

# Sound for Star Wars Episode II



To mark the release of the latest Star Wars installment on DVD, Richard Clews talks to legendary Sound Designer, Ben Burtt, and Sound Editor Matthew Wood about the project.

**T**he return of the *Star Wars* saga to cinema screens is always eagerly anticipated. The most recent instalment, *Attack of the Clones*, rewarded fans with some of the most spectacular scenes yet, including a huge land battle and some classic lightsaber duels. Another factor that added to the expectation was the use of High Definition videotape in place of 35mm stock. For the Production Company Lucasfilm, this change of format made perfect sense as it removed the need for principal photography to be digitised before the addition of visual effects. It also enabled writer/director George Lucas to fulfil his dream of a totally digital cinema, when the film was projected in DLP theatres. DLP [Digital Light Processing] technology enables projection systems to create a purely digital connection between a digital video or graphic source and the screen in front of you. The technology has allowed films like *Attack of The Clones* to be jam packed with detail without the detail being lost at the point of projection in the cinema environment.

The task of creating and orchestrating the sounds for this extravaganza fell once again to a team led by four-times Academy Award winner Ben Burtt, sound designer of the original *Star Wars* trilogy. Working alongside Ben, as Co-Supervising Sound Editor, was Matthew Wood who joined Lucasfilm's games division at age 17 and later worked on *The Young Indiana Jones Chronicles* – a testing ground for many of the production techniques employed in the new generation of *Star Wars* films. Ahead of the imminent release of *Attack of the Clones*

on DVD, Ben and Matthew made time to speak to AudioTechnology and discuss their approach to sound design and how their work has been affected by recent technological change.

## Pushing the Envelope

**Richard Clews:** *Matthew, did the move from 35mm film to High Definition video make you think more carefully about the quality of the digital audio you were providing?*

**Matthew Wood:** "Well, we figured that if we were going to shoot with digital video, why not use 24-bit sound for every element of the film? All the ADR [Automatic Dialogue Replacement] was recorded 24-bit on ProTools, the dialogue was done on a Zaxcom Deva 2 [location recorder] and the music was recorded directly into ProTools. This use of technology flows directly from George's work ethic of pushing things further and not getting complacent with technology."

**RC:** *And will viewers of the DVD notice those extra bits?*

**MW:** "They'll notice an improvement because nothing touched 'air', nothing went to analogue for either sound or visuals. I think going to 24-bit resolution was a great technical achievement for the film but whether or not it dramatically impacts the movie, I don't know. For example, sometimes I go to a movie theatre and notice the left surround channel is blown out and I fixate on it the whole time I'm in there – there goes one sixth of somebody's work! But then I'll talk to someone else and they didn't even notice it."

## Bizarre Sounds

**RC:** *The initial shoot took place at Sydney's Fox Studios. Did your time in Australia provide you with any new sound effects material?*

**MW:** "Well, Ben had been living in Australia for a while, so he knew of quite a few locations where I could go to record sound effects. I went all the way from Northern Queensland down to Melbourne. I went on an eco-tour in the rainforest near Cairns and recorded some bizarre insect sounds, as well as flying foxes that ended up combined with the calls of Phillip Island fairy penguins for the sound of the Geonosians. I also recorded a dingo, and a variety of industrial sounds at a number of local sugar mills."

**RC:** *The sequence involving the Geonosians in the droid factory has tremendous impact. Can you tell me more about how that scene came together audio-wise?*

**MW:** "I was supplied with an amazing sequence in animatics that showed the magnitude of the scene as well as what the machines were going to look like. So I visited a plant here in Oakland, California, called Simpson Strong-Tie and recorded a 60-ton industrial press. Then Ben had his take on it, adding a Roland V-Drum kit to create rhythmic synth sounds, which complemented the organic sounds from the Simpson heavy machinery."

## Reel Six, Real Demanding

At the end of the chase in the aforementioned droid factory, the heroes are captured and led out to an arena, where they are pitted against three fearsome monsters. So begins the dreaded 'Reel Six', the most demanding section of the film.

**RC:** *There's an awesome amount of action that went on in that final reel. How did you tackle it?*

**Matthew Wood:** "We actually ignored that reel for quite some time because it was just so massive. Reel Six had the arena fight, the Clone War, lightsabers, battle droids and was chock full of every possible creature imaginable. Chris Scarabosio, who is credited as 'Sound Fu' because of his super-fast editing, came in and focused on vehicles and lightsabers, working with our other editors Teresa Eckton and Bruce Lacey. They all did a fantastic job of dealing with so many elements. That 20 minutes was like a movie in itself."

**RC:** *And how about the arena scene, how did you go about engineering that*

*cauldron-like atmosphere?*

**MW:** "Actually, the one thing that gave life to the arena scene and tied it all together was something that we added on the last day. It was the sound of a horn and a drum beat in the background, which made it seem much more like the spectators were there watching the event. Ben put that in on the last day and everyone loved it."

**RC:** *Which leads me to ask you, Ben, how is the whole process of adding sound effect initiated? I imagine it's not always from a flash of inspiration like that example.*

**Ben Burt:** "No. It's generally far more calculated than that. I make a sound effect in ProTools, give it a name and number, classify it, put it in the library and add comments. Then I send a ProTools session to the assistant to work on. Sometimes I'll give the assis-



**Sound Designer,  
Ben Burt**

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tants a lot of leeway. I might ask them to put together a battle and provide a list of 20 explosions to pick from. Or, I'll instruct them on which sound to use for which moment, if I feel strongly about something."

