

MINUTES
FLOORS WORKING GROUP

Saturday, July 14, 2001
Dallas/Ft. Worth Airport Marriott
Irving, Texas

Chair: Tim Hansen; Oasis Stage Werks: Principal; Producer
Recording Secretaries: Karl G. Ruling and William L. Maiman, ESTA

People Attending:

Keith Sklar; Actors' Equity Association; Observer; General Interest
Ken Greenwood; Actors' Equity Association; Observer; General Interest
Bob Dagger; American Harlequin Corp, Principal; Producer
Tim Hansen; Oasis Stage Werks; Principal; Producer
Jerry Gorrell; Theatre Safety Programs; Principal; Producer
William Krokaugger; Mole-Richardson; Visitor
Arnold Tang; self; visitor
Kent Jorgensen; IATSE Local 80; visitor
Patrick Wenning; National Rehab Hospital; invited Guest
Mark Elliott; The Walt Disney Co.; Observer; User (joined this meeting)

1 Opening Remarks

Tim Hansen called the meeting to order at 8:10.

2 Attendance and Membership

2.1 Introductions and taking of Roll

An orange attendance sheet was circulated and the attendees were asked to sign in. All members and visitors introduced themselves.

2.2 Call for Quorum

A quorum was present and the meeting could continue as a Working Group.

2.3 Requirements for membership

Tim Hansen reviewed the requirements for membership. Tim Hansen explained that membership is open to all who are affected by the work of the group. Voting members are also required to attend meetings and participate in votes by letter ballot. Membership is not a requirement.

Attendance requirement Every principal member of the working group is required to attend meetings. Any principal member and voting alternate who both miss three consecutive meetings will have their membership status changed to observer. This action will be taken as the last item of business at each meeting and recorded in the minutes of that meeting.

Attendance Letters It was noted that some members have not been attending meetings. Tim Hansen and Bill Maiman will review the situation and send appropriate letters to those working group members.

3 Processing of new membership requests

Tim Hansen read the application of Mark Elliott from the Walt Disney Company, who was applying as an observer in the user category. Jerry Gorrell moved that the application be accepted. The motion was seconded by Bob Dagger. The motion was accepted unanimously by a show of hands.

The voting body for the rest of the meeting was thus:

Name	Company	Representing	Voting Status	Int. Category
Tim Hansen	Oasis Stage Werks	Oasis Stage Werks	Principal	Producer
Keith Sklar	Actor's Equity Association	Actor's Equity Association	Observer	General Interest
Ken Greenwood	Actor's Equity Association	Actor's Equity Association	Observer	General interest
Bob Dagger	American Harlequin Corp.	American Harlequin Corp.	Principal	Producer
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	Principal	User
Mark Elliott	Walt Disney Company	Walt Disney Company	Observer	User
			6 votes	3 producers 1 user 2 general interest

4 Approval of minutes from the previous meeting

It was noted that the Floors section of the TSP website needs to be changed —to reflect new mission statement, as discussed and approved at the previous meeting. Bob Dagger moved that the minutes from the previous meeting be accepted. The motion was seconded by Jerry Gorrell. The motion was accepted unanimously by a show of hands.

5 ESTA Declarations

5.1 Anti-Trust statement:

"The ESTA Board of Directors, the Technical Standards Committee and the leadership of this Working Group will reject or nullify any actions that unlawfully restrain trade. Anyone who feels that such an action is being or has been taken is requested to bring that matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC Chair(s), or the ESTA President immediately."

"ESTA legal counsel has informed us that violations of the antitrust laws can have serious consequences. Individuals engaged in certain unlawful conduct can be found criminally liable. An individual convicted of a criminal violation of the Sherman Act may be fined as much as \$100,000 and imprisoned for up to three years. An easy to read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

5.2 Call for patents:

"ESTA intends not to publish any standard that contains protected intellectual property, unless that property can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent and copyright disclosures to implement its intent. ESTA does not conduct patent or copyright searches and does not warrant that its programs contain no protected intellectual property."

"In keeping with the open disclosures policy, I ask if anyone present wishes to notify the working group of the existence of a patent that might protect material in a standard being developed by the working group. You need not be the holder of the patent or copyright to notify the working group of its existence."

6 Approval of Agenda

Jerry Gorrell moved that the agenda be approved. Bob Dagger seconded the motion. It was accepted unanimously on a voice vote.

7 Old Business

7.1 Status of BSI Testing Machine

Tim Hansen reported that his company built a machine per the recommendations in standard 744-1, part 90, part 2 and tested various samples. After analyzing the machine and the results, it was determined that there was not a huge range of differences from various surfaces. Also, there was not a significant difference in results, though many different types of materials were tested. There was a big difference in wet/dry surfaces.

7.2 Presentation of Other Testing Results

Bob Dagger reported that his company continued working on a design encompassing a radius sole plate that is dragged across the surface. Interestingly, all floors and all material types will pass--but one cannot tell the suitability for dance or even which type of dance. Therefore, he has determined that the testing procedure needs to be modified and is considering changing from a golf ball size unit – to a sole plate the size of a ballet dancers foot for more accurate testing.

So, American Harelquin has done some preliminary testing, but without good quality results. Interestingly, all of their floors pass this test and all appropriate BS standards. The German tests are adequate and his floors pass as well; but none of these tests and their results are meaningful for entertainment application testing, if the primary criteria is slip resistance measurement.

7.3 Review of medical studies and the interpretation of data –

Three studies relevant to the issues of rake and its effect on performers distributed at the previous working group meeting by Keith Sklar were explained, reviewed, and discussed.

