



SONY PICTURES CLASSICS

## Drumming Up Sound Innovations at Technicolor

Technicolor Sound Helps Director Damien Chazelle Build a Complex Audio Track in Just Six Weeks to Make His Sundance Deadline and Launch *Whiplash's* Award-Winning Journey

### Customer

Sony Pictures Classics

### Challenges

They got involved immediately during production and went to the actual rooms where the drumming scenes were being shot and recorded impulse responses of the acoustical patterns.

### Solution

With the schedule so radically compressed, Wilkins and Mann met with the entire production sound team just a couple weeks before principal photography was scheduled to start to anticipate problems and brainstorm solutions at the outset.



“The impulse response technique is quite interesting,” Wilkins explains. “Our team played back a set of specialized tones into the space (on location), and then recorded them. Later decoding the tones gives you the exact naturally occurring reverb of the room.” We researched with the picture department and got still photos of where the cameras were situated, and set up our recording equipment in similar fashion to capture reverb from the same perspective. That meant that, later on, we could use those reverbs to re-create echoes and reverbs inside those rooms, and apply them to the (pre-recorded drum music), so that everything could match up perfectly.

Ben Wilkins  
Co-Supervising Sound Editor and Re-Recording Mixer





Feature film director Damien Chazelle was keenly aware that he had no room for error, miscalculation, delays, or technical snafus when, against great odds, he finally found financing in 2013 to launch the music-based drama that he had conceived and written, *Whiplash*, into production. His goal was to finish the movie in time to have it open the 2014 Sundance Film Festival. If Chazelle could somehow succeed in that mission, despite a challenging budget and an unusually compressed timeline by the time the movie launched into production, Sundance would offer him genuine hope at earning worldwide theatrical distribution.

In a rarely seen set of circumstances, the first incarnation of *Whiplash*, in the form of an 18-minute short film strategically produced by Chazelle a year earlier (as a sample of sorts to find financing for a full-length feature), gained prominence at Sundance 2013 when it won the short film Jury Award in the fiction category. Now, having achieved that first goal of funding, he was entering the second phase of his strategy—literally a second bite at the Sundance apple.

Remarkably, Chazelle’s tale of a young jazz drummer, Andrew Neyman (played by Miles Teller), so obsessed with attaining greatness that he willingly subjects himself to the sadistic training methods of his even more obsessive conductor (J.K. Simmons), not only made the Sundance date, it captured both the Grand Jury and Audience Prize awards at the festival, and found distribution from Sony Pictures Classics. In between the project’s initial manifestation at Sundance 2013 and its big splash at the same event a year later, Chazelle and his producers decided to bring the project to the state-of-the-art Technicolor Post Sound facility at Paramount Studios.

Given that the core of the movie, shot in just 19 days, is about music—specifically, an almost maniacal obsession with jazz drumming—audio craftsmanship would be central to how the story eventually impacted audiences. Yet, in order to meet the 2014 Sundance deadline, the Technicolor team ended up with less than two months to get it done—between Thanksgiving and New Year’s, nonetheless. Chazelle’s post-production supervisor, Tamara Gagarin, had a longstanding relationship with Technicolor, and suggested the company had the best infrastructure, talent, and experience under a single roof to achieve each of Chazelle’s pressing goals—all of which would have to be executed in an unthinkable six weeks with laser-like precision to make the Sundance dream a reality.

Technicolor’s Theatrical Sound division put co-supervising sound editors and re-recording mixers Ben Wilkins and Craig Mann in charge of the team that would collaborate closely with Chazelle. They worked out a methodology by which Wilkins would also perform sound design functions on the project, Technicolor’s Laura Wiest and Eric Flickinger would handle recordist and file management duties, Lauren Hadaway and Joe Schiff would serve as dialogue editors, Judah Getz would handle ADR mixing, Foley would be performed on site by artists Alicia Stevenson and Dawn Lunsford, Evan Rautianinen would work with Wilkins and Mann to engineer impulse response recordings, and the facility’s chief engineer—Mike Novitch—would personally supervise all technical requirements.

With the schedule so radically compressed, Wilkins and Mann met with the entire production sound team just a couple weeks before principal photography was scheduled to start to anticipate problems and brainstorm solutions at the outset.

“We knew what the potential issues were coming from the set, and what the challenges would be right off the bat, schedule wise, budget wise, with what they were trying to pull off,” Craig Mann explains. “So we met just ahead of when they started shooting, with the director, a couple of production producers, the whole production sound team, the music editor, and the dialogue editor, just so we could all sit in one room and make sure there was nothing overlooked, or that we didn’t inadvertently tie our hands with anything. In particular, Damien was concerned about the pre-recorded music sounding organic in the scenes and not canned or as if a CD was being started.”

Indeed, the issue of seamlessly matching pre-recorded drum music to production drum music was among their central challenges. Mann says the final drumming heard in the film is actually “a hybrid of production drumming, pre-recorded drumming, and ADR drumming that we had to put together to make the movie work” in the sense that the musical beats produced by Teller’s character while drumming had to be 100 percent believable sonically and visually—totally synchronized to the visuals of the actor playing drums for the narrative to emotionally impact viewers as Chazelle intended.

To ensure both sonic and visual credibility, Technicolor took an approach that is typical of picture post - they got involved immediately during production and went to the actual rooms where the drumming scenes were being shot and recorded impulse responses of the acoustical patterns.