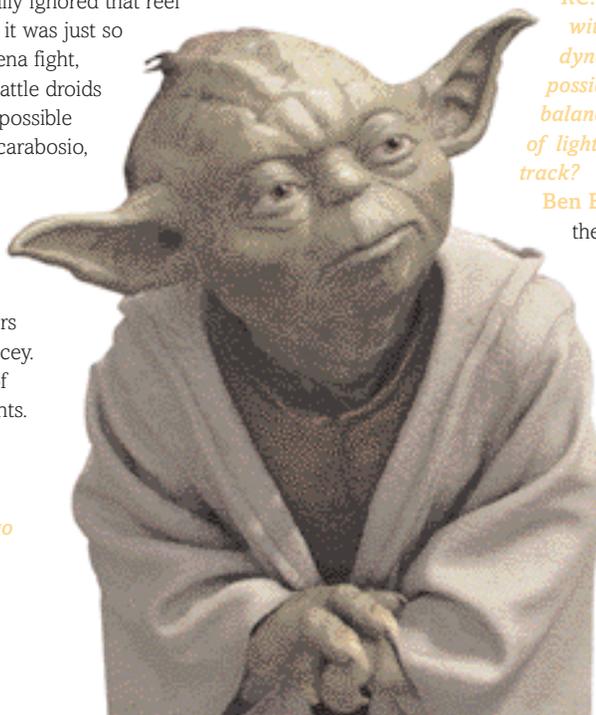
## Finding The Right Balance

As mentioned, the arena scene kicked off a frenetic marathon: a virtually non-stop action sequence that encompassed

the Jedi Knights facing hundreds of droid soldiers and gigantic monsters, and the first battle of the Clone Wars.

**RC:** *When you're working with such a collection of dynamic sequences how is it possible to maintain a balance and inject some sort of light and shade in the audio track?*

**Ben Burt:** "Once you get into the last reel of a *Star Wars* movie it's difficult to remove the music or sound effects because you've got at least 25 minutes of non-stop action. The trick is to try and break the scenes up with moments of quietness without losing the tension. We



haven't been as successful at it as we could be, but we're always trying."

**RC:** *Meanwhile in those hard-hitting sequences, John Williams' music also somehow maintains a significant presence in the mix. Is that a difficult balance to draw?*

**Ben Burt:** "I work very hard to orchestrate the mix such that the music and the sound effects complement one another. For example, the sound effects might be occupying the high frequencies when the music is in the low register, or be sustained when music is rhythmic. There's only so much space in the soundtrack within which the music and sound effects can co-exist – there has to be careful thought given to how they relate to one another."

**RC:** *Another scene I'd like to ask you about involves Anakin Skywalker and Obi-Wan Kenobi chasing the bounty hunter Zam Wesell into a crowded bar. It's not the most obvious environment to inject tension but the soundtrack gives it a good amount of suspense.*

**Ben Burt:** "Well, originally I had a lot of cacophony in there – people playing games and laughing, drinks and glasses clinking. Plus I had an off-screen band playing. That was just too much, because the scene was about the stealth of Zam the bounty hunter. For the music to be effective it needed to use sustained, unresolved tones. Consequently, the only way you could hear that music was to artificially bring everything else down. Left as a noisy scene, you weren't drawn into the belief that there was a danger that Anakin or Obi-Wan was about to be shot."

### Synclavier Finally Pensioned

Attack of the Clones was the first major Lucasfilm Production in which ProTools replaced the NED Synclavier for sound design. Plug-ins such as Wave Mechanics' Pure Pitch and Pitch Blender were used extensively, as was Symbolic Sound's Kyma. The latter's vowel synthesis can be heard in the dialogue of Wat Tambor – the Techno Union robot who has no control over his own voice. Sounds from the hard disk library of 5,000 *Star Wars* effects were manipulated in Digidesign's Sample Cell and

BitHeadz' Unity software samplers. The job of choosing all these tools fell to Matthew Wood.

**Ben Burt:** "I rely very heavily on Matthew. I call him my 'Digital Architect', because he's very up on current hardware and software. I'm not as interested in the technology; I'm more interested in having tools that are efficient – I've never had the latest equipment!"

The results of the sound design team's work were committed to the final soundtrack in the Mix A Room at Skywalker Sound. Behind the Neve DFC desk, Gary Rydstrom mixed effects, Michael Semanick balanced the dialogue and ADR, while Rick Kline handled John Williams' music tracks. Some of the busiest sections of the film, including the arena battle, used up to 70 tracks.

**RC:** *Looking back on the whole process, do you think Lucasfilm's decision to film in Australia was a wise one?*

**Matthew Wood:** "It was great to work with a really enthusiastic group of people, and they were happy to have us there. Coming off the recent shooting of *The Matrix* and *Moulin Rouge*, there was a really good atmosphere."

**Ben Burt:** "It was one big family behind one big wall, which was an experience I'd never had before."

And in just a few months' time, they will be doing it all over again.



**Sound Editor,  
Matt Wood**