

Happy Cabrini Day

ESTA'S TECHNICAL STANDARDS PROGRAM held eight task group meetings, ten working group meetings, and 64 hours of Control Protocols Plugfest, on October 4 through 8, the five days before the holiday Yahoo lists as Columbus Day, three different variations of Indigenous People's Day, and Cabrini Day. In my youth, the holiday was simply "Columbus Day," celebrating the arrival in the Americas on October 12, 1492, of Christopher Columbus's expedition to find an alternative route to eastern Asia. That's a source of pride in Italian-American communities, but in recent decades the stories about Columbus's expeditions often include rape, torture, and the collapse of native populations. "Indigenous People's Day" honors those populations and counters the narrative that the western hemisphere was an uncivilized wilderness before Columbus arrived. Cabrini Day changes the narrative. Frances Xavier Cabrini House Bill 20-1031, passed in 2020, replaced Columbus Day as a legal holiday in Colorado.

Frances Xavier Cabrini was born in Italy in 1850. In 1880, she founded the order of The Missionary Sisters of the Sacred Heart in Rome to serve the poor and those on the margins of society. In 1889, Mother Cabrini came to the United States to serve immigrants in Manhattan, the Bronx, and Brooklyn. Her work expanded. She set up schools, orphanages, and hospitals in California, Colorado, Illinois, Louisiana, Mississippi, New Jersey, New York, Pennsylvania, and Washington. As the Cabrini Day website says, "Cabrini Day affords us a chance to reset and celebrate a holiday dedicated to things that unite us, encourage us to find common ground, and call us to act with kindness and compassion in our community."

Cabrini Day replaces a holiday celebrating conquest with a holiday celebrating compassion. But, are we to be compassionate only one day of the year—or a few days if we add Christmas, Eid al-Fitr, Holi, Shavuot, Vesak, and other special days? I remember as a child listening to an end-of-year radio broadcast wishing listeners peace and happiness and then going on to cover the arms race with the Soviet Union. It puzzled me. Was it beyond human power to spread the good we wished each other at the end of the year through a few more days or months?

Sister Cabrini was a saint; participants in ESTA's Technical Standards Program are not, but I am often struck by the generosity and kindness of people in working group meetings. There are



Mother Cabrini

instances of grand-standing and eye-rolling, but, in general, people work together amicably to arrive at standards that are adequate but not onerous for solving problems in the entertainment community. It is possible to push something through with one vote more than 50% in favor, but if approval is that low, the standard probably will do nothing in the field. Our standards are voluntary standards. With few exceptions, our standards do not become regulations enforced by municipal or state authorities. They have to represent the industry's consensus of reasonable advice—obvious to anyone skilled in the art—so only a fool would ignore them.

One-hundred eighty working group members attended the TSP working group meetings held online and in person at the Marriott Dallas/Fort Worth Westlake in Texas from October 5 through 8. In addition, there often were visitors, people taking a break from the Plugfest going on elsewhere in the hotel. The working groups moved a lot of projects forward. Here's an update on some of them from some of the working groups that met. It's a short list constrained by space.

Control Protocols Working Group

The Control Protocols Working Group had forty-nine members and two ESTA staff attending the meeting on October 7, along with two visitors. A motion was made to accept one draft standard as an American National Standard, while motions were made to place three other ones—or six, if you count them differently—in public review.

The one being voted on to be accepted as an American National Standard is BSR E1.37-5, General Purpose Messages for ANSI E1.20 (RDM). It was offered for public review six times, but this last review resulted in only editorial changes, nothing that changed mandatory requirements. The vote will be decided by letter ballot, a method that allows us to record votes and comments in detail.

Two of the draft standards in public review are interrelated. BSR E1.68 Recommended Practice for Evaluating DMX512 (ANSI E1.11) Interoperability, is a draft standard written to help people see if a DMX512 device is likely to work correctly with other DMX512 devices. It doesn't nail down ALL that's needed to comply fully with the ANSI E1.11 DMX512 standard, but it does identify the things that will make something not work or work erratically if done wrong. Writing E1.68 required a careful reading of the foundational ANSI E1.11 DMX512 standard—and some of its requirements are impossible to meet! So, the venerable DMX512 standard is being revised, and it is now in public review.

