CONGRATULATIONS
To all the winners of the 2014 CAS Awards

And thanks to CAS for 50 great years.

Trew Audio
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Cover: Gravity
Inset: Chris Navarro, CAS and Chris Munro, CAS
The President’s Letter

Welcome to our spring edition! Inside, you will find articles of interest to the sound community written by our members, as well as contributions from our corporate sponsors which we hope you will find interesting and informative. Your publication has grown a lot these last few years, with the help of a very dedicated staff. Please take a moment to check out who they are in these pages. Thank you!

I’d like to take a moment to thank Peter Damski, CAS. Pete has guided the CAS Quarterly for many years, and helped it to become the professional, informative, and classy magazine it is today. Pete is stepping down now, although he still remains our CAS Treasurer … also a time-consuming and important job for us. Thank you Peter, for all your years of service to the CAS!

Stepping in to the position is Karol Urban, CAS. I am so grateful to have Karol on board with us. She is already making her mark, guiding the staff and the magazine. Welcome aboard Karol!

In this, my last year as your CAS President, I have had some time to look back at the last three years with a sense of pride. The theme of “giving back to the sound community” is in full gear. The CAS continues on the path of growth, collaboration, and value for the membership. We just wrapped up our 50th Awards in February, and I am so proud of all those who helped to make it a success. It was a milestone event, honoring our Past Presidents, as well as our nominees and honorees, and their fine work. As we are preparing for our 51st CAS Awards next February, there is always more to do, and ideas to investigate. So we are taking a very measured and controlled course while expanding and honoring those who mix sound. I am very excited to see these and many other positive changes happening as the CAS grows. Please know that, as a member, you may also get involved with our work in these areas.

Now, we look forward to another year of events, seminars, and continuing the mission of the Cinema Audio Society. I have laid out our goals for the year to our newly elected Board of Directors, and we are now actively working to set in motion several ideas and concepts designed to expand the reach of the CAS. As always, we look to further our mission: to advance the art and craft of sound mixing. Our website CinemaAudioSociety.org is now the HUB of our organization, and is the platform for all of our events and news. The site is also evolving now to provide members with our 2013 CAS Membership Directory, as well as personal log-in privileges. This will facilitate information and contact updating, easier dues payments, contacting other members, as well as online forums for discussion, and much more. We are also present now on several social media sites. Many of your Board members have worked long hours to refine and fine-tune these sites, and it is an ongoing project. I commend all who have given their time and energy to making it work so beautifully. Keep checking on the site for new changes!

Now that we are starting a new term for many Board members, I have begun forming the committees which actually do the work of the CAS. These committees will be hard at work behind the scenes with seminars, student participation, streamlining, and strengthening our financial framework, as well refining and enhancing the CAS Awards. I am looking forward to presenting more seminars, and of course, our annual CAS picnic in July. We will also be partnering with our sister guilds and organizations, such as the MPSE (our partners in sound), to make our events even stronger, unite the sound community, and bring topics of interest to the entire membership. Plus, in the coming months, we will be making an exciting announcement regarding our student membership. Please remember to check the website and your email inbox to keep track of our upcoming events.

Another continuing goal of ours is to reach out to our national AND international sound community. We are constantly looking for ways to include our ‘out of town’ members, and use the available technology to close the gap of distance, and involve more of our membership in our events.

On the website, you will find our 50th Awards Photo Coverage and event information which outlines upcoming events.

In closing … I’d like to say “THANK YOU” to your CAS Board of Directors for all their hard work. We are seeing record numbers of people willing to participate on the Board, which means we are thriving and growing, and not remaining stagnant. We are also recruiting members to partner with Board members on many of our committees, so that we can offer full participation and representation to the membership. This will enable us to provide more value, representation, and activities to enjoy as a CAS member. If you would like to get more involved, just let us know, you will be welcomed. I encourage all of our members to participate in our activities; to pass along ideas to us, give us feedback, and help us reach as many interested professionals around the world as possible. The Board is here to serve you, the membership, to ensure our growth, and to secure our future. The CAS has a wonderful pedigree of talent and abilities, and I am delighted to be able to help facilitate a new and collaborative chapter in the distinguished history of the CAS. Enjoy the spring!

All the best,

David E. Fluhr, CAS
President of the Cinema Audio Society

CINEMA AUDIO SOCIETY MISSION STATEMENT

To educate and inform the general public and the motion picture and television industry that effective sound is achieved by a creative, artistic and technical blending of diverse sound elements. To provide the motion picture and television industry with a progressive society of master craftsmen specialized in the art of creative cinematic sound recording. To advance the specialized field of cinematic sound recording by exchange of ideas, methods, and information. To advance the art of auditory appreciation, and to philanthropically support those causes dedicated to the sense of hearing. To institute and maintain high standards of conduct and craftsmanship among our members. To aid the motion picture and television industry in the selection and training of qualified personnel in the unique field of cinematic sound recording. To achieve for our members deserved recognition as major contributors to the field of motion picture and television entertainment.

CAS SPRING 2014 NEW MEMBERS

Active
Shaun Cunningham, CAS
Malcolm Davies, CAS
Fernando Delgado, CAS
Chris Goodes, CAS
George Lara, CAS
Richard Mercado, CAS
Bill Trousdale, CAS

Associate
Bryan Cahill

Student
Sandy Bonilla
Kyle Dagenhart
Cynthia Harris
Mohit Kakkar
Carl Kotheimer
Mehrnaz Mahabati
It’s here! Our Spring, “Meet the Winners” issue. Read about the production, ADR, Foley, scoring and re-recording mixers who brought home awards at the 50th CAS Awards Ceremony. New for this year, we’ve included interviews with our Technical Achievement Award recipients—so you can become a little more familiar with the folks who bring us the technology that makes our jobs a little easier. In addition to our winners’ interviews, we have a look into the sound workflow for animation, courtesy of April Tucker, CAS. As always, you’ll find submissions from your fellow members in the “Been There Done That” section and view their “Lighter Side” photo submissions—in actual print!

The CAS Quarterly is produced as a service to our members on a voluntary basis. We appreciate, and encourage, your feedback and suggestions—so send them in! Email us at CASQuarterly@CinemaAudioSociety.org. Also, don’t forget that our sponsors are professionals like you who understand the business and needs of our industry. We encourage your commitment to them.

Finally, your co-editors would like to thank this issue’s contributing writers who helped us conduct the “Meet the Winners” interviews: Bob Bronow, Devendra Cleary, Shaun Cunningham, G. John Garrett, Paul Graff, and April Tucker.

Correction: The CAS mistakenly omitted Devendra Cleary from our membership list in the 50th Annual CAS Awards Program Book and would like to extend our apologies. Devendra is a current active member in our organization and a contributing writer for the CAS Quarterly.

Past Presidents and 2014 Board of Directors
Front row from left: Melissa Hofmann, Karol Urban, Mark Ulano, Sherry Klein, Deb Adair, Lisa Piñero, Lee Orloff, David Bondelevitch, Edward L. Moskowitz, Robert Deschaine, Michael Minkler, Edwin Sommers.

Back row from left: James Corbett, Jeff Wexler, Bob Bronow, David Fluhr, Bob Beemer, Tomlinson Holman, John Coffey, Glen Trew, Gary Bourgeois, Peter Devlin, Steve Hawk.

Missing Board members & alternates: Edward J. Greene, Gary A. Rizzo, Peter Damski, Walter Murch.
After 10 years of steering the CAS Quarterly ship, Peter Damski has hung up his editorial hat, with the winter edition having been his last. In addition to keeping all of the contributors on track, writing articles, and making sure the contents were in order, Peter was instrumental in transitioning the magazine to its present, full-color splendor.

Having been Peter’s co-editor since 2007, I can say that, while preparing each issue can be quite demanding, receiving a positive comment from a member or the Board about an article or feature always brought with it a sense of pride. Peter’s years of work on the Quarterly, and continuing work as a member of the Board of Directors (this term as Treasurer), shows a dedication to our organization that is difficult to overstate.

On behalf of the Board of Directors, and myself, thanks for all of your work, Pete!

Matt Foglia, CAS
Brings Us Together Again

Cinema Audio Society Awards
The 50th year of the Cinema Audio Society brought another round of awards, recognizing excellence in sound mixing among our already excellent peers and colleagues. Although this is the 50th year of the Society, we’ve only been throwing an awards ceremony for 20 years, but I’m glad we do, for a few reasons.

First, nobody understands the challenges of creating great sound more than those who do it. And that’s one of the reasons for the Society’s existence, to educate others on how excellence in sound is achieved, and how they can help that process.

It’s important to be recognized for good work, especially in a craft where so many others have no idea that we just don’t have a filter for that highway noise, or that a mic on the camera isn’t how the sound for the show wins awards.

It’s also important to get together just to meet, say “Hello,” swap stories, vent, and talk about sound! We are our own little islands in production, looking across the water and waving at the other sound islands, because we so rarely get to work together as more than a group of a few.

So, on February 22, we gathered again at the lovely Crystal Ballroom in the Millennium Biltmore Hotel in Los Angeles for an enthusiastic presentation and reception of awards among colleagues which recognizes excellence in our intangible, yet crucial, craft.

Emcee Doug McIntyre of McIntyre in the Morning on KABC 790 Los Angeles led the charge.

Presenters included Jim Corbett, CAS and Bethany Joy Lenz for Television Movie or Mini-Series; Lisa Piñero, CAS and Phillip Palmer, CAS for Production and Post Production Technical Achievement Awards; Gary Bourgeois, CAS and Penny Peyser for Sound Mixing for Television Series – One Hour; Ed Sommers, CAS and Steve Hawk, CAS for Sound Mixing for Television Non-Fiction, Variety or Music – Series or Specials; Ed Moskowitz, CAS and Robert Deschaine, CAS presented for Television Series Half-Hour; Melissa Hofmann, CAS and Richard Grieco for Motion Pictures – Animated; and Michael Minkler, CAS and Michael O’Neill for Motion Pictures – Live Action.

David Gray did a great job with the CAS tribute to the life and work of Ray Dolby. While Anna Behlmer and Jeff Wexler presented the CAS Filmmaker Award to Mr. Edward Zwick.

Finally, this year’s Career Achievement Award, going to Mr. Andy Nelson, was presented by Ted Galliano, David Fluhr, CAS, and Sir John Williams.

All this, sandwiched between a lively cocktail reception and after-party next door, and I can report with every assurance that the evening was quite memorable.

CAS Award Winners for 2013

50TH CAS AWARDS
FOR OUTSTANDING ACHIEVEMENT IN SOUND MIXING

MOTION PICTURES – LIVE ACTION
Gravity
Production Mixer Chris Munro, CAS
Re-recording Mixer Skip Lievysay, CAS
Re-recording Mixer Niv Adiri
Re-recording Mixer Christopher Benstead
Scoring Mixer Gareth Cousins
ADR Mixer Thomas J. O'Connell
Foley Mixer Adam Fil Mendez

MOTION PICTURES – ANIMATED
Frozen
Original Dialogue Mixer Gabriel Guy
Re-recording Mixer David E. Fluhr, CAS
Re-recording Mixer Gabriel Guy
Scoring Mixer Casey Stone
Foley Mixer Mary Jo Lang

TELEVISION MOVIE OR MINI-SERIES
Behind the Candelabra
Production Mixer Dennis Towns
Re-recording Mixer Larry Blake
Scoring Mixer Thomas Vicari
Foley Mixer Scott Curtis

TELEVISION SERIES – ONE HOUR
Game of Thrones
“The Rains of Castamere”
Production Mixer Ronan Hill, CAS
Production Mixer Richard Dyer
Re-recording Mixer Onnalee Blank, CAS
Re-recording Mixer Mathew Waters, CAS
Foley Mixer Brett Voss

TELEVISION SERIES – HALF-HOUR
Modern Family “Goodnight Gracie”
Production Mixer Stephen A. Tibbo, CAS
Re-recording Mixer Dean Okrand
Re-recording Mixer Brian Harman, CAS

TELEVISION NON-FICTION, VARIETY OR MUSIC – SERIES OR SPECIALS
History of the Eagles: Part One
Re-recording Mixer Tom Fleischman, CAS
Re-recording Mixer Elliot Scheiner

10TH ANNUAL CINEMA AUDIO SOCIETY TECHNICAL ACHIEVEMENT AWARDS

PRODUCTION
Sound Devices, LLC
633 Mixer/Recorder

POST PRODUCTION
iZotope
RX 3 Advanced
CAS Filmmaker Award recipient Edward Zwick. (Photo: ©Ana Gilbert)

CAS Career Achievement Award recipient Andy Nelson (right) with John Williams. (Photo: ©Ana Gilbert)
**Motion Pictures – Live Action**

**GRAVITY**

by Shaun Cunningham, CAS

This year’s recipient of the Outstanding Achievement in Sound Mixing for a Motion Picture – Live Action, *Gravity*, told the story of a woman’s journey through space. This presented a unique challenge since, in fact, sound waves as we know them and spend our lives working with, simply don’t exist in the vacuum of space.

The award-winning team consisted of production mixer Chris Munro, CAS, re-recording mixers Skip Lievsay, CAS, Niv Adiri, and Christopher Benstead, scoring mixer Gareth Cousins, ADR mixers Chris Navarro, CAS and Thomas J. O’Connell, and Foley mixer Adam Fil Mendez. This is Lievsay’s fifth CAS Awards nomination and third win (alongside *No Country for Old Men* and *True Grit*). Their work on *Gravity* earned Niv Adiri, as well as Gareth Cousins, Christopher Benstead, Thomas J. O’Connell, and Adam Fil Mendez, their first CAS Award nomination and win. This is Chris Navarro’s second CAS nomination and first win.

*Gravity* also earned the Academy Award for Best Achievement in Sound Mixing for Lievsay, Adiri, Benstead, and Munro, as well as the BAFTA Award.

**The concept of creating sounds for space**

There is no sound in space; this is a fact that is known by everyone that has taken middle school science. So how do you create a compelling soundtrack for a movie that takes place in a vacuum? You start with the story, and the story of *Gravity* is all about Dr. Ryan Stone’s journey. Director Alfonso Cuarón really understood how much the right sound could tell this story. From the first frame to the last, it’s all about Sandra Bullock’s character, so it was decided early on to tell the sound story through her perspective. What she touches on the space walk and hears, we hear through the air in her spacesuit as she would hear it.

This choice meant a very distinctive approach was needed to create the Foley and FX in order to sound as she would hear them. Foley mixer Adam Fil Mendez recalls, “We did a lot of work with contact mics, placing them on the suits, on the helmets and on all manner of metallic objects. For example, for the carabiner that Kowalski clips onto Dr. Stone’s suit, we had a contact mic close to the point of attachment, a different contact on the suit, a miniature omni inside the suit and a ribbon mic slightly off axis—all going down to separate tracks.” Mendez also explained that sound designer Glenn Freemantle “told us about the things that Sound24 had already recorded prior to the Foley shoot. It sounded like he and the team had done a LOT of research! He and Niv Adiri gave us a full brief on the types of sounds they wanted us to capture. One thing I do remember Glenn explaining was that every tool used by the NASA team is built to purpose. So, if a bolt needs loosening, there is a powered wrench that will fit that bolt perfectly and apply just the right amount of torque. For us, that meant that whenever Dr. Stone fits a tool onto something, it had to connect with a clean, distinct sound with no creaking or scraping.

