



Standards and compassion

ST. PEREGRINE'S CHAPEL at Mission San Juan Capistrano is a little room off the larger Serra Chapel. Originally the baptistry, the room is now dedicated to St. Peregrine, the patron saint for cancer sufferers. When I visited on New Year's Day, I heard executive director Mechelle Lawrence Adams's voice on the audio guide explain that in 2005 she noticed, "more and more people were walking the grounds that I noticed were sick. Along my walk, I would encounter people that were on their way to St. Peregrine's Chapel, that were suffering. . . . I learned that we needed to make sure that our interpretive voice of the site celebrated the importance of the Mission . . . as a place that people of all walks of life, all economics, all faith traditions, can find some sort of comfort."

That compassion struck me. A few days before I had seen Laura Poitras's *All the Beauty and the Bloodshed*, a motion picture about Nan Goldin, a biography that spans two crises that affected Goldin: the AIDS and opioid addiction epidemics—crises that were made worse or created by a lack of compassion.

Nan Goldin's work in the late 1970s included photographing the quotidian lives of her artist friends, many of whom would soon be dead or dying from AIDS. The Reagan Administration didn't care about people with "the gay plague." In 1982, Larry Speakes, Reagan's press secretary, when asked by a reporter if the President was tracking the spread of AIDS, brushed off the question with, "I don't have it, do you?" People in power didn't care about people with HIV.

ACT UP's demonstrations, which included blocking Wall Street and putting a giant condom over Jesse Helms's house, eventually brought the attention of powerful people to the epidemic.

The opioid addiction epidemic wasn't simply apathy; it was a revenue stream for prescription drug makers. Purdue Pharma aggressively marketed OxyContin, downplaying the risks of addiction and abuse. Nan Goldin herself became addicted to OxyContin when prescribed it after surgery, and almost died from a street drug she turned to when OxyContin wasn't available. Purdue Pharma and its Sackler family owners were sued for billions of dollars for their part in the US addiction epidemic, but Goldin, the artist, took a different tack, starting an advocacy group, PAIN, to pressure arts organizations to refuse Sackler money and to erase the Sackler name from their institutions. PAIN adopted many of the tactics of ACT UP, with die-ins and demonstrations. On March 10, 2022, three Sackler family members sat for a two-hour Zoom hearing in federal bankruptcy court as people described how OxyContin wrecked their lives and killed their loved ones. The Sacklers spoke to confirm their presence on the Zoom, but did not respond to the testimony. This was not compassion. This was denial.

"Compassion" and "standards" seem an unlikely pairing, but compassion has to be at the heart of standards creation—and at the heart of a society that works for all of us. "Compassion" is an awareness of the suffering of another, another's need, coupled with

the wish to relieve it.

All our ESTA standards are written to address problems. Maybe the problem isn't called "suffering," but it's a problem that is making doing shows or running a business difficult, needlessly expensive, or dangerous. What follows is an update drawn from the working group meetings in January for a selection of the active projects in the Technical Standards Program.

Control Protocols Working Group

ANSI E1.59 – 2021, Entertainment Technology – Object Transform Protocol (OTP), was developed to coordinate lighting and scenery motion. *ANSI E1.59* obviates the need for companies to invent their own protocols for lighting to track moving scenery, but with virtual and mixed reality productions, the industry now needs to coordinate cameras and virtual elements, whether those virtual elements come out of a media server or are generated by a real-time game engine.

ANSI E1.59 – 2021 is published, but we now have a new project, *BSR E1.59*, to add hooks for camera metadata and controlling virtual elements. There is informal coordination with the Society of Motion Picture and Television Engineers' "Rapid Industry Solutions" project. As that name suggests, this SMPTE group is working on quick solutions for virtual production—shows with real actors but LED screen studio environments. *BSR E1.59* will complement that by creating a standards foundation.

Event Safety Working Group

The Event Safety Alliance (ESA) was formed after the stage collapse at the Indiana State Fair in August 2011, the third weather-related outdoor stage roof collapse in North America in three weeks. The ESA created a guide for the safe management of events, *The Event Safety Guide*, based on a UK document, *HSG195*, the "Purple Guide." *The Event Safety Guide*, first published in 2013, is updated from that 1991 document and is for North American events.

