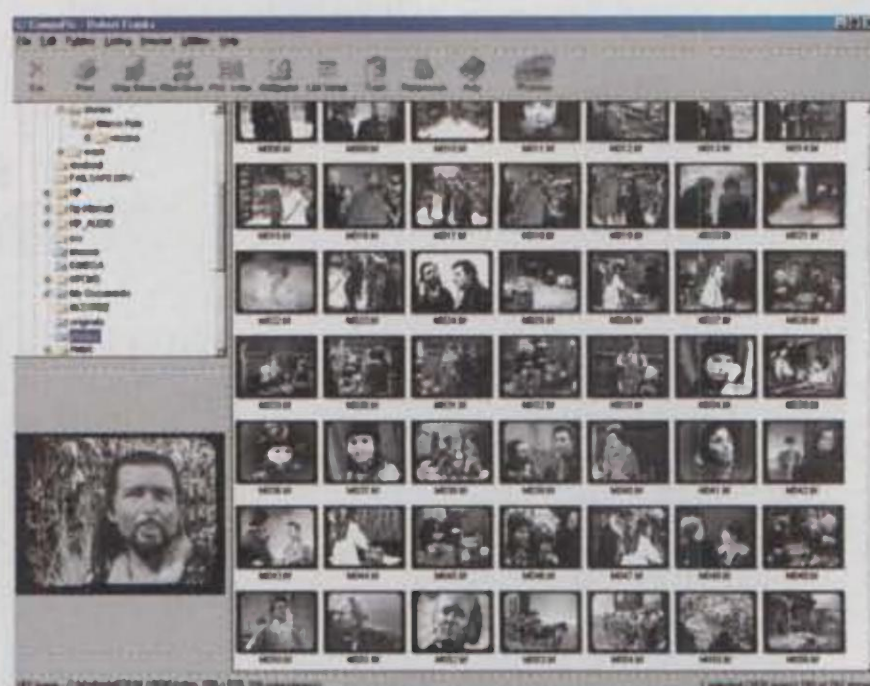
▲ CompuPic makes housekeeping easy.

possible resolution, the resulting images are saved in TIF format. Then, with the help of photo enhancement software such as Adobe Photoshop or Paint Shop Pro, extraneous material is removed from the images. As many of the scanned images contain similar defects, a restoration 'macro' can be created and re-applied to all subsequent scans.

An image management tool for organising the photographic collection is also essential. CompuPic is an excellent package for this job. All images can be managed with the Windows Explorer-style interface, including the ability to view thumbnails. If you're dealing with a reconstruction project with over 700 photos, software like this is crucial just to stay sane!

Soundtrack

The other major source of material for the reconstructions is the audio track. Some early *Doctor Who* fans recorded all of the missing 109 episodes onto reel-to-reel audio tape. Considering the staggering cost of blank reels at the time (approximately £2 each in 1965, when the average salary was only £6 per week), these people were obviously very committed to the show.

The audio recordings are a mixed bag in terms of quality. One enterprising fan devised a method to connect the speaker on his TV directly to a tape recorder — not a bad effort for a 15 year old. However, most recordings were produced by holding a microphone against the TV speaker.

THE ROOF OF THE WORLD

The Doctor's group are surrounded by a band of Oriental warriors ...
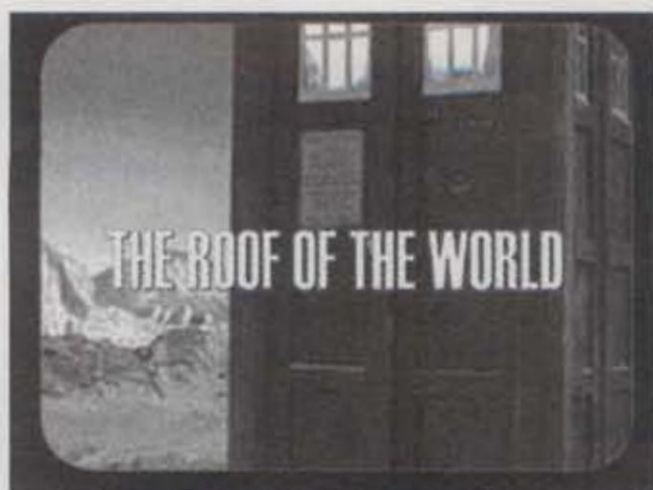
▲ Typical reconstructed *Doctor Who* slides

Fortunately, all audio soundtracks can be enhanced using sound-editing software. Professional quality equipment is available (such as ProTools, which is used by the BBC's sound restoration expert), but it's too expensive for most of us. However, with perseverance, we've managed to obtain excellent results using smaller packages such as Cool Edit (see *APC* July, page 109). These packages don't cost a mint; Cool Edit 2000 is currently available for $US69.

Audio restoration is an art form in its own right, and an entire article could be devoted to the subject. The two most important factors to be aware of are that affordable software to do this work does exist, and that considerable time and effort may be required to enhance your existing soundtrack. The software removes clicks, background hum and bursts of static, but this takes some time, so be prepared to spend some long evenings in front of your PC.