Every thing had to sound totally efficient and ergonomic in design—which is the ethos that those NASA scientists have been working to for years.” Lastly, Mendez remarked, “We had the NASA and the Russian suits on the stage, which was a real joy. Apparently, the NASA suit was the genuine article and had been in space!”

Niv Adiri had 3–4 layers of spacesuit movement and touches specific to each character. That allowed him the flexibility on the mix stage to use layers of saturated elements to create the sounds inside the suits. The saturation gave the muffled elements detail and character, keeping it from sounding dull and boring, as would be the case if there were just a low pass filter on everything.

Since space is silent, the sound team had to make the soundtrack feel silent. Skip Lievsay recalls that they actually needed some sound to make it feel silent “in order for you to know there’s no sound, you have to have other stuff such as dialogue, etc.”

Capturing the dialogue was as much a challenge as creating the sound design. Chris Munro recalls, “The mics that you see in vision were made by us. We used DaCappo lavaliere heads and made the tubes, which were foam filled for isolation. We also molded silicon rubber caps to go over the mic to alleviate breaths on the mic. This also made them less sensitive to sound from outside the helmets. The mics were mounted on the caps that are worn inside the helmet, known to us as “Snoopys.”” However, those Snoopys were not just important visual pieces. Munro explains that, “they also contained earpieces for communication,” which provided a way to overcome one of the most difficult challenges Munro faced on set. “Communications were an important part of sound dept. responsibility. The actors needed to be able to hear each other, but they also needed to hear themselves. The director and 1st AD needed to communicate with the actors and everyone needed to hear the dialogue.

“When Sandra was not wearing a Snoopy, the scene was usually on boom. When she was interacting over radio, the headset that she wore was made practical. Though you see cables attached to the headset, these were actual CG elements because, visually, we...
much of the time was spent on the music elements, too. At
were the dialogue and effects placed with such precision, “but
when they were off camera. Chris Benstead recalls that, not only
knew where each character was supposed to be in the mix field
really feel as if they are present in the film.

extreme use of the whole surround field, for the viewer to
ence, for dialogue to not be tethered to the center channel, for
sound? This idea opened up the sound field for a new experi-
ent from what we consider normal, so why not the same for the
Earth in zero gravity is one in which the physics are differ-
come to life on the mix stage. The setting of floating high above

Multiple layers of Foley specific to each character allowed
Lievsay the ability to control the intimacy and presence of each
character during the final dub.

Letting go of traditional mixing practices
Multiple layers of Foley specific to each character allowed
Lievsay, Adiri, and Benstead the ability to make Cuaron’s vision
come to life on the mix stage. The setting of floating high above
the Earth in zero gravity is one in which the physics are differ-
ent from what we consider normal, so why not the same for the
sound? This idea opened up the sound field for a new experi-
ence, for dialogue to not be tethered to the center channel, for
extreme use of the whole surround field, for the viewer to
really feel as if they are present in the film.

Everything is constantly moving through the mix field with
the main characters. The only anchor was Earth. Cuaron always
knew where each character was supposed to be in the mix field
when they were off camera. Chris Benstead recalls that, not only
were the dialogue and effects placed with such precision, “but
much of the time was spent on the music elements, too. At
times, the whole music folds down into mono and back out into
7.1 (for example, as Ryan Stone first spins off into the abyss),
whilst at other times, many musical elements are moving inde-
pendently and are themselves untethered from the standard 5.1
role they would assume.”

This film breaks the traditional mold of theatrical mixing.
To Lievsay, you have to be patient and generous with what’s
happening and not get cornered by traditional ideas. He believes
that, once you let your guard down and become vulnerable, you
can let things rise to their own greatness; to pursue every idea
because everything is worth trying at least once.

The whole mix team was happy to abandon conventional
methods and, according to Benstead, it was, “Very liberating! It
was such fun to make use of the full potential of the surround
environment. We took dialogue panning to a real extreme, and
worked extremely hard to make the music track interact with
these moments as effectively as possible.” The dialogue panning
was followed completely by the Foley panning; where their
voices went, their Foley tracks followed. This mixing style was
a pleasure for the mix team and it suited the film. They weren’t
concerned about the sound elements moving around and mak-
ing people feel uncomfortable. In fact, that was what they were
striving for in certain sections. They wanted the audience to
experience what Dr. Stone was experiencing. Adiri believes that,
“if you have the concept, and you sell it pretty early to the audi-
dence, and it’s something that makes sense with the visuals,
people will understand it and get into it. So we had to make sure
that we were going to do it properly, that we do it 100% and we
do it from the first moment to the last moment.” He adds,
“Things always sound better if they look good!”

“Alfonso was living in the house of contrast,” explains
Lievsay. The soundtrack went from extremely loud to extreme-
ly quiet to suck the viewer in. Everything was upside down and
as radical as it could be and Atmos was the perfect format to
create this exceptional soundtrack. Adiri recalls that, from the
very beginning, they knew they wanted to make an Atmos mix,
even before the Atmos system was completed. So, they mixed it
in 7.1 originally, and then remixed into Atmos at Warner Bros.
Burbank when Atmos was ready.

Chris Benstead recalls, “It was an amazing experience and a
real joy to work on Gravity, especially working closely on the
music mixing with Alfonso at the final. In his desire to create a
super-immersive soundtrack, his mantra was always, ‘Let’s make
this sound as least like traditional “enhanced” stereo as possi-
ble,’ which was certainly my experience of most music in movies,
too. So the fact that ‘it sounds like mono Chris!’ became a
repeated catch phrase from our director meant that I was con-
stantly seeking ways to create even greater spatial detail and
interest in the 7.1 (and later Atmos) environment.”
Motion Pictures – Animated

FROZEN

by April Tucker, CAS

In early March 2014, Frozen became the highest grossing animated film of all time. While Disney’s animated films can take 3–5 years to produce, Frozen managed to accomplish the task in less than two. The film won this year’s Academy Award for Best Animated Feature (a first for Walt Disney Animation Studios [WDAS]), as well as for Best Original Song, “Let It Go.”

The mixer who tracked most of the “production” dialogue for Frozen was Gabriel Guy of Walt Disney Animation Studios. In addition to his recording duties, he was re-recording mixer for WDAS’s internal screenings of the film, and later was the FX re-recording mixer with CAS President David Fluhr (dialogue & music re-recording mixer) at Disney’s Stage A. Mary Jo Lang was the Foley mixer at Warner Bros. Foley Stage in Burbank. Scoring mixer Casey Stone was also at Warner Bros. in Burbank (for the scoring sessions) and mixed the score at composer Christophe Beck’s studio in Santa Monica, Calif.

Mary Jo Lang: Foley Mixer

What was the schedule like for Frozen? How early (or late) in the animation process were you involved?

We are normally involved after most of the animation is complete. We have received animated films with pencil tests or even storyboards. In those cases, we have to rely on the supervisor for information on surfaces and other details. There are usually days at the end of the schedule where we pick up those scenes.

Were you working with real ice at all, and if so, how much was brought in?

We brought in 50 lbs. of snow ice from Union Ice daily. It was essential to get an authentic sound of the snow for this film and, as most of the scenes are in snow, we dealt with it every day.

What were other challenges that came up in Foley?

The character of Olaf, the snowman, had several layers of sound—his body movement, his twig arms movement, his exaggerated funny business. He also had a “squeak” sound to his movement to add to his cuteness.

How long have you been at Warner Bros., and how long have you been working with your Foley artists (Alyson Dee Moore and John Roesch)?

I have been at Warner Bros. for 22 years this May. John and I had been working together before the move to Warner Bros., and Alyson joined us about 15 years ago. We’ve been together for quite a while!

I imagine you three have quite the routine. What keeps things interesting or challenging for you?

The most interesting and fun thing about this job is always the client. We have regular people we work with and it is a joy to be a part of their team. I always say I’d rather work on a not-so-good film with great people than a great film with not-so-good people. We work so closely together under tight schedules that personalities play a huge part in the pleasure of doing a good job.

There’s a D-Command in the photos of your stage at WB. How are you using it?

I do work on a D-Command! It has been modified to be used for Foley with an automation program that makes the process run quickly and smoothly, most of the time. (We are dealing with computers, after all!) I record on Pro Tools but use no console automation. Most of Foley is recorded mono, through the center channel, because it is the detail we are aiming for. I have used plug-ins occasionally, but I prefer to hear the final sound as I record it. I use EQ and mic placement a lot and, since I work with the best Foley artists in the business, my job is made much easier.
Is the room LCR?
The room is three-channel (LCR) with a subwoofer. I rarely use the L and R speakers unless the client has a special request.

Where are you from originally, and how did you get into sound?
I was born in Los Angeles! I worked at Disneyland in the Wardrobe Department while in college and left there in 1984 to do the Olympics. I met a sound crew while working wardrobe on a low-budget movie who took me on to train me in production sound. One of the women I worked with on the Olympics was married to a Foley mixer, who got me into the job I have now. I still sew occasionally, but I’m a rabid knitter and crocheter these days. Much more portable!

Do you teach?
I lecture four times a year at Riverside Community College and also judge their film festivals twice a year. It’s amazing how sophisticated the student films are these days with all the new technologies available. The department there is quite good and it is a pleasure to meet all the enthusiastic filmmakers.

Anything else you’d like to add?
The engineers at Warner Bros. are fantastic! They keep me going through all sorts of challenges and I owe them a lot.

What’s next?
I’m off to New Zealand! I LOVE to travel and have been to more than 35 countries so far. It is a passion of mine that Warner Bros. is kind enough to indulge.

Casey Stone: Scoring Mixer

How were you brought in to work on Frozen, and what was the schedule like?
Christophe Beck, who wrote the score for Frozen, normally calls me as his preferred scoring mixer, and we’ve been working together for more than 15 years now! So, there was a general assumption I would be recording and mixing the score, but there were two unusual events that preceded Frozen. One was that Christophe scored a lovely short by Walt Disney Animation Studios (WDAS) which played before Wreck It Ralph called Paperman. This was Christophe’s first time working with WDAS and it was mine also. I guess we both passed the test since Christophe got the Frozen gig! We also scored a 90-second teaser trailer for Frozen a few months before we scored the film.

How much time did you have at the scoring stage, and to mix?
We had a setup day, then scored for four days with orchestra plus another short day with choir. The mix took seven days. There was a solo vocalist recorded in multiple sessions over a longer time period at Christophe’s studio, and the opening choir piece was recorded in Norway.

Were you involved with the song recording as well?
I only worked on the score. David Boucher was the engineer/mixer for the film’s songs. David and I aligned some of our setup for continuity, such as using Neumann M50s in a Decca Tree for the main array.

Where was the score recorded? What was the technical setup?
The score was recorded at Warner Bros. Eastwood Scoring Stage, which has a 96-channel AMS Neve 88RS-SP and four Pro Tools rigs. The sessions were running at 32-bit/96kHz.

Did you do anything different knowing the film was going to be mixed in Atmos?
It was a concern, something we planned for, but I didn’t do anything different. Re-recording mixer David Fluhr and I discussed it and he urged me to just ‘do my thing’ in 5.1 as usual and he would take the stems and ‘Atmos-ify’ them. I feel the solution was good for this film and I was happy with the way the score sounded in Atmos and 5.1.

Do you listen to dialogue while mixing music?
I monitor the dialogue and effects nearly half the time while mixing music. I prefer to mix the cues in order, but I recall settings for similar cues as a starting point. The mixes that went to the stage were 5.1, and I also did a stereo folddown for the soundtrack album.

What did you learn or take away from working on this film?
It was an especially nice experience working with the WDAS music department under Chris Montan, and really all the filmmakers were a pleasure to work with. One of the directors even attended the CAS Awards! There was a lot of dedication and love from everyone toward the project.

What do you like to do outside the studio? Do you still play guitar?
I’m a little bit of a computer geek—which is a hobby not really far enough away from my work, as we use computers constantly. But I’m interested in open-source software projects, Internet collaboration, alternative operating systems like FreeBSD and Linux. I very rarely play guitar anymore, but amusingly, some of the times I do are on film scores!

What’s your top two or three albums of all time?
Albums that were influential on me, and that I love, include U2’s The Unforgettable Fire, Tears for Fears’ The Seeds of Love, and the Red Hot Chili Peppers’ Blood Sugar Sex Magic.

Is there anyone you’d like to thank or acknowledge? Anyone behind the scenes on your team?
Our team is all behind the scenes! I really have to thank the crew at the scoring stage at Warner Bros. for their commitment to excellence and great attitudes. Our music editor, Fernand Bos, is the anchor of the team, and Pro Tools operator/editor Larry Mah is the best in the business! Also, Christophe’s crew at his studio are amazing young talents—Jake, Leo, and Zach.

Editor’s note: If you’d like more information about the music recording and mixing process of Frozen, check out the April 2014 issue of Sound On Sound, which has a detailed article about the score and songs of Frozen, and Casey Stone & David Boucher’s work on the film.

Gabriel Guy: Original Dialogue Mixer and Re-recording Mixer (Effects)

How long have you been at WDAS? What’s your background?

I’ve been with Walt Disney Animation Studios for 10 years. I’ve been in the business for 15 years—six years at this building, four years as David’s mix tech on Stage A, a year with him on Stage 1 at Todd-AO Seward, and I was at Skywalker Sound for four years before that.

How did you get started in sound?

I have an anthropology and history degree. But I was very interested in radio in high school and college, and as a 22 year old, blindly sent my resume to Lucas Digital’s PO Box. They saw “radio” and sent it to Skywalker. They said, “He’s got good grades, he’s an Eagle Scout…” I came in for an interview, and did not get the job because I did not know what a DAW was or what Mag was. Luckily, I got another chance and they were looking for an intro person that they could train and learn, and so I got the lucky opportunity to start up there when I was 23.

So, everything I know about sound I learned on the job from co-workers at Skywalker and WDAS. Everything I know about consoles, Pro Tools, mixing, and editing has been hands on—watching other people work, listening to mixers, asking, “What are they doing? Each pass what changed? Why did they change it?”

Where did you record dialogue for Frozen?

We did most at Disney, but I went to Capitol Records and Sunset Sound to record some dialogue after the song sessions. Doc Kane in Stage B also recorded some dialogue, as well as Bill Higley at Soundtrack NY.

Did you ever have any of the actors together?

Maybe three times. It’s hard with animation because so much of the performance is crafted in editorial. When you do have them together, there is some sort of bleedthrough, and very rarely do we use a whole take. At Sunset Sound and at Capitol, we were able to isolate them because they had vocal iso booths. So we could set up Kristen Bell and Idina Menzel (Anna and Elsa) looking at each other through glass, but actually really separated.

How many times did you record Kristen? I heard that her voice had changed from being pregnant.

We re-recorded her probably 20 times, but not because her voice changed. It was mostly because the story changed. That’s pretty normal for a lead. It’s rarely about the actor’s performance—it’s about the story evolving. It’s the same scene, but all your dialogue is slightly different, so it’s just lots of replacing.

How did you move into mixing?

A year ago, Dave and I mixed the Paperman short, which went in front of Wreck It, Ralph. I had been doing some temp dubs, but that was the first final I got to do with Dave, and it was fantastic.

One of the things I definitely bring (that I think is unique) is this history with the movie before we’ve even mixed it. I’ve been working on these movies for like three years before we mix them—having already done numerous mixes internally, seeing it so many times, recording so much of the dialogue. I’ve seen all the iterations, so I can be super inside the editor’s head and the director’s head in terms of knowing what they want and why they want it. Oftentimes, at the mix stage, you don’t know all the things that have gone on before. I definitely know where all the emotional beats are, I’ve seen all the iterations of the scripts and different screenings, and what should be played big and what’s not important.

