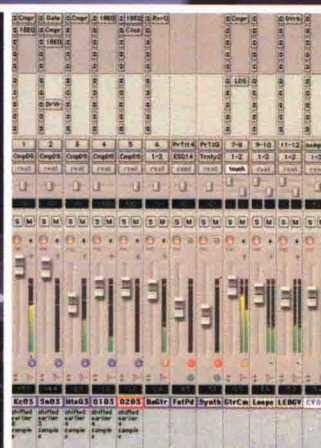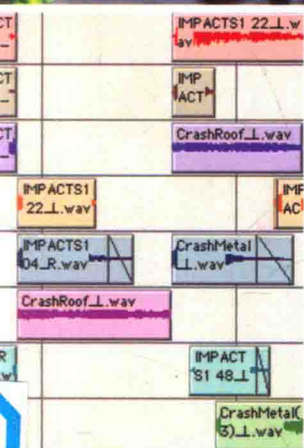Hilary Wyatt•Tim Amyes

Audio Post Production for Television and Film

An introduction to technology and techniques

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Third edition

Hilary Wyatt and Tim Amyes

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Acknowledgements

About the authors

Hilary Wyatt is a freelance Dialogue Supervisor and Sound Effects Editor. She began her career in 1987, creating sound effects and editing music for a number of long-running British 'cult' animation series.

Since then, Hilary has worked as a Sound Effects Editor on a wide range of productions, including commercials, documentary, drama and feature films. In 1999 she supervised the dialogues on the British gangster film *Sexy Beast*, and has since worked as Dialogue Supervisor on a number of British and American features. Recent credits include *Jojo In the Stars* (animation), *Absolute Power* and *Dr Zhivago* (TV), *Bright Young Things*, *Dear Frankie*, *Something Borrowed* and *White Noise* (features).

Tim Amyes has many years experience in post production, covering the whole production chain. As well as being a former sound supervisor at Scottish Television, Tim has worked at two other companies in the British ITV network, both as a sound recordist and dubbing mixer. He has been involved in industry training from the start, serving as one of the original members of Skillset, which was set up to provide training standards (NVQs) for the UK television and film industries. He has also served on both national industry and union training committees, and advised on the recent Scottish Screen/BFI publication *An Introduction to Film Language*.

Currently, Tim lectures in audio, produces specialist corporate videos, and writes, having sold documentary scripts to both the BBC and ITV. A keen film enthusiast, he is a past member of the Scottish Film Archive's advisory committee.

Introduction to the third edition

The focus of this book is audio post production, one of the last stages in the creative process. By the time it takes place, many crucial decisions will have been made regarding the sound – sometimes in consultation with the sound post production team, sometimes not! It is important for those working in audio post production to have a working knowledge of what happens on location, or in the studio, and during the picture edit, as all these stages will have a bearing on their own work, both technically and creatively. The third edition has therefore been completely rewritten and restructured to provide a step-by-step guide to the professional techniques that are used to shape a soundtrack through the production process.

This edition is split into two parts. Part 1 deals with the technical nuts and bolts of audio post production – how audio is recorded, how sound and picture are synchronized together, how audio is transferred between systems, and how film and video technology works. You may find it useful to refer back to these chapters when reading the second part of the book, which follows the path of production sound from its original recording right through to the final mix and transmission. Part 2 is structured to follow a typical post production workflow. It examines the equipment used at each stage, how it is used, and it includes many of the practical techniques and shortcuts that are used by experienced editors and mixers.

This book uses the generic terms 'non-linear picture editor' (abbreviated to NLE) and 'digital audio workstation' (abbreviated to DAW) to describe systems in general use at the current time. On some occasions we have been more specific, and have mentioned actual manufacturers where we felt it important. However, we have only named equipment we feel is in standard use, and which is likely to be around for many years to come. The reader should, however, bear in mind that some aspects of audio technology are changing at a very rapid rate.

Hilary Wyatt

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Part 1

Audio Basics

The evolution of audio post production

Hilary Wyatt

An overview

The term *audio post production* refers to that part of the production process which deals with the *tracklaying, mixing* and *mastering* of a soundtrack. Whilst the complexity of the finished soundtrack will vary, depending on the type of production, the aims of the audio post production process are:

- To enhance the storyline or narrative flow by establishing mood, time, location or period through the use of dialogue, music and sound effects.
- To add pace, excitement and impact using the full dynamic range available within the viewing medium.
- To complete the illusion of reality and perspective through the use of sound effects and the recreation of natural acoustics in the mix, using equalization and artificial reverbs.
- To complete the illusion of unreality and fantasy through the use of sound design and effects processing.
- To complete the illusion of continuity through scenes which have been shot discontinuously.
- To create an illusion of spatial depth and width by placing sound elements across the stereo/surround sound field.
- To fix any problems with the location sound by editing, or replacing dialogue in post production, and by using processors in the mix to maximize clarity and reduce unwanted noise.
- To deliver the final soundtrack made to the appropriate broadcast/film specifications and mastered onto the correct format.