The Event Safety Working Group is a partnership between ESTA and the Event Safety Alliance to update chapters from the *Event Safety Guide* and turn them into American National Standards. As American National Standards, it will be harder for people to ignore their good advice with the defense "Who knew?" The draft standards in public review as I write this are *BSR ES1.17, Electrical Safety and Lighting*, and *BSR ES1.2, Event Safety – Planning, Management, and Major Incident*.

Floors Working Group

The Floors Working Group was created after comments from Actors' Equity about a Rigging Working Group project that had stage floor stiffness requirements. That RWG project was abandoned, but the comment suggested that the peculiar requirements for performance

floors needed to be addressed. Sometimes we want a show deck to be bouncy or slippery, but sometimes not. The working group was formed to deal with floors, but it now also deals with the lack of floors. (It's a stretch, but it works.)

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ANSI E1.46 – 2018, Recommended Practice for the Prevention of Falls from Theatrical Stages and Raised Performance Platforms, is a “lack of floors” standard. Stories of someone walking off the front of the stage, into an open trap, or off the back edge of seating platforms are common. This standard attempts to reduce the frequency of those incidents by requiring a risk assessment of the hazards present in a venue 24/7, with appropriate safety measures adopted as the venue uses change. It's reasonable to have a guardrail across a stage apron when a house is dark, but probably not during a performance. Fall protection is needed during the show. What will work, what is reasonable will depend on the show and who is on stage. *E1.46* gives guidance on this.

ANSI E1.46 – 2018 is approaching its five-year anniversary, at which point ANSI requires us to reaffirm it (no changes), revise it, or withdraw it. The standard seems to work in that none of the recent fall liability lawsuits have involved venues where it was used. In those cases, this standard comes in as, “Did you know you should have done this?” Reaffirming it would be reasonable, but the working group might want to make revisions. A decision at the next meeting!

Fog and Smoke Working Group

Two of the Fog and Smoke working group's active projects are *BSR E1.14, Entertainment Technology – Recommendations for Inclusions in Fog Equipment Manuals* and *BSR E1.23, Entertainment Technology – Design and Execution of Theatrical Fog Effects*. *ANSI E1.14* was written to address concerns of ESTA dealers who were selling equipment with manuals that essentially said, “Fill with fluid. Plug in. Wait for light to go out. Make fog!” That's seriously deficient. *ANSI E1.14 – 2018* is at its five-year anniversary; the working group is planning to reaffirm it, but it is in public review now—even as I type—so people can tell us of errors or serious omissions.

ANSI E1.23 – 2020, Entertainment Technology – Design and Execution of Theatrical Fog Effects, is being revised to add a requirement for a summary safety statement. The standard originally was written to guide people in planning fog effects

Richard Nix becomes ESTA's next Technical Standards Manager

ESTA announces that Richard Nix has been named the new Technical Standards Manager for ESTA's Technical Standards Program (TSP). His predecessor, Karl Ruling, will remain in a supporting role.

Nix's involvement in the development of standards spans decades. In early 1994, he was already actively involved in the USITT Rigging Standards project when discussions began about the TSP and its mission. He immediately came on board as a volunteer and has been, as he describes it, "a rather hyperactive standards evangelist ever since," having led multiple tasks groups over the years before joining ESTA as Assistant Technical Standards Manager in May 2019.

Former Technical Standards Manager Ruling will now be Senior Technical Standards Manager. "I am stepping back so that Richard can step forward, and I am sure he will excel. Richard has been involved in the TSP for as long as I have, and with other standards organizations even longer." Ruling will continue to write the TSP newsletter, *Standards Watch*, and will remain as the Technical Editor for *Protocol*, ESTA's quarterly technical journal.

Of his dedication to the program, Nix said, "My ongoing gratification comes from experiencing firsthand how our standards evolve in step with new technologies, or with changes in mature technologies. There are several cases where our standards have influenced those changes, too. But even that doesn't outshine being an integral part of a group of a few hundred dedicated volunteers who have literally changed the face of our industry, for the better, over the last 28 years. I am looking forward to continuing that process."