I’m surprised that doesn’t happen more often.

I think we are moving more towards that. We’re doing all this planning in our heads way ahead of time, so when you get it to the dub stage, you bring all that into the mix and to what you can present. Plus, there’s that trust that everyone has already built up.

Were you involved with the sound effects prep at all?

That was Odin’s [Benitez] crew. Odin’s cutting room (at Disney) was actually an Atmos room. He was able to cut and hear things in Atmos and start doing Atmos panning in his room, so it was a predub to the dub. On Frozen, the delineation between cutting, predubs, and final was really arbitrary. It was really just a continuous work on the soundtrack. I’m just taking the same tracks and doing even more, I’m putting more elements in Atmos, I’m adjusting levels differently, I’m doing more EQ and changing stuff. It was just a continuous growth from the beginning to the end.
How wide was your session? How many systems?

FX only were only about 300 tracks. Backgrounds and Foley were about 200. We had an HDX3 playing back FX, HDX2 for BG and Foley, and all the Altiverbs were on another session. This is the first Disney animation film where we have not printed predubs. It was all done virtually. We could have printed it down, but we had Atmos automation, plug-in automation, volume, etc. So the sessions were just continuously building.

Any challenges with snow and ice?

Oh sure! The Olaf snow movement was a huge thing because he makes so many different sounds. There’s walking, several different footsteps, his body movement, squeaks, snow stuff, crunchy stuff, wood hands. So that added a huge amount of tracks just for all of his movement, as did the Sven stuff. There was his harness, his galloping, which we topped many times over with pitched-down versions, regular, snow, or deep snow versions.

Elsa’s footsteps in the ice palace—they were very particular how they wanted that. She is wearing ice slipper high heels walking on ice. What does that sound like exactly? We did a whole trial of wine glasses on a block of ice, metal knives on a block of ice, but then certain times the ice would sound like concrete. Sometimes if you put glass on concrete, then it sounded more like ice. There was a whole exploratory—I think there were around eight different versions of the footsteps. We had a whole day on the stage where we played all the different versions, and came up with a mix of three of them that we ended up using.

As far as snow, we had at least five tracks for every footprint of different types of snow. The footsteps were Foley topped with FX. Puffy snow, crunchy, deep snow, pitched-down heavier stuff; there was a huge mix and match of what kind of snow are they in. A lot of times, we just basically covered all of it with all of the different versions because we often wouldn’t see the final visuals until close to the end to kind of know how puffy or snowy or icy. So any time they were walking on snow, there were many, many, choices.

So, Foley also probably didn’t know the surfaces till late in the game. Is that a common challenge with animation?

Yes, definitely. The Foley crew at WB would have to ask, what are they walking on? What is that thing that they are holding? Is it made of glass or wood? There were Foley pickup days because of that. On the FX predub, we did 12 days of predubs, and then we had four other days to update. There were also whole other sections that we just skipped. The Troll song, for example, was one of the last to come in. We were told to just skip the whole song because they were still cutting. All through the final, sweeteners were based on visuals.

Did working in native Atmos add any time to the schedule?

We only spent one or two extra days because of Atmos, which was basically the Atmos printmaster. Berenice Robinson (VP of Post Production) wanted to mix in Atmos with no additional time, which had never really been done before. So, we thought it out right up front. We knew we couldn’t do a 7.1 mix and then have a week or two to do the Atmos mix, and we also had to deliver the Atmos mix at the same time as the 7.1 in theaters. So, we decided we would just do Atmos up front and check in 7.1. The only extra pass was checking the 7.1, just like you would check from a 5.1 to 2 track—you listen and make adjustments as necessary, and that’s all we did. The folddown was fantastic, and all we did was minor changes.

What do you like to do outside the studio?

I love baseball, music, and I’m into synthesizers (I’ve got a lot in my office). My wife is a freelance food and lifestyle writer, so we’re big food people. We just came back from Australia!

Is there anyone behind the scenes you’d like to thank?

Berenice Robinson has been huge in putting the team together. Also, Jeff Draheim, our picture editor. In animation, the picture editor is the sound guru! He’s the one who really crafted the temp in the Avid, and the first arbiter of taste. He was also on the stage during all the predubs and final.

Odin Benitez, sound designer and sound supervisor—he and his crew (from Formosa group) were amazing and made the whole Atmos from the beginning, blurring the lines between cutting, editing, and mixing. We talked early on about how we were going to set that up and not tie our hands with predubs and Atmos, and not take any more time.

David E. Fluhr, CAS: Re-recording Mixer
(Dialogue & Music)

When were you brought in on Frozen, and what was your involvement before the mix?

I have a unique relationship with Walt Disney Animation Studios. I’ve been working with them now for 10 years and they have included me very early on in the process. I got to see Frozen in storyboard form and early screenings for the studio. I got to see the story start developing, and started thinking about how we were going to approach the sound very early on.

As it started to get more formal and the songs started to take shape, I started interfacing with the sound supervisor (Odin Benitez) and music department, and we started thinking about how we wanted to approach things concept-wise. Odin was brought on very early also, and he went out and recorded specific ice events and organic sounds that he knew he would be able to use early on.
With the music department, we’ve done so many films together that it just becomes very comfortable. At the beginning, we had post-production meetings. We met with the score mixer and determined what the stems should be. Having those meetings really helps so that the piano is always where you think it’s going to be. It may seem obvious, but that doesn’t always happen. Then, in these meetings, I can take input from them. Maybe the score will lend itself to LCR versus 5.0, or maybe they want to do the surrounds. Most of the time, I’m spreading it on the stage, but it’s a case-by-case basis.

I go to the scoring sessions as well, and consult with the composer and music editor and they send me the musical scores. I read scores to learn the themes and how the orchestration is working, so by the time I get on the dub stage, it’s not a mystery to where things are going and the thread of the music.

How did it come about to be mixed in Native Atmos?
When Disney embraced the Atmos format, I did six months of R&D here just woodshedding on different workflows for Atmos. Frozen seemed an obvious candidate to mix in Native Atmos just to help tell the story.

We approached the 7.1 and the 5.1 as if it was our two track—in other words, when we do our two-track mix, we pull up the stems, fold it down, listen to it, and make adjustments. That way, we could be pretty much free to do whatever we wanted in Atmos. We ended up pretty close to how we budgeted the days to do it. It worked because people offered us the chance to get involved early. We had it all mapped out before we even started, and that was a real advantage.

How does the planning affect where you’re at going into predubs?
By the time we got to the predubs, we had a really clear image of how we were going to approach it. We basically started finalizing the day we started predub. Odin and his team had been working in the box here (at Disney) in one of our small Atmos rooms that’s designed specifically for sound design and Atmos mixing off the big stage. So, when we brought their FX to the stage (System 5 consoles working in Eucon mode), we knew we could open the sessions and play, so we weren’t reinventing the wheel during every part of the process.

I’m working in a hybrid mode in Pro Tools in some areas, with plug-ins in the box, but also working in the DSP of the console to combine it all together, and then totally in the box using the Eucon side and the FX side mixing in Native Atmos. When we get to the mix, we can use the same automation we’ve been using since day 1. So it’s really fine-tuning all the way through.

How long was the dub?
I think we were on the dub stage 47 days (predubs included)—not continuous.

What was the music setup on the stage?
We had two rigs: a score rig and a song rig. There were nine songs in the movie, so quite wide—110–120 tracks of song. Score was about the same. We had A and B score, so the track count did add up, but it was extremely organized. With Atmos, it’s about pre-planning and knowing who’s delegating to what objects, and planning where dialogue, music and fx are going to go. With any film you have to do that—you have to be careful not to get peanut butter in the chocolate.

What were the benefits of mixing in Atmos?
Just sonically—even if you just play a regular 5.1 mix in an Atmos room, it’s a huge upgrade.

With the surround field, you’re no longer dropping off to 82 from the front—you’re 85 all the way around in full-range surrounds. You’re not rolled off in the top and the bottom. So, you can pan a voice all the way around the room and it’ll sound the same as it does on the screen. Fast pans sound about the same as they do in 7.1 and 5.1. It’s the slow stuff that really gives you the details in the location of where you’re going around the room. You find these things out just by doing, and you just have to experiment with it.

The effect of being able to pull things just off the screen so that everyone is not sharing the same real estate gives it a clarity we haven’t had before.

You can now manipulate and control the immersive effect, and we did that on Frozen with the orchestra. The songs are more screen-oriented, so it just didn’t lend itself to the orchestra being everywhere. There were a couple songs, like the Troll song, where all the vocals were in objects and moving around the screen.

We have this incredible tool, but we didn’t want to overuse it. We just wanted to really make sure you never lose focus on what they’re saying. That was really key. The action sequences (the attack on the ice castle, huge sweeping gestures by the snowman) played really effectively because we weren’t living there all the time. So, we were very selective and made choices of how to use it, just as we would in 7.1 or 5.1. There were some cool sonic moments that still drove us forward with the characters, like when you’re surrounded by the ice cracking that goes over your head, or the choir is draped over you.

Are scoring mixers giving you extra mics for the overheads?
For me personally, I’ve found that’s not what Atmos really is. I’ve gotten room mics, but it just sounds like open room, so it’s not like you are getting the full effect of what it can do. It hasn’t been very helpful so far, and I’ve had conversations with all this, but what Atmos really is. We have this incredible tool, but we didn’t want to overuse it. We just wanted to really make sure you never lose focus on what they’re saying. That was really key. The action sequences (the attack on the ice castle, huge sweeping gestures by the snowman) played really effectively because we weren’t living there all the time. So, we were very selective and made choices of how to use it, just as we would in 7.1 or 5.1. There were some cool sonic moments that still drove us forward with the characters, like when you’re surrounded by the ice cracking that goes over your head, or the choir is draped over you.

What is the workflow like for you and Gabe?
It’s really a symbiotic relationship. He learned Atmos but already knew the console, so he was able to move right in, and it was a smooth transition. It was a traditional two-man mix in that sense. We’d do tag-team mixing where I’ll get several hundred feet and then he’ll jump in and do his part, and then I’ll jump back in. We’d kind of plan where we’d need to be at the end of each day, plan for our playbacks, and problem-solve along the way. It’s such a good collaboration—if someone has a suggestion in the room, it’s always taken seriously. That’s how WDAS works with their whole braintrust. When they do screenings, all the directors and producers come in and give their notes. Gabe’s used to that and he’s a real team player.
What were other challenges?
Gabe did such a beautiful job on the recordings that I didn’t have very much fixing to do. Sometimes when we get sources from all over the place, we have to do traditional ADR, and you get what you get. So, we have all the same challenges, except we don’t have traffic noise and air conditioning. Although we do have that sometimes too.

Every sound has a spot and has to be placed. Every single thing has to be decided. There’s a thousand decisions all in a day. For me, mixing is so much about what we take away—not what we put in. We have a huge palette, but weeding out to what you really just need is also a challenge. I think the most successful sonic experiences are where you keep it as simple as possible. Sometimes things require a huge complication. On this film, we had 700 tracks of FX going plus a score rig and a song rig, group, so just like a big live-action film, it can get really overwhelming really quickly. But, it’s such a comfortable and great environment to work in and just be creative. You can take chances. John Lasseter drives this from the top and his thing is to be bold. Tell the story, and we’re not just painting by numbers. It’s pretty inspiring.

How did you transition from TV to film?
My long-term goal was always to get into movies, but I had early success in television. I worked at Larson—I came up from Compact Video. I had an incredible, lucky experience learning from the ground up. Not just the craft and being able to spend time woodshedding and doing things on my own, but just having people that believed in me and helped me along the way. I was this kid out of music school that didn’t know much about Motown, and all of a sudden, two years later, I’m doing Motown on Showtime with Berry Gordy and Michael Jackson, and it was incredible. When I went to Larson, Rick Larson gave me the opportunity to work with a three-man team. We did a Movie of the Week (MOW) and hour dramatic TV, then some small features. My first feature was White Fang for Disney.

I started growing into bigger projects, and J.R. DeLang (who was running Todd AO at the time) invited me to come there, and gave me the opportunity to get into features. He said it was going to be the hardest thing you’re going to have to do, because you’re going to have to pretty much give up everything that’s come before and start your resume over. I was at a point in my life where I could do that, but it was very difficult. The people around me really helped me. I learned from people like Buzz Knudson, Andy Nelson, a lot of people that I could sit and watch because it is a different medium.

I ended up doing a few Disney movies at Todd AO, and then Stage A (at Disney) had an opening and they invited me to come over to the lot. It was not easy leaving any place because I loved the place and the experience. So the transition, even though it was long and difficult, has been extremely satisfying.

It’s different now—everybody is doing both TV and film. It should never be split. Having come from there and knowing how to do TV fast, accurate, and well—you have to be able to make decisions and do quality work in a shorter amount of time. When you get into the bigger movies, you still have time constraints. I think it really helped me to learn how to make schedules work.

I still go back and do a TV special now and then and it’s fun. Those after-school specials were my lifeblood back in the day. They were little movies that were complicated—dialogue, music, and FX—and I was single man mixing, and I really cut my chops on that stuff. It all really adds up to where you are now.

I’ve been grateful to have worked on so many types of things that it all pays off. Yes, I have a music background, but I was doing dialogue only for 10–12 years. I tried to be ready for opportunities, as opposed to when the opportunity comes up, then be ready. I always tried to prepare myself in advance.

How did you meet your wife Pat?
My wife Pat was my engineer for 10 years at Compact Video. She was my stage engineer, and she would fix, design, maintain everything that I broke. She knew more about baseball than me. We’ve been together a really long time, and I just never had to explain anything about my work, commitment, hours. When we had our son Nicholas in 2000, she became full-time mom.

What are your thoughts on the success of Frozen?
All I wanted to do was help filmmakers tell stories. It’s very satisfying to me to see all these filmmakers having success and being part of it. To see Jenn, Chris, and Peter getting the Oscar—and then coming back to share it with everyone—was pretty amazing. I’m really grateful. I think the business has been good to me, and I never want to stop learning and growing and figuring out new things and being innovative.
TV Movie or Mini-Series

MEET THE WINNERS: BEHIND THE CANDELABRA

by Devendra Cleary, CAS

Before receiving this assignment, I had been given a preview of some of this project’s production challenges from boom operator Javier Hernandez. Now, I had the opportunity to delve in further and learn more. The mix team, who also earned an Emmy for Outstanding Sound Mixing, is comprised of Dennis Towns, production mixer, Larry Blake, re-recording mixer and supervising sound editor, Scott Curtis, Foley mixer, and Thomas Vicari, scoring mixer.

Dennis Towns: Production Mixer

In addition to being respected for his professional aptitude, Dennis Towns has a reputation for being an extremely nice guy. While hurdles many seemingly insurmountable challenges, he always manages to bring a smile to the faces of his peers. I asked him about his early exposure to film sound:

“I was taking classes at the University of Maryland—some in electronic music and some in the film department. Pretty soon I was the guy doing the Nagra to 16mm mag transfers for everybody—and then doing the final interlocked soundtrack mix. At the time, I also worked in the equipment cage, where students would sign out gear. I taught some how to use the gear but, mostly, they would just ask me to record the sound for them instead.”