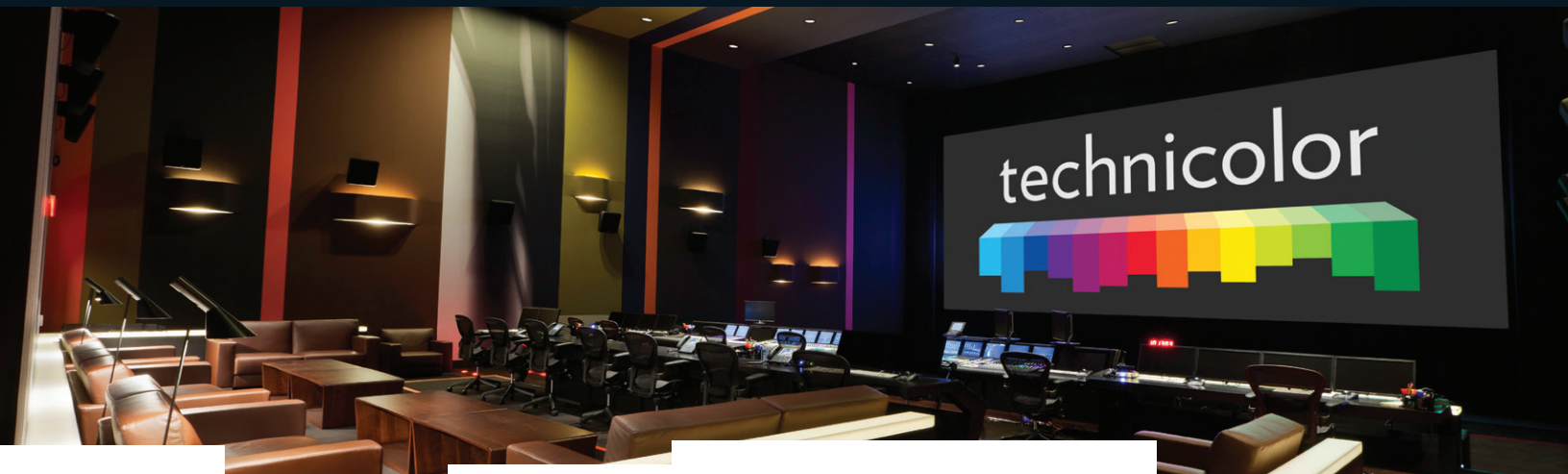
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Chazelle next poured over every drumming section with the Technicolor team in painstaking detail to make sure they caught “anything that wasn’t working between the pre-records and the production recordings, or if anything was missing or didn’t look good.” Mann elaborates. “So we went over everything with him and came up with a list of little things we wanted to address, and went back to the music studio with that list, had a professional drummer look at those sections, and had him drum where needed. That was the third element that we fit in—drum ADR. That was added to the pre-records and production recordings.”

Still more minute elements had to be woven in, such as Foley—a traditional art that Technicolor pushed into areas it had never needed to try before, simply because sounds like drum kits being handled, cymbals being pinched, sticks being dropped, and so forth, are not the kind of work typically done to the extent that was required by this movie. And, of course, there were a wide range of other pre-recorded sound design elements that had to be incorporated into the final mix, particularly an array of other instruments, ranging from horns to bass to piano, and much more. Wilkins estimates the final pre-record package for the movie, in fact, included 10 groups, or stems, of musical instrument categories, ranging across some 60 channels, that were edited into the final 5.1 surround mix in some form or fashion.





The Technicolor team put in endless long days and nights over the 2013 holiday season to handle such detailed work—prepping, recording, and playing back everything on the show through its ProTools platform (v.10, with systems capable of recording or playing back up to 128 channels on three separate stages), doing “some of the most complex music prep we have ever seen,” according to Wilkins, in an astoundingly short amount of time. Then, using Euphonix S5 mixing boards, the company built the 5.1 surround mix and eventually mastered it all under the same roof, coming in just a couple days ahead of the Sundance deadline.

For this kind of job, the company’s ability to seamlessly integrate its design suites, editorial suites, mixing stages, and Foley stage onto a single, secure data network in order to move reams of data from room to room instantly, at any time of the day or night, proved critical to the project’s success. Most of the time, *Whiplash* moved between three different stages at the facility and, quite literally, nothing was lost in translation along the way. Furthermore, Technicolor’s ability to show filmmakers a pristine, synchronized, 2k projected image in each of the suites, due to Technicolor’s renowned color science and high-end projection technology (NEC 2500 2k projectors are installed on each of the three main stages), allowed filmmakers to view the same movie they had color-timed as they intended it to be seen, in order to better judge how well the drumming and other sound elements synchronized to the picture, and what the emotional impact of united sound and picture might be.

“Some sound facilities might tell you they are just a sound facility, not a picture facility, and that picture should not be judged in a room meant for sound,” says Jeff Eisner, head of Technicolor Theatrical Sound Services. “But in our facility, you can judge on both levels. If Damien had just left the digital intermediate suite, and wanted to see the same thing he saw there, he could do that, while working on the sound here, and not have to settle for an inferior one-light picture he had to work with before the movie was properly color timed. Another unique thing about how we set things up here is that we have an Avid Nitris video playback system on every one of the stages, so if there are picture changes coming through, you can literally pull a picture change from the picture editorial team—the cutting room—and have it up on our sound stage in moments.”

Ultimately, Technicolor’s service and support obviously helped Chazelle achieve his goals for *Whiplash*, but at the same time, the Technicolor team is quick to point out the experience benefitted Technicolor, as well. That’s because, as Eisner notes, “...we got to build a relationship with an exciting up-and-coming director in Damien whom we really hope we get to work with again in the future. What we did was solve problems that allowed him to focus on what he had to do, while making sure his team’s efforts could be recorded, edited, mixed, and played back to maximum effect. *Whiplash* illustrates how we managed to get that done, and we are all very proud of the result.”

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