The draft standard in public review generating the most email in my inbox is E1.73, Uniform Device Representation, which has four parts. It's a suite of standards providing a framework by which manufacturers of entertainment equipment can communicate descriptive information about devices and their states, including parameters and physical properties, and the metadata needed to describe them. This public review includes the first four parts of the suite: E1.73-1 is the Core Document; E1.73-2 contains the Core Definitions for E1.73-1; E1.73-3 contains Intensity/Color Definitions for E1.73-1; and E1.73-4 contains Motion Definitions for E1.73-1. This is what the draft covers now, but projects for two additional parts were approved, and there are members in the CPWG who think E1.73 can become the standardized way to describe the feature-set of many non-lighting products, including stage machinery and fog machines, to their controllers. Anyone who makes devices of any type needing control for the entertainment industry is invited to review BSR E1.73 to see if it covers their needs.

Electrical Power Working Group

Twenty-one members and one ESTA staff person attended the Electrical Power Working Group meeting on October 6. No draft standards were moved into public review or to be adopted as an American National Standard, but there was significant discussion about BSR E1.80, 19-pin connector pinout assignments, a project to develop a standard for what pin on the ubiquitous 19-pin circular connectors is for what conductor, but it led to a much larger discussion. There is a common practice for what pin does what, but no standard, which complicates specifying equipment, which is why the E1.80 project exists. Setting a standard describing what is done is conceptually simple, but doing it in a way that harmonizes with the language of the National Electrical Code and UL standards is not so easy. Furthermore, these connectors are often used with break-out assemblies feeding multiple connectors, which are required by the 2023 National Electrical Code section 520.68(D) to be "listed" assemblies; these break-out assemblies are generally not listed assemblies, and there is no UL standard obviously suitable for testing them so they can be listed. Steve Terry and Wendy Russell of ETC have been meeting with UL engineers to discuss how

requirements for listing special-purpose multi-circuit cable system breakout assemblies can be incorporated into a UL standard—but an important first step in this would be having standardized pin assignments, the scope of BSR E1.80.

Event Safety Working Group

Twenty-six members (including one ESTA staff person) and one visitor attended the working group's meeting on October 7. One draft standard was moved to public review, and one new project was adopted. The draft in public review is BSR ES1.17, Event Safety – Event Lighting & Electrical Safety. There are oodles of electrical safety standards, but this standard gives a big-picture view for event organizers of what's needed for electrical safety during the installation, operation, and dismantling of event electrical systems and equipment. It also provides guidance on minimum requirements for egress lighting systems used for special events, which can be complicated by being staged outside or in unconventional venues. (How do you light a parking lot that is normally a cow pasture?)

The new project is ES1.41, Event Safety – Material Handling. There are heavy, awkward loads that have to be moved in setting up or striking an event. A lot of the advice that works for general industry or even building construction does not fit well with what event workers have to do.

Floors Working Group

Eleven people, including one ESTA staff member, attended the Floors Working Group meeting on October 6. The active project in that group has been to create a standard for wire tension grids, BSR E1.76. No public review comments were received during the last public review, so the working group is voting by letter ballot to accept it as an American National Standard.

The working group voted to start the process of reaffirming ANSI E1.34 – 2009, our standard for measuring floor slipperiness. It's a drag-sled method that can be adapted to give measurements with particular performer shoe soles and heels. It's simple. Does it need to be added to or changed? It's in public review so the public can tell us.

Followspot Position Working Group

Six working group members attended the very short meeting on October 5. The purpose of the meeting was to consider if anything needed to be done now to maintain ANSI E1.28 – 2023, Guidance on planning followspot positions in places of public assembly, or ANSI E1.66 – 2020, Safety Standard for Followspot Positions Erected for Short-term Use in Entertainment Venues. Nope. The meeting was over in 14 minutes.

Fog & Smoke Working Group

Ten members, one ESTA staff who is not a member, and three visitors attended the F&S meeting on October 5. The active project has been revising ANSI E1.23 so it gives advice on ventilation, carbon dioxide blast effects (e.g., a steam locomotive's whistle blast), and required a short safety summary. The draft standard received no public review comments in the last public review, the working group members attending said they were content with it; that satisfaction will be documented with a formal letter ballot to accept the draft as a revised standard.