While he has worked on multiple Steven Soderbergh productions over the years, Dennis recalled his first experience working with him on K Street. Shot in Washington, D.C., the guerilla-styled, unscripted weekly drama mixed actors and civilians playing themselves. It was shot without lighting, hair, or makeup. Dennis explained some challenges:

“Steven had one rule for sound: no boom, all wires. It was all done over the shoulder on a Fostex PD-6. My 2nd and 3rd were in charge of all the wiring and plant mics. Each episode was topical, as the story was based on the real issues and events of that week. Each show was written, shot, and edited in five days—and then delivered to HBO for air on Sunday night.”

Certainly then, Dennis has come to expect a challenge or two from Soderbergh. So, I wondered what the biggest challenge was that he encountered on Behind the Candelabra. Dennis pointed out that the sets embodied what you would expect from Liberace’s lair: mirror and glass along with elaborate sets and costumes.

“A lot of the costumes were a challenge to wire because they were from the ’70s; being skin tight and open from the neck down—with piles of necklaces. Some of the scenes were impossible to wire and were shot as a one-er. Plus, some of the rehearsals were closed.”

Dennis mentions that Soderbergh did, however, offer helpful places to plant mics. Although, these efforts were sometimes complicated by a lack of a sightline.

“Another challenge was that there were no video monitors, except for the focus pullers. It’s a bit hairy trying to mix between the boom and plant mics if I can’t see where they’re landing! I had to rely on (boom op) Javier Hernandez’s description of the shot and action—and mix by instinct.”

In addition to Javier, who Dennis describes as his “eyes on the set,” Dennis’ team consisted of 3rd utility Gerard Vernice and music playback operator Mark Agostino.

Larry Blake: Re-recording Mixer & Supervising Sound Editor

In audio post, Larry Blake balanced the responsibilities of supervising sound editor and re-recording mixer for this elaborate production. Given his vast experience, it is obvious that filmmakers benefit when someone of Larry’s caliber is handling the sound for their projects. We spoke on a Sunday afternoon, during a break in a session taking place at his studio in New Orleans.

Larry’s history with Soderbergh has extended for 30 years. Larry expanded:

“I’ve known Steven for a long time—since 1979, when he was 16 years old. We met through mutual friends in Louisiana. Early on, my interest was more broadly in filmmaking and directing. I went out to L.A. in 1979, initially to write a book
about the history of film sound, which then morphed into writing magazine articles, starting in 1981. I eventually started working for a top sound editorial company in Los Angeles called Weddington Productions. We built a small mix room and I started mixing there in 1988. I just really enjoyed doing it. The first mix I really did was Sex, Lies, and Videotape, Steven’s first feature.”

I asked Larry how long it took to mix Behind the Candelabra. He revealed that he was also working on another film, Side Effects, simultaneously with Soderbergh. “We were jumping back and forth between two movies. If you were to add it all up, it was probably three weeks.”

While jumping back and forth between projects would appear to pose some difficulties, Larry explained that the music was the most challenging aspect:

“The performances that take place in the Las Vegas Hilton were all pre-recorded. Getting them to feel like they were being performed in that space, at that moment, was a challenge. Having the music feel organic, if you will. It wasn’t a “keep you up at night” challenge, but it still was the biggest challenge of the movie.”

Larry was also certain to point out the contributions of his team.

“Dennis Towns is a superb production mixer. He and I spoke a lot about establishing procedures and approaches towards the sound. We worked closely with Mark Agostino, the music playback operator. We also had a very open dialogue with production and post production.”

Larry is now on a 10-episode TV series for Cinemax with Soderbergh titled The Knick, that takes place in a hospital in the 1900s. It stars Clive Owen and is slated for release in August.

“Since Larry cues the Foley, he has a pretty good idea as to the amount of time needed to complete the project. Also, because of his close collaboration with Steven, and having supervised and mixed all of Steven’s films, he knows what Steven is looking for.”

The Foley was recorded on Paramount’s new Foley stage. In fact, the team was the first to record there. Scott recalled his experience conducting the room’s inductive sessions. “The room used to be part of a soundstage before getting converted into a Foley stage. It has nice, high ceilings and the acoustics make it one of the best sounding Foley stages in L.A.”

When I asked Scott about the most challenging aspect of this production, he explained that Foley is, by nature, a challenging art of precision. “One of the functions of Foley is to enhance or augment the action recorded during original production. So, it is key to make your Foley sound like production. Microphone placement, EQ, and perspective recording all contribute to ‘getting it in the pocket,’ as they say.”

The Foley mixer combines an interesting blend of artistic and technical talent. When asked which side he felt he favored, he revealed an even split of artist and technician.

“You need a firm technical grasp to troubleshoot various issues that may come up. It’s also necessary to know what to apply, as far as outboard gear or plug-ins, to achieve the desired result. Artistically speaking, it is our goal to deliver a performance that fits with the director and supervising sound editor’s vision—and helps tell the story. It is a ‘feel’ thing that you develop through experience. The technology serves as a means to capture the recording to fit that end.”

**Tommy Vicari: Scoring Mixer**

It was a rainy Saturday when I had the pleasure of speaking to scoring mixer Tommy Vicari. In Tommy, you’ll find a person who truly lives and breathes music—and it shows in his body of work. He has a broad engineering resume, including projects with Barbra Streisand, Carole King, and Prince, as well as mixing the Academy Awards over a dozen times. I asked him about his start in the business:

“I started out working in the mailroom at Capitol Records. I asked one of the producers, Nick Venet, if I could go to his sessions when I was done with my shift, and he was gracious enough to say ‘yes.’ So, I would hang out in the studio and observe. After a while, I went to work for A&M Records, where they had an engineering training program—kind of like a paid internship.”

I inquired about his first big break:

“After two years of being an assistant engineer, I came to work one day and they said, ‘Tommy, nobody wants to do this session. You want to do it?’ I asked who it was for and they said Billy Preston! Now, I was a big Beatles fan, and Billy had played with The Beatles. So, I engineered his record. George Harrison even played on it! It was just … Wow! One of the songs, ‘Outa-Space,’ even hit number one!”

Commercial music is a different beast than orchestral recording and mixing. I asked how he became exposed to orchestral recording:

“After four years at A&M, I went to work for Armin Steiner as a staff engineer at Sound Labs. Armin was a master of scoring orchestras and he provided me with an education on recording large orchestras.”
I asked how he came to work on *Behind the Candelabra.* Mark Graham, who is a musician and a copyist, as well as a friend of mine, called me. He asked if I would be interested in working on the project. Of course, I was. They got approval from (composer) Marvin Hamlisch, and that’s kind of how it happened.”

Tommy’s process of research and preparation for his sessions started, humbly, by searching YouTube. It was there that he quickly noticed a major characteristic in Liberace’s performances. Tommy expanded:

“I noticed that Liberace had tremendous ability. In all of the recordings, it seemed as though he was ahead of the band. In his enthusiasm to be a showman, he would be playing it one speed and the band would always be trying to catch up!”

Pianist Randy Kerber was tasked with emulating Liberace’s style. Tommy devised a way to ensure the piano could remain the focal point of the recording. “They wanted to keep the piano isolated. So, I put up the mics I normally use and decided to add a couple others. In the end, I used two B&K 4011s, which I put on either side of the player—pointing down at the piano and two Neumann 149s using an orchestral style micing technique. I found that the combination of the four worked best.”

Impressively, Tommy reported the need for very little fixes, describing Randy’s performance as “impeccable.” In fact, instead of separate tracking and mix dates, Tommy dove right in and mixed it the same night he tracked. “Randy just played amazingly. It sounded to me like Liberace. After we finished the recording, I mixed it right there. Usually what happens is, we’ll do a recording date, and we’ll do a mix date. But, in this case, we finished recording and I gave them mixes to use for playback on set. Those mixes are the ones that ended up in the movie!”

“I get to do what I love for a living. Because I enjoy my job so much, a friend of mine, (renown producer and engineer) Al Schmitt, says that I lie to my wife every day when I go to work. I just think I’m a lucky guy.”

I would like to thank Dennis, Larry, Scott, and Tommy for taking the time to speak with me. It was truly an educational experience chatting with these guys. Congratulations!

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TV Series – One Hour

**GAME OF THRONES**

“**The Rains of Castamere**”

by Matt Foglia, CAS

While the broadcast of Season 4 has just gotten underway—with the premiere episode being HBO’s highest audience since the *Sopranos* finale, this year’s recipient of the award was bestowed upon the crew of HBO’s hit series *Game of Thrones.*

The winners were kind enough to provide some insight about themselves—and the making of this hit drama.

Ronan Hill, CAS: Production Mixer

*While I’ve found some well-written interviews with you discussing Game of Thrones, I’m curious of how you first got into sound for picture?*

My career in sound started 40 years ago when I was 7 years old. I would record the aftermath of storms and other stories local to my home in Ballycastle (Ireland). My father Patsy Hill was a freelance cameraman who covered stories in Northern Ireland from the late ’60s through the ’90s, including Presidential, Papal, and Royal visits. Occasionally, I would be allowed to go with him to work and carry the mixer and boom mic. In my teens, I had a summer job assisting him, which led to me meeting a lot of talented sound recordists from the audio unit in BBC Belfast. It was there that I met Peter J. Devlin, CAS who, throughout my career, has kept in touch. In fact, just before I mixed my first feature, I visited him on the set of *King Arthur*, outside Dublin, and gleaned so much from the advice and information he imparted.

Foley mixer Brett Voss, production mixer Ronan Hill, CAS, and re-recording mixers Mathew Waters, CAS and Onnalee Blank, CAS
What was your first “big break” on a higher level production where you were either the boom op or the production sound mixer?

I had been working on documentaries for about seven years when I got a call from a production company looking for a mixer for a TV drama. I reckoned the job would go to Mervyn Moore, an ex-BBC sound mixer who had a lot of drama experience. I called him, told him what I thought and asked if he would consider me as boom operator. We worked together for a couple of years on feature films and TV dramas. I gained from him my fundamental drama knowledge. When a TV drama called Pulling Moves was to be made in Belfast, Mervyn encouraged me to go for the job as mixer. That was my first job sitting down and, I guess, I must have done okay as the producer recommended me for a feature film being made in Belfast.

Much of GOT is shot in your home of Northern Ireland. Given the research and signoff that goes into finding heads of crews, and even though you had an impressive resume, I can’t imagine that you being a local hire was “enough” to get the gig as the production sound mixer. How did you go about getting the job?

I had a few TV series and feature films under my belt when HBO set up meetings with potential HODs, as they were considering coming to Northern Ireland to shoot Game of Thrones. I had also just received my first award (an Irish Film & TV Award) and completed Hunger, for director Steve McQueen. Also, one of the producers on the pilot and Season 1, Mark Huffam, had produced the first feature film I mixed and appreciated my work.

A good boom op can make the job of a production sound mixer significantly easier, and you speak highly of your boom op, Simon Kerr. How did you two start your working relationship?

I first worked with Simon Kerr in 1999 on a short film I mixed called Piæce. He was fresh out of college and keen to start a career in sound. I could see his potential and soon got an idea of his ability, so I recommended him as trainee on the last feature film I boomed. To ensure his training continued, I then recommended him as trainee on another feature film going into production, which I wasn’t involved in. In 2003, he joined me as boom operator on Pulling Moves, and has boomed most of the jobs I have mixed since.

For this series, I’ve read that you aren’t sending a mix to the camera (ARRI ALEXAs). Do you know why that choice was made?

The pilot was shot on film, so separate sound was the only choice. With Season 1, they started shooting with the ALEXA, and a guide track to the camera was considered. It’s not a system that I favor, as it’s something else that could go wrong, since you’re relying on an unmonitored radio feed for editorial and rushes. Instead, the first track of my poly wave file (the production sound mix) is imported into the Avid for editorial and daily purposes. The way the team deals with sync means potential sync errors don’t slip down the chain and allows all tracks to be available to post if required.

Given the nature of the show, the approaches to capturing the sound seem like they can shift from story to story. Can you provide a contrast between two different episodes?

Let’s use the “Blackwater” episode from Season 2 (which garnered Ronan and the gang an Emmy) and this episode (“The Rains of Castamere”) as examples. “Blackwater” was a real challenge since we had to record battle scenes and clean dialogue. We tried, where possible, to record the effects on a stereo pair for the master and wider shots, so this could be used as sync or wild sound over the closer coverage where dialogue took precedence. We also tried to ensure that shots of an army charging into battle sounded like an army was charging into battle and were clean of cues.

On “Castamere,” we had the “Red Wedding,” which was quite different. Here, the atmosphere was tangible and full of emotion, not least by the fact that we were losing major characters that had been with us since the start. This was pure human drama. It was vital to retain the integrity of the original performance.

The scenes also comprised playback with earpieces and live music. I talked to director David Nutter about the necessity for stereo wild track for music and crowd participation. He listened symmetrically, agreed that it was a good idea, and created extra shots to cover this. He drew a line when I requested a spot effect of a crossbow, though!

Can you share any things you do on set that you feel help out the post process?

Sure. We record wild lines and spot FX using two booms—one wide and one close. This allows post to mix perspective to match the relevant shot. Also, sometimes it’s tricky to get a good mic position on a costume, so we cheat them out a little on wide shots and place them on the surface for coverage when the character is not in shot. This allows words to be dropped in on wide and one close. This allows post to mix perspective to match the relevant shot. Also, sometimes it’s tricky to get a good mic position on a costume, so we cheat them out a little on wide shots and place them on the surface for coverage when the character is not in shot. This allows words to be dropped in on wide shots to cover this. He drew a line when I requested a spot effect of a crossbow, though!

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Season 4 has just started airing. Not to reveal any plot lines, but did you make any notable adjustments to your approach?

The main boom, which I used to record post-fader, due to lack of inputs on the 788t, became pre-fader, and I sacrificed the channel with a lav mix. This allowed greater flexibility with all booms and other sources isolated and available to mix.

What are you working on right now and where are you shooting?

I am currently working on the second season of The Fall (Artists Studio for BBC TV/Netflix USA). It’s a psychological thriller set in contemporary Belfast. The show stars Gillian Anderson and Jamie Dornan. I love the contrast with the medieval fantasy of Game of Thrones. On The Fall, we record a lot of urban and rural atmos in stereo on isolated tracks to give the show a natural realistic feel.

Anything else you’d like to share?

I couldn’t finish without thanking all the people who make it possible, including my team: Boom op Simon Kerr (Seasons 1–4), sound assistants Jonny Waite (Seasons 1–4), James Atkinson (Seasons 2–3), and sound trainee Daniel McCabe (Seasons 3–4). The entire crew on Dragon unit has been a considerable help, with many of them now honorary members of the sound team. Of course, the excellent work of the post sound department can’t be understated. Also, post producer Greg Spence is a true champion of sound. From the pilot of Game of Thrones, he has supported me and used his influence to ensure production sound was given the respect it deserves. He has already contacted me to see how he can help on Season 5.

Richard Dyer: Production Mixer

How did you get into the sound business to begin with?

I grew up in Cardiff (Wales). On leaving school, I was fortunate, within three months, to be employed by the BBC as a staff trainee assistant sound recordist for three years. This involved some periods of training at the BBC Training Centre at Wood Norton and plenty of practical on-the-job experience. This was divided between the transfer suite (transferring rushes from 1/4” tape to 16mm Sepmag ready for the asst. editors to sync up) and location work, where my duty was to assist the boom op. Once my training period was complete, I progressed to asst. sound recordist and pushed to get as much location experience as possible. As we were a film unit with only five crews, there were plenty of opportunities to get experience in drama and, within a few years, I was mixing dramas and gained a promotion to Sound Recordist Grade. I left the BBC in 1995 and have pursued a career as a freelance production sound mixer, moving to London in 2003.