Video footage

Apart from photos and soundtracks, another useful source of material is video footage. Although complete episodes have been destroyed, snippets of filmed scenes still exist. Sometimes this is because other television programs have used *Doctor Who* footage. However, in many cases the snippets are amateur recordings made by someone present at the filming, or by an enthusiast aiming a film camera at a television screen (strange as this may sound).

Like the audio recordings, the video footage often needs restoration. For example, the footage sometimes plays at the wrong speed. Ulead VideoStudio can be used to correct this problem (the professional MediaStudio is much too expensive). However, this video-editing software plays a bigger role when it comes to putting the jigsaw together.

Other elements

You may be wondering whether suitable material exists for all the scenes that need to be recreated. After all, an average *Doctor Who* episode is nearly 25 minutes long, and some multiple episode stories originally constituted over 150 minutes of material. Because some stories contain a very limited amount of visual material (less than a dozen photographs in some

▲ Creating a composite photo: add the character to the set, and voila!

cases), we've had to employ some very creative techniques.

One technique we've developed is the creation of 'composite' images. This involves taking an image from one photograph, such as a character, and pasting it on top of another image, such as a set background. Most graphics packages contain tools for capturing parts of an image, resizing and retouching the image as necessary, and pasting it on top of another. Despite this, considerable practice is required to create realistic composite photos. As I've discovered, a crystal clear character standing in front

▲ VideoStudio: the engine room for reconstructions

of a dark, blurry background does not produce a realistic image.

Another technique we've used to enhance a reconstruction are explanatory text captions. A simple text message displayed onscreen for a few seconds can often make sense of a scene which would otherwise be bewildering based on the audio alone. *Doctor Who* is an adventure series, so it features lengthy passages without dialogue. To maintain viewer interest during these scenes, some onscreen text is required. I've also discovered that captions are useful for depicting brief actions, such as characters entering or leaving rooms.

All together now

Once the individual elements are in place, I then combine them into a single production. This is where video-editing software, such as Ulead VideoStudio, plays a pivotal role. At first glance I thought this software was complicated (with its various 'streams' for video, audio and overlay material), but I discovered it was easy to put together stunning sequences. I've learnt that good editing software should offer more than basic functions such as importing and rearranging source mate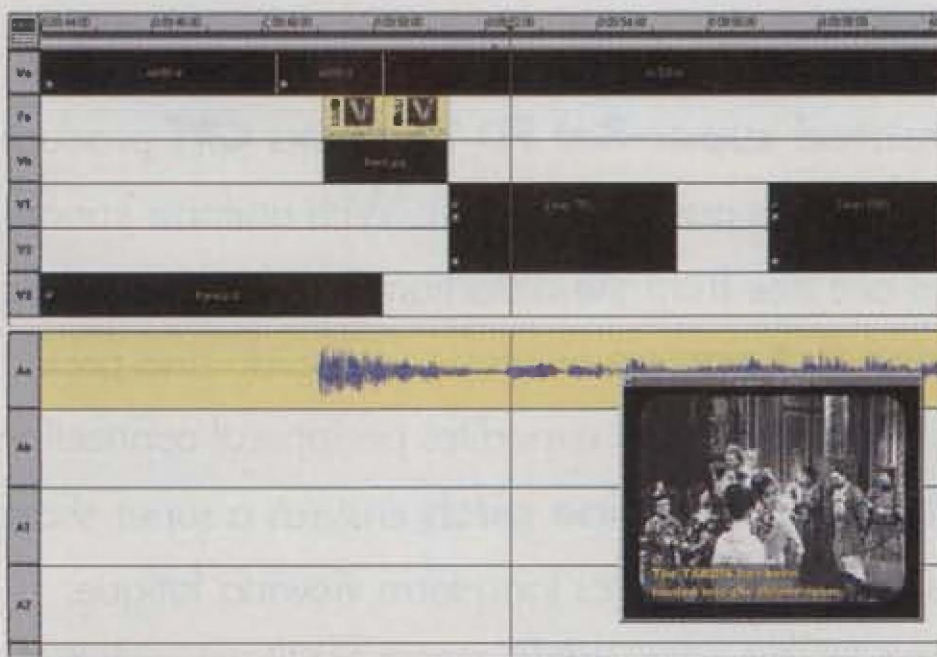rial. It should also provide transition effects from one clip to another (for example, fade to black) and the ability to preview completed work. VideoStudio performs all these tasks.

After my reconstituted episode has been born and turned into a video file (MPEG or AVI), it can be outputted to another medium. The video file is usually incredibly large (for *Doctor Who* episodes, 1.5G to 2G is not uncommon), so the choice is somewhat limited. In the early days, we went for VHS tape over CD-ROM, because CD burners were expensive and hard to come by four years ago. To use video tape, I had to purchase a PC-to-TV encoder box so that the PC signal could be outputted directly to a VCR.

Next, it's time to sit back on the lounge and watch your efforts unfold on the screen (and try not to cringe when a silly mistake is spotted). Viewing the piece of television you have created is perhaps the most satisfying part of all. There's really no limit to the creativity you can use in combining source material, photographs and sound, and awe-inspiring results can be obtained. Not bad for something containing very few moving pictures.

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