The Man Who Knew Too Much – Reel VII
Alfred Hitchcock sound notes:

The scenes in the hotel room continue with the same sound as indicated above.

In the Camden Town street we should retain something of the suburban characters of the barking dog and the distant hammering iron.

Now to the question of the footsteps. These are very, very important. The taxi that drives away after Jimmy gets out should be taken down as quickly as possible because we want no sounds other than very distant traffic noises because the predominant sound is the footsteps of Jimmy Stewart. They seem to have a strange echo to him because they almost sound like a second pair of footsteps, until he stops to test it and the echoing footsteps also stop. When he resumes, they resume. And to test it further he stops again, but this time the echoing footsteps continue. Then he slows down and the echoing footsteps slow down. Now as he proceeds the echo gets louder but his own footsteps remain the same volume. And when he looks around the second time we see the reason for the echoing footsteps. They belong to the other man. Now the two sets of echoing footsteps are heard. The quality of echoing footsteps diminishes and they become more normal than Jimmy's and remain normal as the other man passes Jimmy and crosses the street to enter the premises of Ambrose Chappell.

Make sure the bell that Jimmy presses at the Taxidermist's door is rather a weak one and has quite an old-fashioned quality. Don't have it a very up-to-date sharp ring because it would be out of character with the place.

Once Jimmy is in the room there should be just the faint sound of men at work, a cough or two and perhaps a bit of filing noise, an odd tap of a light hammer, etc.

Mr Tomasini has special notes concerning the re-dubbing of Jimmy's lines after Ambrose Chappell Jnr. has said they have no secrets from their employees.

Note that the correct amount of dialling should be heard when Ambrose Sr. dials. When Jimmy opens the door to exit let us hear some outside traffic noise and banging iron noise again and barking dog noise just for a brief moment.

Back in the Savoy suite the same sounds apply but it would be wise to avoid Big Ben again. Otherwise we would be committing ourselves to certain times which we should avoid.

Outside Ambrose Chappell again some suburban noise, distant children's cries at play, and the odd traffic that goes by at the end of the street.

Reel VIII ...

Figure 1.1 Alfred Hitchcock's sound spotting notes for *The Man Who Knew Too Much* (courtesy of The Alfred Hitchcock Trust).

A little history: the development of technology and techniques

Despite the fact that audio post production is now almost entirely digital, some of the techniques, and many of the terms we still use, are derived from the earliest days of film and television production.

The first sound film

The first sound film was made in America in 1927. *The Jazz Singer* was projected using gramophone records that were played *in synchronization* with the picture: this was referred to as the *release print*. Film sound played on the current enthusiasm for radio, and it revived general public interest in the cinema. Around the same time, Movietone News began recording sound and filming pictures of actual news stories as they took place, coining the term *actuality sound and picture*. The sound was recorded photographically down the edge of the original camera film, and the resulting *optical soundtrack* was projected as part of the picture print.

At first, each news item was introduced with silent titles, but it was soon realized that the addition of a commentary could enliven each *reel* or *roll* of film. A technique was developed whereby a spoken *voice-over* could be mixed with the original actuality sound. This mix was copied or recorded to a new soundtrack: this technique was called 'doubling', which later became known as *dubbing*. Any extra sounds required were recorded to a separate film track, which was held *in sync* with the original track using the film sprockets.

Early editing systems

Systems were developed that could run several audio tracks in sync with the picture using sprocket wheels locked onto a drive shaft (see Figure 1.2).

The synchronizer and Moviola editing machines were developed in the 1930s, followed by the Steenbeck. The fact that shots could be inserted at any point in a film assembly, and the overall sync adjusted to accommodate the new material, led to the term *non-linear editing*.

Dubbing/re-recording

Early *mixing consoles* could only handle a limited number of tracks at any one time – each channel strip controlled a single input. Consoles could not play in reverse, nor *drop in* to an existing mix, so complete reels had to be mixed *on-the-fly* without stopping. This meant that tracks had to be *premixed*, grouping together *dialogue, music* and *fx* tracks, and mixes took place in specially built *dubbing theatres*. Each of the separate soundtracks was played from a *dubber*, and it was not unusual for 10 machines to be run in sync with each other. A *dubbing chart* was produced to show the layout of each track.

Early dubbing suffered from a number of problems. Background noise increased considerably as each track was mixed down to another and then copied onto the final print – resulting in poor *dynamic range*.