I see you have a good bit of period work on your resume—which can often require being extra creative with mic placement. How did you come about working on GOT and do you think your period work was a consideration for your hire?

I was fortunate to record a Dickens’ TV series, Great Expectations, with Brian Kirk inspirationally directing. He had directed three episodes of Season 1 of GOT and I’m sure that my experience with him (and probably some positive feedback from post) put me in good stead for consideration for GOT 3.

Tell me about your crew and their titles—which are a little different than the traditional “boom operator” and “sound utility.” (Credits listed as “sound maintenance” Bradley Kendrick, AMPS and “sound assistant” Luke McGinley).

Actually, I think AMPS have redefined the titles over here as 1st asst. sound and 2nd asst. sound in an attempt to regain parity in grade and remuneration with the camera department. My crew are essential to the quality of the product we deliver. On any one day, they provide the majority of the “effort,” with regard to micing the artists, adjustments, boom operating, and equally importantly, they are the “faces” of the sound dept., in respect to relationships with artists and crew on set. I am relatively low profile on a general basis, relying on the feeds they provide and the decisions they make. Obviously, the responsibility for the standard of the tracks we provide rests with me but in order for the dept. to function productively, my crew must—and do—have amazing conscientiousness, which I must be able to trust in their judgment.

Tell me about the unit names “Dragon Crew” and “Wolf Crew”? What do they mean and how are they different?

I assume they have come from “character” references. Generally, the Dragon Unit stays in N. Ireland and the Wolf Unit shoots abroad, whilst also covering some of N. Ireland.

Are you using both a bag and a cart on the show—depending on scenes—or are you able to rely solely on a cart because of wireless systems?

I actually carry a complete replacement setup for my cart as well as a bag. Part of my responsibility is to provide the equipment and, in doing so, I liken myself to a hire company. In the event of a major malfunction of part, or all, of a system, I need to provide replacements, as would a hire facility. Bearing in mind the harshness and remoteness of some locations, and the relentless nature of the schedule, there is just no time to fly in new kit (or, sometimes, even to repair). So, I have two cart rigs and a bag—both with wireless capability. The factors that dictate which I will use on any one scene usually come down to accessibility of location. For instance, there was lots of bag work in Iceland!

Can you give a rundown of your rigs?

My main cart has a Zaxcom Deva 16, Mix 12, and Audio Ltd 2040. My spare cart has a Zaxcom Deva V, Audio Developments AD149, and Audio Ltd 2040s. In my bag, I have a Zaxcom Fusion and Audio Ltd RK6.
Do you have a “typical” mic setup?
My boom mic of preference is the Sennheiser P416. It is a good, incredibly reliable workhorse for everyday use, offering impressive rejection of off-axis sound. With Dragon Unit using Sennheisers also, this gives us good conformity of tone between the sound from both units. One of the advantages of multi-track location recording is that an ambient mic can be set up away from the dialogue, but being laid concurrently. This provides timecode locked ambience which is particularly useful when specific sounds (vehicles, for example) may cross edit points. This also takes some pressure off the Unit because we are not holding up x number of departments from their work while they stop for us to record wildtracks. We regularly use two booms, often in order to cover in-vision dialogue but also to cover off-lines, giving post production as many usable options as possible—from a technical perspective.

What tracks do you typically provide to post?
Track 1 is always a post-fade mix track. Tracks 2-16 are ISO tracks (pre) of booms, spots, and radios (named by artist).

Have you had to change or update any gear or methods between Seasons 3 and 4?
I invested heavily prior to Season 3, so I was reluctant to make major additions between 3 and 4. Most of the maintenance required was related to moisture within body-worn radio mic transmitters (including fight sequences!) from filming in hot climates and also fader replacements across the whole Mix 12 due to dust in Morocco (and cold/damp weather in Iceland).

Given that last answer, it sounds like Game of Thrones has taken you to some interesting places!
Yes, GOT has taken me to three fantastic countries. Iceland, where we filmed in late autumn for the snowscapes in a geologically exhilarating (and quiet!) area called Myvatn. We’ve also gone to Morocco, to a coastal town called Essaouira and also to Ouarzazate. And, during Seasons 3 and 4, we went to Croatia quite extensively. The variety of climates and conditions provide challenges to man and machine!

Brett Voss: Foley Mixer
Was there an event or exposure that led you on the path to working in the area of sound for picture?
I played a LOT of guitar through high school and went to college to focus on music production. And I found myself drawn to post sound while there. I really liked the attention to detail that went into it.

How did you get into Foley mixing as a specialty?
I started as a runner at Todd AO Studios in Santa Monica. During that time, I met and became friends with the Senior Vice President of Sound at Paramount Pictures, Cece Hall, and she took me under her wing. She taught me how to think of sound through the ears of a storyteller. I took on supervising the sound of smaller independent projects, and was also mixing the Foley for them. When a nighttime Foley mixing position opened up at Todd AO, Duke Lim gave me a shot. After a year or so of doing that, circumstances lead to me working with (Foley artists) Jeff Wilhoit and Jim Moriana.

I see you’ve worked on a couple of video games. How did the delivery methods differ from your experience delivering for TV or film?
Foley recording is rock ‘n’ roll. Down and dirty. We move along at a really good clip and I definitely have to make sure to name/label things properly. I work hard to keep my immediate world organized. Logistically, video games are really no different than TV or film. File and region management is very important!

How did you become involved with GOT?
Peter Brown, who supervised sound for Season 2 of GOT, asked us to work with him and we were able to accommodate.

Assuming that there IS one, can you give me a “typical” rundown of the progress as you work through an episode of GOT?
We do tend to follow a routine when tackling these gigantic episodes. Each episode is, basically, like doing a small feature each week, though! First, Tim Kimmel (the supervising sound editor) spots the session, cues it up, and ships it off to us before we get to the stage. Once on the stage, we record a cloth pass to familiarize ourselves with the different sequences. While recording, I make Pro Tools marker maps of scenes with short descriptions. After cloth, we move on to footsteps, going scene by scene. Sometimes, we leave the dirt/mud stuff for the end of the day because it tends to muck up the air quality for the Foley artists. After feet, we move onto props, usually starting with an armor/gear pass. At the end, I deliver the recorded tracks back to Tim and the sound editorial team, and then they’re off to Mathew Waters and Onnalee Blank for the final mix.

I was speaking with (effects re-recording mixer) Mathew Waters, and he said that the Foley on GOT is treated as its own character during the mix. With that in mind, do you feel you have to treat it a little different than, say, if it were to be mixed in a more literal way?
No, I mix GOT the same way I mix features. I tend to go dry with thoughtful mic placement. In video games, as you mentioned before, we usually close mic for in-game, and then follow the same “dry w/ proper mic placement” routine for the cinematics.

How is Season 4 coming along?
Season 4 has certainly been busy! I wish I could say more! You’ll understand when you see it!

Anything else you’d like to share?
Yes, thank you. In October of last year, we lost our good friend and Foley artist, Jimmy Moriana, to a heart attack. He really was an integral part of our team and it’s been really tough to move on without him this season. That being said, Jeff’s son, Dylan T. Wilhoit, has stepped up to the plate and has been really hitting a home run as a second Foley artist to Jeff. We also added another member to our team, my new apprentice, Angel Hernandez.

Mathew Waters, CAS: Re-recording Mixer (Effects)
You have a lot of credits as either sound designer or editor—and have even won a Golden Reel. How do you balance being booked as a sound designer with being booked as a mixer?
I love sound mixing and sound design. I used to, sometimes,
had just won the Oscar for Flick came and spoke to our class. His dad was the teacher. He my final semester, (sound supervisor and designer) Steven University. I thought I was going to go into radio, but during I was a radio-TV major with a minor in music at San Jose State University. How did you get into sound for picture in the first place?

I treat the Foley as a character in the show. I play it up and I play it so that people can clearly hear it. We want the viewers to feel like they’re there, in those times. We feel that the Foley helps bring them there.

Looking at your IMDb credits, it’s interesting to see these acclaimed TV shows alongside some indie films—and these are recent credits. Where do those indie films come into play?

To be honest, I like helping out indie films when I can. It keeps me in that creative world and keeps my chops up with sound design. Making a film is hard—it takes a village. If I can help some of these folks tell their story, then I’m for it. Plus, they’re usually pretty fun!

**How did you get into sound for picture in the first place?**

I was a radio-TV major with a minor in music at San Jose State University. I thought I was going to go into radio, but during my final semester, (sound supervisor and designer) Steven Flick came and spoke to our class. His dad was the teacher. He had just won the Oscar for RoboCop. He explained what he did and how he got the sounds—and it changed my life. I didn’t know such a job existed!

From that moment on, I knew I wanted to work in sound for film and TV. So, the day after I graduated, I packed up and moved to Los Angeles!

**And here we are interviewing you about your sound work!**

Pretty crazy, I know.

**Your involvement with Game of Thrones started during the second season. How did that come about?**

The mix was originally done in Ireland—and that crew did a great job. However, the producers were looking to mix closer to home beginning with Season 2, and I was fortunate enough to be one of the mixers they considered.

**Can you walk me through your typical mixing schedule?**

They are very supportive of the sound and give us time to experiment a little and try approaches that may better suit the story. For example, when I’m doing background predubs, I often have time to apply EQ and position some elements—which I often don’t have the time to do on other projects. If the show is denser, I’ll start working on Foley and effects. After predubs, (re-recording mixer) Onna (Blank) and I get together and mix the show. Then (producer) Greg Spence comes in and reviews it with us—coming up with great ideas that will take it to another level and giving us notes. We all constantly strive to improve how the sound works with the story. Then we do playback for (exec. producers) David Benioff and Carolyn Strauss, the showrunners, and the other HBO folks.

This series truly makes good use of the Foley team. Tell me about how you’re approaching Foley.

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**Ondalee Blank, CAS: Re-recording Mixer (Dialogue & Music)**

*I've read that you used to work with Rick Rubin?*

When I first moved to Los Angeles, after retiring from being a professional classical ballet dancer, my goal was to seek a career where I could experience the same passion and emotion through music that I felt from dance. I didn’t want to write or play music, but wanted to be involved in the expression of sound and work in a creative environment. Studying audio engineering was the best way to combine my technical and emotional side at the same time. Working as an assistant engineer at The Village Recorder in West Los Angeles was my entry into music production. Soon after, I was offered a job working with Rick Rubin at his house in West Hollywood. Working with Rubin and a few other engineers really inspired me, and gave me the drive to always be the best at everything I did. Perfection was a must when working for Rubin.

You probably had some interesting projects, working with Rubin. Any that really stand out?

Finishing the last Johnny Cash record, American Recordings, was the most impactful record I was ever a part of, and the last project I ever worked on with Rubin. Hearing Mr. Cash’s powerful and sad voice when he could hardly sing, during those last days, really struck a note with me. I knew that I needed to focus on myself the way Johnny Cash always believed in his passion—even when people were telling him “no.”

**How did you go from music to working in sound for picture?**

At that point, I was offered a job to work with Danny Elfman—which I took immediately. Being around Elfman really opened my eyes to how emotional sound can be in a particular scene or film. I had found my calling. So, after about two years of working with him, I asked Elfman for a letter of recommendation so I could spread my wings in post production. My first target was Todd AO. I have now been with Todd AO for eight years. Wow—time flies!

**How did that lead you to being put behind the console permanently as a mixer?**

Todd AO immediately was a dream for me to work for. There was so much potential and room to grow. I became a recordist/mix tech, and trained under a few great recordists. At the same time, I started taking side projects in music editing, sound editorial, and sound design. Staying late and coming in early and doing whatever I could do to keep learning. One day a mixer at Todd AO, Andy D’Addario, asked me if I wanted to throw my name in the hat to be his sound FX mixer on a TV series. I said yes, did a mixing interview, and then got the job. I said to myself, “Yikes! Now I have to really learn how to do this!” I worked with him for quite a few years and then made the transition to mixing dialogue and music.

Mathew gave me a rundown of the mix schedule. Take me through your first pass.

On Game of Thrones, during my predub days, I put each scene down first before making any real decisions. I listen to the environment, what kind of room the actors are in. I listen to dialogue really closely and play around with reverb. Set and get an
overall idea of how I think the scene should sound. Then I go back to the top of the scene again and start digging into each word with EQ or any noise reduction that I need to do. I really work broad EQ, only a tiny bit of compression and a lot of fader work. Noise reduction is something I take time with, since it can be overdone so easily. For each scene, I try and focus on certain words that are the emotional pulls of the scene, and make them the focus without the audience knowing that’s what I am doing. Whatever I can do that is organic yet dramatic is my goal.

Perspective with the dialogue is used lightly—we’re not hearing a lot of panning as characters cross the screen. Was this an approach that the director requested or is it your preference to have the dialogue more center channel anchored? Perspectives on dialogue are a tricky thing. I do love to do as much as I can in a tasteful way. Too much panning or reverb, to me, takes me out of the scene, especially for TV mixing. For Game of Thrones, I wanted to create a style where you can hear the dialogue clearly, since there is so much information being told. Every season I do more and more perspectives, if the scene will allow for it.

What is your mix setup?
We mix on Stage 6 at the Hollywood location using ICONs. We have 1 dialog rig, 1 music rig, 1 FX/design rig, 1 BG/Foley rig, a video machine and our Printmaster Recorder—for a total of six machines. Each machine is maxed out, and we still joke that we are running out of tracks!

How is the music delivered to you?
Ramin Djawadi (composer), Dave Klotz (music editor), and myself work great together. They provide a lot of stems, so I can play and have separation. I receive Orchestra, Low Percussion, Hi Percussion, Atmospheric, Solo, Synths, Horns, Choir Male, Choir Female, and Choir Children stems. They are all quad stems that I split into mono, and then add my own amount of sub, depending on what frequencies are happening in each stem at a particular moment.

Do you have to abide by BS 1770 (CALM Act) for this show? If so, does having that “anchor” number (-24 dB LKFS) help you keep the dialogue even? I ask because your dialogue levels across the show are very clear and even.
For HBO, our spec is to hit -24 dBLKFS and -2 dBFS peak, like the spec indicates. I try to keep it there without plug-in compression or too much limiting on our 5.1 or LtRt in order to keep as much dynamic range as we can. I don’t mix my dialogue thinking of the LKFS number, since that would take me out of the creative process. Now that I have been on the show for a few years, I know I will hit the number without a worry. Basically, I love clean, intelligible, even dialogue that keeps the audience engaged—not having to reach for the remote is important to me.

I’d like to thank the sound team for taking the time to share some insight. In addition to congratulating them on their CAS Award, I’d like to congratulate them on Game of Thrones recently being renewed for Seasons 5 and 6. Happy mixing!

Modern Family
by Karol Urban, CAS

Modern Family debuted in September of 2009, and gained instant popularity. The Christopher Lloyd and Steven Levitan (Frasier, Wings) conceived sitcom, reportedly influenced by their own childhoods, instantly shot past the reality show competition in its time slot. Today, in its fifth season, it remains in a top shelf spot in America’s heart.

The single-camera, half-hour comedy, features an eclectic family living in three households, and incorporates life lessons, generational perspectives, and hilarity using a classic situation comedy approach, as well as reality-influenced confession booth-styled interviews delivered straight to camera. All of which is facilitated by crystal clear, sonic clarity, and artful comedic timing.