ESTA's TSP comprises over 350 volunteer experts who devote time and knowledge to drafting American National Standards for the benefit of the whole entertainment technology industry. The TSP is always interested in any new member who wishes to join the group (see sidebar on page 37). Information on joining the TSP, requesting new standards, or becoming an Investor in Innovation is available at <http://tsp.esta.org/getinvolved>.



Richard Nix



Karl Ruling

and to create a detailed effect plan that will quiet an AHJ asking, "How do I know you know what you are doing?" However, just before the pandemic shutdown, I received an email from an Equity representative asking me if it was okay for a show to use a glycol fog machine with plain water as the fluid. The machine's instructions said to use the manufacturer's fluid, not water. I said the original fluid is glycol and water, with glycol being the part people worry about. Pure water might not be good for the machine, but it won't be a risk to actors. Problem solved for Actors' Equity, but only for that show.

ANSI E1.23 allows an effect designer to create custom fog machines, modify machines, or use different fluids as long as they take on the responsibilities of a fog machine manufacturer and detail why what they are doing is safe. That multi-page documentation is great for satisfying a suspicious AHJ, but it's not good for a stage manager, who needs assurance more solid than, "It's okay, Margot." A short, written summary should do—but we'll see when this revision is in public review. Look for it.

Photometrics Working Group

The two PWG projects I'd like to highlight are the reaffirmations of *ANSI E1.9 – 2007, Reporting Photometric Performance Data for Luminaires Used in Entertainment Lighting*, and *ANSI E1.25 – 2012, Recommended Basic Conditions for Measuring the Photometric Output of Stage and Studio Luminaires by Measuring Illumination Levels Produced on a Planar Surface*. They are in the process of being reaffirmed now.

The two standards came out of the industry's shake-up when ETC introduced the Source Four. That luminaire was marketed with an output called "cosine distribution" by some and "flat field" by others. This was pitched as the proper distribution for an ellipsoidal reflector spotlight. This gave competitors heartburn. The Source Four used one particular lamp and was designed to provide a particular output distribution. Competing products, such as the Altman 360Q, could use a variety of lamps; the output distribution changed with different lamps. Niethammer and Robert Juliat spotlights with condenser optics weren't ellipsoidal reflector spotlights at all, but their flat fields put them at odds with the idea that a spotlight should have cosine distribution. What should a spotlight's distribution be?

The solution was *ANSI E1.9*, which doesn't call any distribution right, but does require the publication of iso-illuminance graphs so a prospective buyer can see what they're getting. This also works for cyc lights, which look really weird when the output is published as candlepower diagrams, but look reasonable when shown as light shining on a wall.

Shining a light at a wall is what most people in the entertainment industry do to see what a light looks like. Entertec, in developing the Source Four, shined prototypes at a screen and used a video camera to capture the levels of illumination. It works, but "shining a light at a wall" was not the photometry professional testing labs were doing in 1990. They were using goniophotometers; the IES testing standards supported that method. *ANSI E1.25, Recommended Basic Conditions for Measuring the Photometric Output of Stage and Studio Luminaires by Measuring Illumination Levels Produced on a Planar Surface*, was written to lay down basic testing conditions for shining a light at a wall. It does not specify the meter or video camera to be used because people in our industry will probably use whatever they have, but it gets the testing conditions roughly comparable.

Rigging Working Group

It's a minor part of the Rigging Working Groups portfolio, but *ANSI E1.8 – 2018, Entertainment Technology – Loudspeaker Enclosures Intended for Overhead Suspension—Classification, Manufacture, and Structural Testing*, was discussed at the last RWG meeting, and fits with my “solving a problem” theme. The first edition was created almost 20 years ago at the urging of working group members who made loudspeaker rigging systems. They'd get sucked into any lawsuit if the loudspeakers suspended from their systems broke and rained hardware on people. *ANSI E1.8* gives minimum structural requirements, so this won't happen. It says nothing about the sound quality of the loudspeakers—that's not our concern. It comes up for reaffirmation, revision, or withdrawal later this year. Someone at the meeting on January 16 asked why we have this standard. “Why don't we get rid of it?” Several voices on the WebEx piped up saying, “No. I just used it!”