ANSI E1.5 – 2009 (R2018), Entertainment Technology - Theatrical Fog Made with Aqueous Solutions of Di- and Trihydric Alcohols, and ANSI E1.29 – 2009 (R2018), Product Safety Standard for Theatrical Fog Generators that Create Aerosols of Water, Aqueous Solutions of Glycol or Glycerin, or Aerosols of Highly Refined Alkane Mineral Oil, both have arrived at their five-year anniversaries, at which time the working group needs to reaffirm them, revise them, or withdraw them. Motions were made to reaffirm them—a process that requires a public review first so the public can comment.

Rigging Working Group

The Rigging Working Group had seventy-one members and one visitor attending its meeting on October 7. It's an immense working group with a lot of projects, but its meetings always move efficiently. Much was done in a little less than two hours.

The working group voted to start a revision project for ANSI E1.21-2023, Entertainment Technology – Temporary Structures Used for Technical Production of Outdoor Entertainment Events, which was approved as an American National Standard less than three weeks before this meeting. The 2023 edition of E1.21 has been harmonized with the International Building Code, referring to particular clauses and tables with particular requirements in that code. Unfortunately, the 2024 IBC, the current edition, has the clauses and tables differently numbered from previous editions and the draft used in developing E1.21, so E1.21 points to the wrong places for guidance. This will be a limited revision, focused on fixing the references, so the revision process should be fairly fast.

The working group also voted to start a revision project for ANSI E1.2-2021, Entertainment Technology – Design, Manufacture and Use of Aluminum Trusses and Towers. The revision will be limited to welding requirements and updating associated welding references.

A new project was approved: BSR E1.81, Rigging System Signage Requirements. ESTA's entertainment rigging equipment standards include a requirement for signs and labels to warn users of operational hazards, and refer to the ANSI Z535 suite of standards for the design of those materials. However, ANSI Z535 addresses the visual aspects of the signs with only some basic guidance as to how the consequences of exposure, for example, "Warning" versus

"Danger" versus "Notice", may be distinguished. They provide no guidance for the hazards that are typical of the common types of stage equipment. This E1.81 project would create a document to guide equipment designers through the process of identifying residual risks and the creation of appropriate warning signs and labels.

Stage Machinery Working Group

Twenty working group members and one visitor attended the meeting on October 6. BSR E1.42, the draft standard for stage and orchestra pit lifts, had been offered for public review with the last review netting no comments. However, there was discussion about load testing. It was decided that the standard covers load handling adequately, so a motion was made to accept the draft as an American National standard. BSR E1.71, curtain machines, also received no public review comments, the working group is satisfied with, so it too is being voted on to be accepted as an American National Standard.

Weapons Safety Working Group

Seventeen members and one ESTA staff person attended the Weapons Safety Working Group meeting on October 5. Work is

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 (we have none now), Designers who are not also manufacturers, and Dealer/Rental companies
- **Electrical Power:** Custom-market Producers, Designers who are not also manufacturers of electrical power distribution equipment
- **Event Safety:** Equipment Providers, Performing Artists
- **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:** The working group has no under-represented interest categories. Membership is open, but no new members are being solicited.
- **Stage Machinery:** Users.
- **Weapons Safety:** Equipment producer (weapons or projectiles), Dealer/Rental Companies, Insurance providers, Designers.

Information about joining working groups and membership application forms are available at <http://estalink.us/493sr>. Our procedures documents are at https://tsp.esta.org/tsp/documents/procedural_docs.html, and there are copies of the application forms there, too. If the TSP is valuable to you, you can make a donation and add your name to the Investors in Innovation list at https://tsp.esta.org/tsp/inv_in_innovation/investors.html.

continuing on developing standards for firearms and projectile weapons (e.g., bows and arrows) and non-projectile weapons (e.g., swords and clubs). There was discussion of various safety bulletins being developed by other industry organizations.

ESTA public review documents are posted at <http://estalink.us/pr>; the ones mentioned here certainly will have finished their reviews and be gone by the time you read this, but there will be others. It's a constantly updated page. All our public review documents are free to download, and you don't have to join anything or sign-up for anything to comment. The only cost is your time.

If any of these projects strike you as being particularly important to you, you can join the corresponding working group to work on them. Information about joining a working group is at <http://estalink.us/493sr>. There is some cost to this besides your time: a participation fee of \$100 a year per person. It covers participation for one or more working groups; there is no additional fee for joining two or more. ■



Karl G. Ruling is ESTA's Senior Technical Standards Manager. He also serves as *Protocol's* Technical Editor. Karl can be reached at karl.ruling@esta.org.