This year, the award-devouring juggernaut added a second CAS Award to its already impressively long list of accolades for the episode “Goodnight Gracie.” The “Goodnight Gracie” episode, watched by 10 million viewers during its original broadcast (as reported by TV by the Numbers), depicts the family traveling to Florida to attend Phil’s mother’s funeral.

Shot predominantly in Valencia, California, at The Bridgeport Community, the cast of 11 was displaced from their normal set. But the sound mix team, comprised of production mixer Stephen Tibbo, CAS and re-recording mixers Dean Okrand and Brian Harman, CAS managed to continue to deliver the show’s signature driving dialogue, sparse but essential sound design, and minimal music.

After listening to the episode, I was surprised to learn that the production was not a rare perfect five days. Stephen Tibbo reveals the location was actually full of close, heavy traffic routes, a cacophony of duck calls from the lakeside, and even a...
disgruntled neighbor who made his own personal protest to the production’s location choice through the use of a handheld air horn! Tibbo remarks:

“It is absolutely nuts to mix. But, I have developed a workflow that works for me. I’ll wire everybody all the time, though I hope not to use them, and I boom everything. So, we break everything up into zones.”

He credits his boom operators, Srdjan ‘Serge’ Popovic, Ken Strain, and the recently retired Dan Lipe, for his continued success on set, as well as the support of his director, Steven Levitan. Tibbo explains, “They are very cool about giving me a 3rd boom when I think I need it.” He typically uses a Schoeps CMIT5u boom and wires actors with a B6 Countrymen lavaliere. He elaborates on his logistical play:

“In Zone 1, Serge will get the bulk of the scene. But, when someone is coming in from another area, or there is a big split, we will go to boom 2 or boom 3. However, if someone is really deep in the background and coming in, that will be wire.”

In addition to a solid plan of attack, Tibbo is able, with a small busload of principal characters of various ages, to almost eliminate the need for studio-recorded ADR. When a pickup is needed for technical reasons or showrunners, Chris Lloyd and Steven Levitan want a different read, he is able to provide an oftentimes seamless match going to the section on the set used for the actual scene and recording with the same equipment. Dean Okrand, the dialogue and music mixer, confirms this. “I don’t know we are using ADR half of the time.” He smiles, “The pot’s up and it plays right through.”

Tibbo insists on wires on all characters all the time, even if they are not slated to speak. Tibbo explains, “You can’t go in every time the actor does something to the mic. You will steal their performance.” So, he believes in getting as much coverage as one can all the time. This also helps manage line changes or line adds on set. “You don’t have to stop production to try something else,” exclaimed Stephen. “Even if you had the boom on someone else, there is a 95% chance the wire picked it up,” he divulges. This also allows him to get the sincere reactions and efforts of all the actors, as well as help to cut time on set reshooting, a key advantage when working with a child’s abbreviated workday.

In post, Dean Okrand and Brian Harman benefit, not only from a great quality record in the field, but they also have an open line of communication between themselves and Stephen Tibbo. Tibbo contributes this to producer Chris Smirnoff and associate producer Kyle Weber. They often provide cuts of the episode with the guide track from editorial for him to review. This not only helps him see how his work translates through to post audio, but it allows him to begin drawing a map of possible solutions. Tibbo notes, “We all listen with different ears.”

In my meetings with the sound crew, it became very clear to me that everyone understood that dialogue was king on Modern Family. All three of our mixers can be quoted verbatim in saying, “They want to hear every word.” Tibbo explains, “That’s where the funny is.”

Dean also credits this episode’s dialogue editor, Lisa Varetakis. Dean explains on Modern Family: “You cannot hear any edits. We put a lot of alternate takes in peoples’ mouths,” he discloses and “they are really good at matching performances.”

The effects are also minimal, but key in providing support to the dialogue edit. As this particular episode was taped next to ducks, a lake, and two busy streets, Brian found a perfect balance between them being a good bed for the scene but not poking out as a noticeable element. “For that episode, I put in a lake lap and a distant traffic just to make it smooth,” he explains. “They want the backgrounds, but they don’t want to be aware of the backgrounds,” conveys Dean.

Both gentlemen start the mix in the same room, at the same time, but not in the same place in the timeline. Brian tries to set general background levels of scenes ahead of Dean, building a good base to mix his dialogue against. Brian then uses his time when Dean is tied on to mix hard effects and Foley, as he goes back and forth massaging the dialogue. Brian explains that the mix takes just nine hours; six hours for them and three hours for client review. When they do their playback with the supervising sound editor, Penny Harold, midday, it is often the first time both Dean and Brian hear their full parts married together continuously through the whole show.

The workflow works great, and Dean expresses a clear appreciation for this arrangement. Up until the third season, Modern Family was a one-man mix with Dean solely at the helm. I found this surprising that such a large group of multi-generational cast members would be slated for a single day, one-man mix. Dean explains:

“It is a single-camera show. So, it is not any different than a one-hour drama. But, because it’s a comedy, at one point, the thought was that it is like a sitcom. Sitcoms are traditionally a single-man job .... But,
there is a laugh track that covers everything up and we don’t have to put a lot in it. However, there is no laugh track in *Modern Family* nor any music."

In addition to saving Dean from extra-long days, he attributes a gain in quality to a two-person mix. Dean remembers:

"Before, we had a schedule where, at a certain time I needed to have the dialogue done and at a certain I had to have the backgrounds done. It didn’t matter how complicated the show was, these were times during the day that I had to hit. Now, it is more relaxed. I can hone in on the dialogue. I can make sure the EQs are matched properly."

As I continue to grill Dean and Brian about mixing tips and tricks on “Goodnight Gracie,” I believe I stumbled upon the best mixing advice possible. Dean reflects:

"‘Gracie’ was a really sweet show. It is definitely the kind of show where you want the actors’ feelings and emotions to play. We had to make sure that what we did fostered that. And I think that is more of an innate thing you do. It is not something you do where you think ‘if I change the EQ to do this, it will make Phil sound nicer when he is at the door talking to the woman that the mom wants his dad to date.’ You just mix things in a way that your own emotion helps to bring out that emotion. We are not changing an actor’s performance. I guess we just highlight an actor’s performance. I try to keep that in mind when I am mixing. What is happening on the screen and how they sound."

Brian echoes this in his own work as the effects mixer. "You just feel it when you are mixing it. For instance, the fireworks were not going to be the focus of that scene, but you had to feel them.” Dean declares, “There are no dubbing secrets.” He states simply, “You do the best you can with what you have and you try to make it work.”

Clearly, *Modern Family* succeeds for much of the same reason the show’s characters appeal to the masses. They illustrate, each week, something beautiful as a result of collaboration and communication and working for the betterment of the whole. Tibbo shares this sentiment, and draws a further comparison to CAS, “This is what the Cinema Audio Society is all about.” He concludes: “Let’s help each other out and share our knowledge so we are all better.”
Elliot has a storied relationship with the Eagles, but Tom’s involvement came via another source. “Several of the people involved in the George Harrison project (Living in the Material World) were also on the Eagles project, so that’s how it came to me.”

When working on any project that includes the word “History” in its title, chances are, it will contain archival elements from various points in time that were captured at varying states of fidelity. Elliot discussed how the music elements were delivered to him. “Depending on the age of the material, we would have different amounts of cleanup that needed to be done. It didn’t seem to pose too many issues.” Tom recalls things being a little more challenging on his end on the dub stage. “Obviously, the sources for the archival clips were all over the place, some of them better than others. With regard to the non-interview archival material, it was just about using EQ and compression to make it sound as good and as intelligible as possible. In the case of some of the archival interviews that were not well recorded, Linda Ronstadt for example, I did a lot of work to get them in the ballpark. I don’t like the way broadband noise reduction affects the human voice, so I try to use as little as possible, and accept, as natural, what is obviously a poor archival recording. I use careful notch filtering, EQ, and compression to bring out the best that the track can offer.”

I questioned whether he used one type of source—such as the newer, digitally recorded interviews—as a gauge to match the archival footage against. Tom provided an interesting response: “Some of the older interview footage with the Eagles was better sounding than some of the more recent on-camera stuff. It was sometimes a task to get the recent interviews to sound as good as those 1980 interviews from the dressing room. The more recent on-camera interviews had a fair amount of camera and light noise, so I used notch filters, for the most part, along with EQ and compression to clean them up. They were also shot with radio lavs and, in Glenn Frey’s case, the mic was buried under his clothing and was significantly muffled. Those pieces took some extra work with the EQ.”

Given the varying formats of material, I inquired about approaches to incorporate them into a convincing, multi-channel sound field. Elliot revealed, “In some cases, when a source only existed in mono, like with some of the TV footage, I would create a faux stereo or surround upmix. When we could find material that existed in multi-track format, which was usually 8- or 16-track, I was able to do a more authentic surround mix.”

Asked what it was like going back to mono’s from sessions of decades gone by, Elliot recounted, “You remember that, back then, drums were often recorded in mono—and you could hear everything! These days, you have eight to 20 tracks of drums alone that you have to balance it afterwards. Hearing those older tracks, though, takes you back to whatever stage of life you were at during those times and what you were doing in the studio during those sessions. It was fun.”

Tom described his surround mixing approach on the project, “To me, it is entirely natural for mono dialogue to come only from the center speaker, but in the case of voiceover, for example, I often use divergence as a means to separate it sonically from the other dialogue. Elliot had the massive task of bringing the older, archival mixes into stereo or 5.1. So, a large portion of my time was spent getting the transitions of the music into and out of the voiceover and interviews to play as seamlessly as possible. The mono-to-5.1 aspect was never an issue. It was mostly about finding the right timing to make a smooth transition from loud and up-front to softer under dialogue—and hitting the right levels when doing it.”

Elliot says that, when mixing, he looks at the picture for initial positioning but once mixing, “I typically turn off the screen. You know how they say that if you see something, you can hear it? I do feel that’s the case, so I try to concentrate on the music as a whole without trying to see what I’m trying to hear.”

While most of the re-recording was completed at Soundtrack F/T in NYC on a Euphonix System 5 console, Tom states, “We did a final touch-up pass with Glenn Frey at John Ross’ beautiful Euphonix stage (424 Inc.) in Laurel Canyon, and successfully carried our console automation across the country with us, and used it all.” Tom mixed for an initial end medium of TV and DVD. Afterwards, “I made separate 5.1 mixes for theatrical and festivals as part of my delivery, monitored and adjusted for 85 dbSPL.”

The end result was a well-received project by the fans and the creative community, also earning Tom and Elliot an Emmy for their work.

“Congratulations to you both on your CAS win!”
Sound is more than 50 percent of the film. Sound is just as (if not more) important as visuals. A well-crafted soundtrack can make an average movie great and a great movie amazing. Sound without picture is radio. Picture without sound is surveillance.

You get the point. But with technology encroaching on the planet’s quietest places, along with tighter production schedules, unwanted elements find their way into our production tracks. Now what?

Welcome to the real world.

My name is Bob Bronow and rough audio is my life. I mix Deadliest Catch.

Engine hum in the wheelhouse, engine hum on deck, loud hydraulic machinery, over-modulation, wind, and waves dominate every episode. You could say they’re my constant companions. More accurately, they’re friends that I don’t really like.

Luckily, during Season 4, I received an email from a small company out of Boston. The makers of my favorite vinyl simulation plug-in were introducing a suite of noise reduction plugins and a standalone app. That was my introduction to iZotope RX. I was immediately drawn to screen shots of their spectrogram representation of audio. My head swam with visions of being able to look into a sound and remove only certain things.

I thought this could be what I was looking for. I downloaded the demo and had my credit card out by the end of the day.

It was 2008 when iZotope introduced RX1, giving us a new set of tools for accomplishing the impossible. Five years later, RX1 has grown into RX3 and iZotope continues to set the noise reduction standard, raising the bar with each release. Now, RX has joined the select group of nouns like “Photoshop,” “friend,” and “click” that have become verbs. #RXit!

With so many stories and tutorials showing how to Denoise, Declick, Decrackle, Dehum, and Spectral Repair almost anything, I thought we’d take a look behind the spectrogram and learn more about the birth and growth of RX.

I recently had the opportunity to chat with RX project manager Rob D’Amico and the marketing team at iZotope to get some insight into their flagship product.

Noise has always been with us, and there are other noise reduction products on the market. What was the inspiration to create a new set of tools?

RX 1 was launched at a time when the transferring and archiving of audio material from older, analog storage mediums, to new, digital mediums was happening at a great rate. As people with large libraries of audio content were moving from tape, or perhaps remastering audio from tape or vinyl, so it was that they needed tools to remove the most common problems, namely clicks, pops, and hiss. RX 1 was designed to meet these needs.
RX 2 introduced some of the more intelligent, freeform visual editing tools, and this triggered an ever-expanding trend of audio editors using RX in the audio post production world. As this user story grew, so did the need for specific features and workflow solutions.

RX 3 ultimately introduced a whole host of new features, taking the RX family far beyond its original beginnings, and into a world where it’s fast becoming the essential tool for any music recording/mixing engineer, as well as an audio post engineer. The idea is not to replace the need for recording the best quality audio possible, but to make RX the indispensable tool for those times when you can’t avoid certain problems, or don’t have the time and the budget to re-record.

Fix it in post? Sure, you can RX it. “But please”—to any audio recordist, anywhere in the world, we say—“always do the best job you can in the initial recording stage.”

Have there been any unusual challenges over the course of the development of RX?
How long do you have?!
Perhaps one of the less obvious challenges is establishing effective naming conventions. If you are responsible for any ‘industry first’ DSP, you can’t merely call that feature or parameter the ‘noise-reductionizer-9000.’ Rather, you have to put a lot of thought into how the name might inform the user of what that feature does, make sure it inspires them to use that feature, and allow them to thus be creative.

Audio before and after repairing clipping
Unwanted clicks
After declicking in RX
Hum in background
Hum removed with RX
We now say ‘let me google that,’ and, in audio post, we now say ‘let’s RX it.’ But there are also many hours of hard work behind even the seemingly insignificant names for specific parameters, because we are part of the conversation that’s creating the lexicon and driving the jargon. It’s a constant process of iteration, and there is always room to improve!

**How do you go about designing your GUIs?** There is usually an up-front layer that has most everything you’ll need for quick fixes and a second layer for getting surgical.

Ultimately, it always comes down to user experience. Prior to any development process, we establish a user story … ‘Person Y needs to do thing X to audio Z.’ This then helps us define, ahead of time, certain benchmarks for, not only how the DSP should sound, but what parameters should be included, and what the user experience of using those parameters should be like.

This drives the development, but of course, as we test internally (many of our employees are highly experienced in audio and video post production), and as we open it up to our beta crowd, we iterate and improve on not only the fundamentals of the DSP, but the overall user experience. Things like ‘what color is most comfortable on the eyes after a long editing session?’ or ‘what is the optimum placement of these two sliders to cut down on mouse movement?’

What was your inspiration behind your new Dialogue Denoiser?

The Dialogue Denoiser was developed to provide our customers with an easy-to-use tool for getting noisy vocals, production dialogue, and VO tracks to sound cleaner. The goal was to be able to quickly improve the quality of your audio by inserting the plug-in onto a track for immediate results. Also, to provide the RX standalone application with the ability to quickly apply noise reduction to dialogue/vocal tracks without needing to learn the noise profile first. Having the DSP be adaptive and real time—and zero latency was a priority.