ANSI E1.43, Entertainment Technology – Performer Flying Systems, is now open for revision. Work on the first edition started when the performer injuries for *Spider-Man: Turn Off the Dark* on Broadway got a lot of bad press. New York State Assemblyman Rory Lancman, Senator Eric Adams, and Assemblyman Richard N. Gottfried held a press conference in front of the Foxwood Theater about the injuries, with the latter saying, “Standards and procedures need to be strengthened.” *ANSI E1.43* was approved as an American National Standard on 12 February 2016. It's now being revised, partially because it's well past its approval date, but also to make it easier, less costly to use while not compromising safety.

Stage Machinery Working Group

This working group was originally the “Stage Lifts Working Group.” It was created to write an American National Standard for orchestra pit lifts only, a machine not covered by building codes in all municipalities. Early meetings on *ANSI E1.42 – 2016, Entertainment Technology – Design, Installation, and Use of Orchestra Pit Lifts*, had anecdotal tales of building inspectors insisting on an enclosed hoistway with doors at the top and bottom, just as on a passenger elevator. *E1.42* was revised in 2018. That edition is now being revised to include just about any kind of lift found on stage, except those already covered by *ANSI/ASME A17.1* and *ANSI/ASME A18.1*.

The scope of the working group is larger now, so it has a new name and two draft standards for stage machines: *BSR E1.71, Powered Curtain Machines*, and *BSR E1.72, Powered Floor Machinery*. The first covers machines designed to move curtains that don't easily fit into the scope of *ANSI E1.6-1, Entertainment Technology – Powered Hoist Systems*. *BSR E1.72, Powered Floor Machinery*, covers a range of things that move in the floor: wagons, turntables, treadmills, slip stages, and trap covers. These standards are being written to help engineers design safe systems and to ease the acceptance of smaller stage machines in North American.

A call for members

You can become part of the team of people working to make the entertainment industry simpler, safer, and more profitable by joining a working group. The following working groups are looking for new voting members in these particular interest categories to help balance the interests in the working group.

- **Control Protocols:** General interest.
- **Electrical Power:** Custom-market producers, designers, dealer/rental companies.
- **Event Safety:** Equipment providers, performing artists, insurance companies.
- **Floors:** Custom-market producers, dealer/rental companies, designers.
- **Fog and Smoke:** Dealer/rental companies and mass-market fog equipment manufacturers.
- **Followspot Position:** Dealer/rental companies.
- **Photometrics:** General interest, dealer/rental companies.
- **Rigging:** General interest.
- **Stage Machinery:** Designers, users.
- **Weapons Safety:** Equipment producer (weapons or projectiles), dealer/rental companies, insurance providers, designers.

“Interest” means how the work of the group affects your livelihood or your health, and not that you find it way-cool. The interest categories are relative to how you are materially affected by the subject matter of the working groups. Definitions for the interest categories can be found on the second page of the working group application forms. The short-cut to those forms is <http://estalink.us/evt6b>. If you see any working groups that fit your interests and expertise, and you are in one of the under-represented categories, please join.

Weapons Safety Working Group

“Alec Baldwin Sued by Three *Rust* Crew Members for ‘Blast Injuries’ in Shooting” was the headline on the *Variety* website on February 27, 2023. Baldwin pulled the trigger on set in October 2021, killing cinematographer Halyna Hutchins and injuring director Joel Souza. This was a costly mistake with effects that will drag on for years.

There are lots of good rules to follow to ensure people aren't shot on set, but to whom and what these rules apply is fragmented. The Weapons Safety Working Group had its first meeting in January to draft an American National Standard or series of standards to guide people in using prop firearms and weapons safely, whether on a motion picture set or theatre stage. An American National Standard might be harder to ignore than a safety bulletin, and should have standing everywhere in the USA, perhaps avoiding a patchwork of incompatible local laws.

The working group is refining the project. People involved in re-enacting Civil War battles often bring their own rifles. Should amateur blue and gray armies be in the scope? That would be a management job! ■

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