Dereverb 1.0 in the context of RX 3.0 was the removal or reduction of ambience in dialogue, we were continually evaluating the sonic prowess of Dereverb in the context of dialogue recordings that were sent to us from film and TV studios all over the world.

An important piece of the puzzle too, especially when considering the limited options available for dereverberation, was to focus on the ease of use. This did mean that certain, over complicated parameters or visual displays didn’t make the cut, in order to make Dereverb as sonically effective and efficient as possible.

Can you tell us (in layman’s terms) what RX is doing when it analyzes audio?

In simple terms, it’s really very similar to image-based processing. The traditional methods of analyzing an audio waveform still occur, in order to obtain statistics on amplitude, phase, etc., which informs readouts on peak, RMS, loudness, offset, etc. But RX also uses FFT technology to analyze the audio, which is an algorithm that helps draw the spectrogram, displaying audio by time, by frequency and by brightness as opposed to the amplitude values for individual samples in a waveform.

Any Easter eggs you’d like to share?

Sure! Here are a couple:

1. Brush Tool: In order to change the brush size for select-
Clicking on the yellow playhead icon in the window will place the timeline’s play head to that location.

While I know you can’t comment on things in development, how do you see this technology evolving?

As the product manager for RX, our goal is to continue to provide product capabilities that inspire and enable creativity. The RX product line will achieve this goal by improving on existing workflows, and providing industry leading DSP to enhance the quality of our customers’ productions, while speeding up manual, mundane processes which will allow more time for creativity. This is an exciting time to be part of the media industry.

Sure, it would be a wonderful world where ice cream trucks don’t drive by location shoots. A magical place where historic 1880s ghost towns don’t happen to be right next to the interstate. Where police don’t chase bad guys with sirens blaring and airplanes don’t make a sound as they fly overhead...

We can dream.

Until then, there’s RX. •

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I n addition to the 2014 CAS Awards being the 50th for Outstanding Achievement in Sound Mixing, they also marked the 10th Annual Cinema Audio Society Technical Achievement Awards. This year’s production winner was Sound Devices, LLC for their power-packed 633 Mixer/Recorder. Good things do indeed come in small packages (especially when they are things we mixers carry around in a bag!).

I bought a 633 at the end of 2013, and have used it on many jobs, so when I was asked to write about the 633 in the context of it winning this award, I happily agreed.

Some might think the 633 is a strange choice for a technical achievement award since it evolved from an existing product; it is, essentially, a pared-down 664. Indeed, the introduction video on Sound Devices website opens with a 664 being sawn in half to create the 633. In that video, Matt Anderson, Co-founder, President & CEO of Sound Devices, LLC says, “The thing we’ve heard from people over and over again is that they want a smaller and lighter weight unit. The 633 provides that without compromising on any features.”

So, I reached out to Jon Tatooles, Co-founder and VP of Marketing & Business Development for Sound Devices. Tatooles agreed: “That ‘customer input’ is the essence of the 633. Customer requests for ‘recording the mix plus isos’ in a product the size of the 302 (633 is just a bit larger) had been constant for years.” He expanded, stating, “This was universal from customers across all applications [where] our field mixers are used; including single-camera interview/news-magazine, reality and reality style, [and] drama and feature.

“We heard from many drama mixers who wanted a product to use off the cart that gave them 80% of the capabilities they had on the cart. The 664 was designed to be that product, and it has succeeded. But customers wanted a still smaller and lighter product, so the 633 was born.”

In the market for something smaller than my beloved Zaxcom Fusion 12, which had beat out the Cantar and 788t for me in the past), and with more tracks than my long-in-the-tooth 702t, a number of factors sold me on the 633. The build quality, as with all Sound Devices products, is stellar (but now significantly lighter!). I required the ability to write to two different media in the same or different file formats (Yay, redundancy!) and have onscreen metering of all recorded tracks (and with the 633, also the return). The mixer/recorder has six output buses, four of which can be recorded. Another key feature for me is that there is output bus delay (in frames) on all six buses. The user interface is excellent, given its size and that it doesn’t have a touch screen. I also like the speed of access to critical functions and the integrated, customizable sound report. Additionally, the PowerSafe technology addresses concerns I’ve had about closing out .wav files in the event of a power loss.

In the 633 introduction video on their website, Paul Isaacs, Director, Product Development says, “PowerSafe prevents file corruption in the event of total power loss. It has a power reserve up to 10 seconds, which automatically closes files and shuts down the unit.” Matt Anderson characterizes PowerSafe as “a built-in UPS.” Jon Tatooles adds that, “One of the other benefits of PowerSafe is the ability to go from off to power on and recording in about two seconds.”

As much as I appreciate the tank-like, field-worthy construction of Sound Devices products, in the past, I have found them to be on the heavy side. My 442 + 702t weigh more than my Fusion. Not so with the 633. Matt Anderson also states in the intro video, “The chassis is the same as the 664 in that it’s molded carbon fiber. It’s very, very durable. It’s the same strength as if it we made it out of aluminum, but it’s much lighter.”

Jon Tatooles was eager to talk about the user interface, which, in my opinion, is a great improvement over the 7 Series recorders. “Regarding the menu, Paul Isaacs and his team developed the menu structure for the PIX 240i video recorder. That new menu system, designed for camera operators, made it simple and fast to get to every function. While the 100+ menu items on the 788t give you control of a lot of power, the larger screen area on the 633 (and 664) allowed the use of the PIX-style menu to simplify and speed operation. We intentionally didn’t veer from the conventional mixer paradigm of input trim/fader/pan that we first used in 2000 in our 442 mixer. That control topology has proven to work very well for both portable mixers and console mixers alike.”

This article is too brief for a comprehensive list of all of the 633’s features and capabilities. For that, a visit to the website is in order, followed by a trip to your local vender to check out all of the fine choices in mixers/recorders that we are lucky enough to have these days. A CAS Award should certainly put the 633 on your radar, but no machine is right for everybody. We all have different needs and preferences.

So, congratulations to the fine folks at Sound Devices for winning our 10th Annual Cinema Audio Society Technical Achievement Award in Production.
Congratulations to the
CAS 50th Awards Winners

Outstanding Achievement in Sound Mixing for a Motion Picture—Live Action

*Gravity* and the sound mixing team of Production Mixer Chris Munro (CAS); Rerecording Mixers Skip Lievsay (CAS), Niv Adiri, and Christopher Benstead; Scoring Mixer Gareth Cousins; ADR Mixers Chris Navarro (CAS) and Thomas J. O’Connell; and Foley Mixer Adam Fil Mendez

Outstanding Achievement in Sound Mixing for a Motion Picture—Animated

*Frozen* and the sound mixing team of Original Dialogue Mixer Gabriel Guy, Rerecording Mixers David E. Fluhr (CAS) and Gabriel Guy, Scoring Mixer Casey Stone and Foley Mixer Mary Jo Lang

Outstanding Achievement in Sound Mixing for a Television Movie or Miniseries

*Behind the Candelabra* and the sound mixing team of Production Mixer Dennis Towns, Rerecording Mixer Larry Blake, Scoring Mixer Thomas Vicari and Foley Mixer Scott Curtis

Outstanding Achievement in Sound Mixing for Television Series—One Hour

*Game of Thrones: The Rains of Castamere* and the sound mixing team of Production Mixers Ronan Hill (CAS) and Richard Dyer, Rerecording Mixers Onnalee Blank (CAS) and Mathew Waters (CAS) and Foley Mixer Brett Voss

Outstanding Achievement in Sound Mixing for Television Series—Half Hour

*Modern Family: Goodnight Gracie* and the sound mixing team of Production Mixer Stephen A. Tibbo (CAS) and Rerecording Mixers Dean Okrand and Brian R. Harman (CAS)

Outstanding Achievement in Sound Mixing for Television Nonfiction, Variety, or Music—Series or Specials

*History of the Eagles—Part One* and the sound mixing team of Rerecording Mixers Tom Fleischman (CAS) and Elliot Scheiner
With the average Disney animated feature taking 3–5 years to produce, and multiple films happening simultaneously, communication and having a solid team is crucial. The nature of working on a film for that length brings up a unique set of challenges, workflows, and long-term relationships that aren’t seen in the typical live-action film. Gabe Guy (of Walt Disney Animation Studios) and David Fluhr (of Disney Sound) walked us through the sound process and workflow for Disney’s animated features.

**Gabe:** It starts with the script. We would prefer it to progress linearly from script to storyboard and then record the dialogue (so we already have a sense of the action). Sometimes it doesn’t always go that way, and we’re writing, storyboarding, and recording dialogue simultaneously. The storyboard and the dialogue scratch both go to the picture editor, and it’s in their hands—“here’s a bunch of dialogue takes, here’s a bunch of storyboards, turn it into a movie.” The picture editor is changing picture to match sound as much as they are changing sound to match picture. If they like a particular reading, they can just have the storyboard be on the screen longer. Once it starts to take shape, they replace the scratch with production dialogue (again at this point, it’s still storyboards, but they have a much better sense of how it’s playing). Once they get the production dialogue in and they have the storyboards, that’s very close to the locked timing of the final movie.

As it moves down the line (to layout, animation, tech anim [technical animation], and lighting), timing can change. The tech anim might say, “You have it timed this way, but it’d be great if it was four frames longer.” But from there on out, we’re talking in frames. You don’t want to animate anything you’re going to get rid of. Each frame takes a long time to make and costs a lot of money. By the time someone is putting it in 3D, that’s in the movie. So, by the time we get to predubs, the length of the movie is definitely locked. The only thing happening at that point is that shots are getting replaced with a better version of the shot. It’s not rough lighting, it’s finished lighting. We’ve got the final fix in that shot.

Gabe does most of the character recording at the Walt Disney Animation Studios (WDAS) Recording Room, where he engineers as well as handles scheduling for the room. Typically, he uses two mics, and there is a redundant Pro Tools system recording as a backup. They use proprietary software to keep track of takes, and it allows for editors to have the text of the line and take information in Avid.

There can be 10 or more people at sessions—two directors, one or two writers, head of the storyboard department, the producer, editor, production supervisor, production coordinator, PA, the actor, and Gabe. The directors typically sit in the booth, and the rest in the control room. For ISDN sessions, they try to send some of the people out, and the rest listen and watch back at the studio in Burbank. Dialogue recording is
considered “production” during the period where editors are picking takes, putting it in the movie, and then animating to it. Later, if they want to change lines of dialogue, it is considered ADR.

**Dave:** It’s a puzzle sometimes to some folks because it’s all ADR! We have to keep it straight ’cause if the director asks if it’s ADR, I have to know if it’s something new, something they’ve had forever, or if it’s a combo. That can throw that off if we do combos of lines to get the best of both worlds.

At this stage, editorial is also cutting in sound fx.

**Gabe:** Picture and editorial crew are handling the sound editing. They’re cutting in sound fx. They are real sound fx, and we have 500,000 sounds in our library. They’re cutting dialogue, and fx, and anything that goes beyond their capabilities goes to sound design.

During this process, Gabe is also doing in-house temp mixes of the film. About every three months, there is an internal screening of the film to get a sense of where the film is at—whether for story crew or John Lasseter (WDAS’s chief creative officer). For any screenings that take place outside of Disney (a preview for audience reactions, for example), the mix will go to David on Stage A. Once the film is ready for predubs, these previous mixes are only retained as a guide/mock-up, and the soundtrack is handed over to the sound crew.

During this process, Dave may be involved with production meetings or coordinating with the sound supervisor or music team.

**Dave:** I consult with the composer and music editor so we have all of our layouts and concepts and they send me the musical scores. I do that for every film I do—I read the scores, learn where the themes are, and how the orchestration is working, so by the time I get on the dub stage, it’s not a mystery to where things are going and the thread of the music. I go to the scoring sessions as well.

As the mix draws closer, the Avid tracks will be turned over to the sound designers and supervising sound editor.

**Gabe:** The Avid tracks include the dialogue, 16 tracks or so of temp sfx (which are not really temp, because they will make it in the final film). They will take those tracks, spot it for ADR, and we do whatever ADR and group we need. Doc Kane typically does group, because his stage is so much bigger to fit all those people.

When the predub begins, the score has already been recorded. In addition to predubbing dialogue and fx, the mixers have to do a “score temp.”

**Dave:** We do a temp mix, but we’re just interested in how the score is working through the film. It’s fully recorded orchestra, so everybody has to be coordinated.
When we do the score temp, we scale it back to 5.1 because we’re going to take it out for preview to a standard theater, not in Atmos. But the score goes out and gets looked at, and then we know early on how the themes are working through the movie. The producers and directors can also look at it and see what’s working great and what needs a little tweak—such as a little editorial thing for the music. So, it’s a big advantage for the film to be able to see that early on.

It’s not uncommon to be switching between films, since multiple films will be in production simultaneously. For *Frozen*, if Gabe needed to be on Stage A (as fx mixer) for a predub or mix, Brett Voss would fill in at the WDAS Recording Room. Even on the mix stage, the mixers may be switching between films, so the predub dates and mix days on a film may not be happening concurrently.

The stage will get constant picture updates through the dub, as visual fx and final color are worked on. Typically, there will not be any timing changes at this point.

**Dave:** At the predub, usually the dialogue is pretty well-locked. We may change a take or a performance or a word, but if they change something, it’s mostly just the visuals coming up to speed. A lot of times, sound fx are just a placeholder because we don’t know how this fx is going to sync, or where that’s going to land, or the scope of it.

With *Frozen*, the mix was just an extension of the predub, working in the same sessions and continually updating, making changes and fixes, and tweaking the mix. Sections may be skipped, due to incomplete animation, and those sections would be focused on later in the mix. Picture editors are on the stage for all the predubs and the final mix; typically directors only come for the final playback, because they are still working on picture.

One challenge is that there is very little time for foreign mixes, and sometimes the M&E has to be provided at the same time or
before the domestic mix. This is due to foreign release dates, but also needing to cast (actors and singers) and record for up to 50 languages. Luckily, the M&E is fully filled and doesn’t have to be remixed. In fact, they want the foreign to be as close to the domestic as possible.

Dave: I’ll give all the treatments to the foreign division. It’s not just delivering an M&E—it’s all the dialogue treatments so they can use all the same reverbs and delays I used on the domestic dialogues. We want to make the foreign as close to what the directors intended (for the domestic) as possible, so I’ll give them exactly what I used. If I’m in the box, I can give them a template with the plug-ins, and they just use it and the 40 or 50 languages will all have the same treatments. So basically, we just make an fx track—we don’t have to go splitting stems. I’ll make a vocal stem, music stem, and a dialogue stem because of the vocals. All of their films have songs, but the foreign territory may want to localize. So I have to keep the vocals and the background vocals all separate so there is as little remixing needed as possible. Many times the territory will use the English because it’s someone famous, or they don’t want to change it.

Having the same team builds a level of trust and familiarity and also helps when it comes to problem-solving.

Dave: The relationship with WDAS is so good because we’ve done so much together that they know if I’ve got a real problem, I’ll bring it to their attention. Otherwise, we problem-solve so we don’t have to bother them. People appreciate that—they’ve got enough on their plate.

As a sound mixer owned and operated company, our mission from day one has been to do whatever we can to meet the needs of our customers. To further that commitment, starting in December, we will now be open on Saturdays from 9am-2pm. We realize jobs are unpredictable and that you don’t just work Monday to Friday, so neither should we.
Another way to use your SRb receiver

A slim aluminum sleeve with a rechargeable battery pack in each side panel provides over 16 hours of operating time on a single charge. Charging circuitry is built into the rear panel. You can also use your own power source, with the battery power as a backup. Detachable “legs” protect the connectors when the unit is used in a bag system.

One of our engineers said the legs look like they came from Flash Gordon’s rocket ship. Perhaps, but they are certainly functional.

Requires UNISLOT adapter

TRXLA2 100MHZ WIDE DIGITAL RECORDING WIRELESS TRANSMITTER

THE STANDARD IN SOUND, EVOLVED

INTERNAL BACKUP RECORDING
capture quality back-up audio in the most hostile RF environment

NEVERCLIP™
gives you an incredible dynamic range without clipping your audio

QRX200 200MHZ WIDE RECEIVER WITH ENHANCED RANGE AND AUTOMATIC TRACKING FRONT END FILTER

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ENCRYPTED AUDIO
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Brett Grant-Grierson  CAS is grateful to be having another busy year working on *Sons of Anarchy*, *Justified*, and *Mistresses*. Tanya Peal is utility/2nd boom while Chris Diamond joined us for Season 6 as boom on *Sons of Anarchy*. Josh Bower was with us on Season 5 of *Justified* and Season 2 of *Mistresses*. Thank you to Donavan Dear, James Clark, and Robert Sharmen for joining us on *Sons and Justified*. Here’s to another busy year!

Darryl L. Frank  CAS started this year with *Rocks with Wings*, an update to a documentary that he first worked on in 1989. A project that started on 16mm and a Nagra, it was first released in 2001. What a great story about the 1989 championship Navajo basketball team... He also wrapped a pilot for Fox called *Hieroglyph*. It should air at the end of this year. He is looking forward to going to the Lectrosonics and the Ramps site party at the NAB Convention this year and will be returning back to work on the feature *Your Move*, with Robert Davi and Danny Trejo.

Todd Grace  CAS and Edward Carr have been busy in WB Dub Stage 2, having completed the first season of the Fox hit *Sleepy Hollow*. They also completed the second season of *The Carrie Diaries* for the CW, and the seventh and final season of *Californication*, along with an episode of *Shameless* for Showtime. Currently, they are mixing the NBC drama, *Crisis*, the sixth season of *The Mentalist* for CBS, and the second season of *Devious Maids* for Lifetime. The rest of the time, they sleep...

Greetings  CAS membership! Devendra Cleary CAS reporting from SFO Airport Terminal 2. Returning to Los Angeles after shooting five episodes’ worth of San Francisco exteriors for the new TNT series *Murder in the First*. It was a crazy week as Billy King, Chris “Catfish” Walmer, and I hit many recognizable spots on the city. With an average of two company moves a day, it rained every day except Friday. Thanks to local second unit sound mixer Scott Kinzey and boom operator Fred Runner for their work. Also, thanks to local sound utility Dan Jaspar, for filling in. Wishing boom operator Javier Hernandez and Amelia Ann Hagen a successful documentary shoot in Columbia.

See you when you get back! Before starting *Murder in the First* in February, we wrapped up *Mixology* in November with Ken Strain and “Catfish” on the booms. Then in December and January, I had the pleasure of doing some second units as well as filling in for Phillip W. Palmer CAS on *Glee* during its 100th episode shoot. Jessica Bender and Mychal Smith joining me on the 2nd unit days. It was quite a reunion and a joy for me to return and see some old friends. This past weekend while still in San Francisco, I spent time putting the finishing touches on my recent CAS Quarterly article as well as some sightseeing. Here’s to a busy spring for all!

Andy Hay  CAS and his company Proper Post are continually thankful for all the wonderful projects of late. We screened three features at this year’s SXSW—Adam Wingard’s *The Guest*, starring Dan Stevens of *Downtown Abbey*, Riley Stearns’ *Faults*, starring Leland Orser and Mary Elizabeth Winstead, and Michael Johnson’s *The Wilderness of James*, starring Kodi Smit-McPhee and Danny DeVito. All were very well received and coming to theaters soon. Currently, we have in theaters: Drake Doremus’ *Breathe In*, starring Guy Pearce and Felicity Jones, *Better Living Through Chemistry*, starring Olivia Wilde and Sam Rockwell, and Evan Lewis Katz’s *Cheap Thrills*, starring Pat Healy and Ethan Embry. Sound supervision and design begins now on the Charlie Kaufman stop-motion animated feature *Anomalisa*, which is looking absolutely breathtaking. Also, we are happy to report that our Hulu show, *Behind the Mask*, was recently nominated for an Emmy for outstanding new approach in sports programming. Season 2 is coming to your TV later this year!

Buck Robinson  CAS is continuing on with a nice run of work. This past summer, he was excited to see two of the films he production sound–mixed in the top spot at the box office on their respective opening weeks. The first was *The Purge*, a thriller starring Ethan Hawke, for which Robinson mixed all of the reshoots and additional photography. Booming for him was Cole Bluma. Cable duties were shared by Charlie German and Ted Hamer. Buck was the production sound mixer on a horror feature which topped the opening box office a few months later, *Insidious: Chapter 2*, directed by James Wan. Again, Cole Bluma boomed and Charlie German cabled. Following the two movies, the trio of Robinson, Bluma, and German returned to series television to do *Surviving Jack*, a Bill Lawrence/Justin Halpern produced–midseason comedy for FOX, starring Chris Meloni. Additional boom operator and cable man were Ted Hamer and Michael Kaleta. Then, it was straight from wrapping that show to doing the back half of Season 1 on the TV drama *Twisted*, produced and directed by Gavin Polone for ABC Family Channel. Buck Robinson mixed, Cole Bluma boomed, and Charlie German did utility sound. They are currently working on the VH1 basketball drama series *Hit the Floor*, starring Dean Cain. Between these projects, Buck was grateful to Steve Morrow CAS for additional photography days on the movie *The Vatican Tapes*, and Beau Baker CAS for second unit work on *Grey’s Anatomy*.

Re-recording mixers Larry Benjamin CAS and Kevin Valentine have been busy mixing Season 5 of *The Good Wife* at both Smart Post Sound in Burbank and Post Haste Digital in Culver City. They’re also mixing Season 9 of *Bones* at both Smart Post Sound in Burbank and Lotus Post in Santa Monica. They recently mixed *In My Dreams* for Hallmark Hall of Fame at Smart Post and finished it at The Lot on Stage A. Larry and Kevin also wrapped an indie feature called *In Your Eyes*, written by Joss Whedon, debuting at Tribeca, mixed at both their home studio and finished at Smart Post Sound.

Kevin Hill  CAS reporting from Studio Unknown in Baltimore, Maryland. First off, I must say what a pleasure it was attending the CAS Awards Ceremony back in February and meeting and mingling with such great people. We are working on ABC’s brand-new fantasy-based reality series, *The Quest*. Coming in June! We are also very pleased to announce that Lionsgate Films has acquired North American distribution rights to *Exists*, a new horror film from *Blair Witch Project* director Eduardo Sánchez. The film played to a sold-out midnight screening at SXSW in Austin, Texas. We also just wrapped mixes for a new
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INPUT PANEL
Woody Woodhall CAS has had an extremely busy couple of months supervising sound editing and re-recording mixing. Woody is currently posting the fifth season of Mystery Diners for Food Network, the first season of Thingamabob for History Network, the first season of Celebrities Undercover for Oxygen Network, the second season of Container Wars for truTV and the first season of MTV’s House of Food as well as the feature film How to Be an Outlaw, produced, directed, and starring the hilarious Larry Hankin. Woody was also supervising sound editor for the SyFy special presentation My Big Fat Geek Wedding. Additionally, Woody Woodhall’s professional organization, the Los Angeles Post Production Group (LAPPG), continues its stunning growth. The LAPPG is a group devoted to all things post production with an expanding worldwide member base. Membership is free and all CAS members are invited to join. Besides monthly meetings, LAPPG hosts a series of “LAPPG Presents” events. In January, “LAPPG Presents” offered a networking mixer and film festival panel moderated by Jon Gann, festival director of DC Shorts and CINE Golden Eagle. Other panelists included the festival directors from New Filmmakers LA, the Downtown Film Festival, Holly Shorts, LA Comedy Shorts, and the Hollywood Black Film Festival. It was an exciting night of networking for filmmakers and post professionals with lots of inside film festival information. To learn about more upcoming events got to http://lappg.com/.

Matt Vowles CAS is finishing up supervising and mixing Tracers at Warner Bros. on Dub 12 with Myron Nettinga on FX. He also completed foreign version of The Lego Movie on Dub 12. Additionally, he recently completed indie features Cheap Thrills, Thou Wast Mild & Lovely, supervised by Martin Hernandez, and documentary SlingShot at his own dub stage, The Manor in Sherwood Forest. He also had fun mixing foreign Atmos versions of 300: Rise of an Empire over at Dolby and is about to embark on the third season of Longmire.

Tom Curley CAS is very proud to see Whiplash hit a grand slam at Sundance, Honeymoon premiere at SXSW Festival, and to know Electric Slide is premiering at Tribeca. He also mixed Home with Tony Max on boom and Mike O’Heney on utility in March.

Jon Ailetcher CAS has been busy busy busy. After finishing Season 1 of Trophy Wife for ABC, with Javier Hernandez swinging the boom and Jason Brooks at utility, Jon then went to an ABC pilot called The Mason Twins, with Rob Cunningham booming and Mike Anderson handling utility. Immediately following a quick vacation, Jon was back onto another ABC pilot, starring Anthony Anderson and Laurence Fishburne with the crew of William Munroe and Chris Silverman. As this pilot ended, Jon, William, and Chris moved over to a new USA Network comedy called Benched.

For Ronan Hill CAS, last year ended with Game of Thrones Season 4 which will air on HBO April 6. This year started with his second season on The Fall, a psychological drama being shot in Belfast, N. Ireland, starring Gillian Anderson and Jamie Dornan for BBC TV (Netflix USA). Also, Starred Up, a feature film he mixed last year, shot in a disused prison in Belfast, is currently being released across the UK and will be screened at Tribeca April 20. The highlight of the year was attending the CAS Awards. He was truly honored to be presented with an award for Game of Thrones. It was also great meeting old and making new friends.

Gary D. Rogers CAS and Dan Hiland CAS finished mixing the fourth season of The Walking Dead for AMC, and wrapping up the third season of Hart of Dixie, and the second season of Arrow for the CW. They are gearing up for David Nutter’s pilot Flash for the CW and The Leftovers series for HBO starting in April.

Greg Watkins CAS and Tom Marks CAS are wrapping up the first season of Gang Related at Warner Bros., and recently completed Deliverance Creek for Lifetime.

David Abrahamsen CAS finished Mixing Season 2 of Spoilers with Kevin Smith and had fun working together with Kim Ornitz CAS. It is always fun working with good people that also happen to be friends.

David Barr-Yaffe CAS is back, mixing Season 3 of ABC Studios production of Perception for TNT. Holding the stix this season are Aaron Grice and Sara Evans. Glad to have them aboard.

Ken Teaney CAS and Alec St. John CAS of Todd Soundelux have already finished mixing full seasons of Back in the Game for ABC, Episodes for Showtime, and Looking for HBO. We are now mixing Season 7 of Mad Men for Matt Weiner and AMC. Ken Teaney and Marshall Garlington completed mixing the IMAX movie Journey to the South Pacific for MacGillivray/Freeman Films on Stage 2 Todd Soundelux, Hollywood.

Michael Keller CAS and Mike Prestwood Smith just finished Divergent for Lionsgate.

Gavin Fernandes CAS has put the finishing touches on Helix for Sony/SyFy at Premium Sound. A gooey time was had by all. Love Project, by director Carole Laure, will be next at AudioZone and Technicolor, then another feature, Dr. Cabbie, at Vision Globale.

Richard Lightstone CAS is set to begin the series Kirby Buckets in May with boom operators Jeff Norton and Michae Mesirov.

Steve Morantz CAS and crew are enjoying a busy spring and summer. We just completed Season 6 of Parks and Recreation, and are currently working on the the pilot The Pro, reuniting with Rob Lowe. We are also starting the TNT series Legends. With me are boom operators Adam Blantz and Craig Doolinger for Parks and Recreation, Anthony Ortiz for The Pro and Scott Solan and Dirk Q. Stout for Legends, and as always, Mitch Cohn as utility.

Philip Perkins CAS is currently mixing Metal Man, On Beauty, and Oakland Originals for PBS. He also mixed the new Lunch Love Community series for PBS and Web and assisted with the Web and TV mixes for the concert film Chuck Prophet’s Temple Beautiful.

Frank Stettner CAS is working on a pilot, Dangerous Liaisons for ABC, directed by Taylor Hackford. His crew is Sam
Perry, boom operator, Toussaint Kotright, sound utility, and Egor Pachenko, playback mixer. The whole crew, plus Laurel Bridges as alternate boom, will roll right onto *Boardwalk Empire*, Season 5.

Absolutely wallowing in the fact that we’re on a show that has yet to have a corpse in a dumpster, **Jay Patterson** CAS with Doug Shamburger and Tom Pinney as first and second sticks, are on *Extant*, the CBS/Amblin Entertainment ‘direct to series’ project for CBS, starring the wonderful Halle Berry in her first television role.

**Eric Batut** CAS is mixing *Warcraft*, directed by Duncan Jones for Legendary Entertainment until the end of May. Millar Montgomery is boom operator and Simon Bright is sound assistant.

**Bob Bronow** CAS is currently mixing the tenth season of *Deadliest Catch*. He also recently completed the theatrical mix of an updated cut of the documentary *The Wrecking Crew*.

Todd Langner and **Karol Urban** CAS are coming to end of mixing Season 10 of ABC’s *Grey’s Anatomy*. Karol Urban and Steve Urban are mixing the first season of AMC’s *Game of Arms*. Additionally, they completed mixing Season 2 of the webisode series *My Gimp Life*. Karol and Steve are also proud to hear of the festival success and acceptance of a feature, *BFFs*, which has now screened at Santa Barbara Film Fest and Vail Film Festival and is slated to continue a national festival circuit starting with Palm Beach and Omaha Film Festivals. Karol is also continuing her single (wo) man mix work and got to use her second language this quarter on the mun2 series *Reinas de Realty*.

**Brian R. Harman** CAS is mixing at Smart Post Sound with Dean Okrand finishing up Season 5 of *Modern Family* for ABC, Season 2 of *The Neighbors* for ABC, and starting Season 3 of *Switched at Birth* for ABC Family. He is also mixing the final season of *Sons of Anarchy* for FX with Mark Hensley at Smart Post Sound.

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Chris Welcker, boom, Michael Koff, CAS and Charlie Mascagni getting ready for a day of stage work in New Orleans on the set of *Kidnapping Freddy Heineken*.

Daniel S. McCoy, CAS mixing Season 6 of “Web Redemptions” for Comedy Central’s *Tosh.0*.

Michael Playfair, CAS, production mixer, Arjay Joly, boom operator, and Val Siu, sound assistant (wiring wiz), finishing up an Alberta winter marathon on *Fargo*.

Michael Kearns, boom operator, on the set of *Reign* during a snow storm.

Tamas Csaba, CAS and his crew, Gabor Mate and Milan Tuska, packing up to start the new movie *Fallen*.

Dirk Stout, Frank Zaragoza, CAS, and Susan Moore-Chong, CAS are rapidly closing in on the end of Season 9 of *Bones*. Daily affirmation is the key to success!

Ken Teaney, CAS’s personal Journey to the South Pacific.
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