R. W. Evans, R.I. Evans, S. Carajal, and S. Perry, "A Survey of Injuries among Broadway Performers," American Journal of Public Health, Volume 86, No. 1. pp. 77-80.

R. W. Evans, R.I. Evans, and S. Carvajal, and S. Perry, "A Survey of Injuries among West End Performers," Occupational Environmental Medicine, 1998; 55: 0-0

P. B. Wenning and D. O'Connell, "Plantar Stresses Induced by Inclined Surfaces While Standing: A Pilot Study," Medical Problems of Performing Artists, December 1999, pp. 180-186.

Patrick Wenning, Physical Therapist associated with NRH/Regional Rehab – Bethesda, Maryland, was our invited guest. Dr. Evans, one of the authors of two of the studies participated in the discussion by speakerphone/conference call.

7.3.1 Dr. Evans studies

There was a general presentation and discussion on the two "Survey of Injuriesstudies" with Dr. Evans participating via speakerphone. Working group members were interested in the rate of injuries per increased rate of floor rake, the effect of other factors on injuries –i.e. costumes, choreography, individual factors, sample size, study validity, and the apparent determination that women are more prone to injury by the effect of a raked floor. Dr. Evans also stated the many opposing viewpoints; Designers/Producers/Audiences prefer a rake while dancers and actors are opposed to raked stages due to being unpleasant to perform on a raked floor. The general

agreement was that due to the large number of variables, a large sample size is needed and that additional carefully designed studies, screening out non-rake (work) related factors are needed. The issue of insurance, workers comp, and the role of the floors Working Group were briefly discussed.

7.3.2 Patrick Wenning Presentation

Mr. Wenning introduced himself and explained his background and interest in Dance and Physical Therapy. Essentially, he acknowledged that while performers don't like a raked floor, the scientific community wants proof as to the problems caused by this type of environment. Therefore, his study was based on posture and the effect of an incline on the posture. Essentially, the study examines and concludes that as the rake gets steeper, more pressure is present on the downstage foot. The study proves change in pressure and that the steeper the incline, the greater the effect on the body. However, Wenning emphasized that this is a pilot study and additional studies are needed. He outlined possible subjects for the next generation of studies: posture, the effect of standing on a raked floor, and the effect of a PT program on reducing injuries caused by rake. He also noted that actors have to be told how to position their body to balance the stresses and that a Physical Therapy program of stretching and training is limited in its effects and does require sufficient backstage space to implement.

Additional discussion continued on rake, its effect on performers, the need for additional studies, and how the Floors working group could design or commission a study. Ken Greenwood volunteered to head a task group to examine the issue and to obtain the data. Jerry Gorrell volunteered to analyze the data. The discussion will be continued at the next meeting.

7.4 DIN 18032 – The English Version

Bill Maiman reported that a two part English translation of the German DIN 18032 Standards was commissioned by ESTA and distributed with the agenda to all members of the Floors Working Group. It was emphasized that the translation while very good, was not checked by technical experts or the DIN organization for accuracy. There was lengthy discussion on many issues based on the testing machinery and the results expected to be obtained from such machinery. It was also noted that the DIN standard is excellent, though it is designed for sports type floor materials. Therefore, the values obtained are appropriate for sports but not for dancers. Amongst the key issues that need additional investigation are: the relationship of floor stiffness/absorbency to the rate of injuries, the need for agreed upon measurement techniques for floor surfaces and/or their structure beneath, the compilation of data on different floors, and the development of a range of values that correspond to an agreed set of measurements that define parameters appropriate for dancers/performers in the entertainment industry. As an example, regarding the slippage issue, can this be adjusted, as opposed to changing the dance surface? Therefore, other means of changing the slippage factor would be explored to meet the value recommended for a particular type of dance or performance.

Based on the discussions, there was agreement to form a task group to examine the issues and begin work on the writing of an ANSI standard on Floors.

Jerry Gorrell made a motion to develop a floor document, based on a revision of the DIN standard; with the concerns of the entertainment industry appropriately reflected in the development of the value ranges. Tim Hansen seconded the motion. Bob Dagger agreed to chair the task group devoted to this effort. The motion was accepted unanimously by a show of hands type vote.

There was additional discussion about the task group, the proposed document, and other issues. Important points are: the need for writing a standard that is appropriate for the entertainment industry, such as, testing procedures, testing for slip, energy absorption,

performance values and slippage. Jerry Gorrell also discussed the need to address engineering issues, and building codes for dance floors and performance stages. He felt that these are especially important for preserving the absorbency of floor surfaces and supporting the point loads/heavy weight of scaffolding, personnel lifts and platforms. There was general agreement that additional studies involving performers, locations, venues are needed; as well as defining the parameters for scrutiny

7.4.1 ANSI

Following the discussion on the DIN standard, there were discussion on ANSI standards and the development and methodology of studies. It was agreed that Bill would develop an explanation of the ANSI procedures.

Recess

There was a 5-minute recess that began at 10:55 and T. Hansen called the meeting back to order at 11:00.

7.5 News from Rosco Italy and Rosco Russia – Michael Sean Graves

There was no report, due to the absence of Mr. Graves. Tim Hansen will call and determine the reason for the delay in presenting the materials. He will ask for written materials so that the ESTA office can distribute them to the WG members.

8 New Business

There was no new business

9 Other Business

Bob Dagger agreed to investigate the International Association of Dance, Medicine, and Science. (IADMS) (Website URL is <www.iadms.org>) and inform the Working Group about this organization and its relevancy to the mission of the working group.

10 Schedule for Future Meetings

Wed. October 31, 8AM – 12:00 Noon at LDI in ORLANDO –
Friday, February 15th, 7PM – Midnight at USITT in New Orleans
May 3-5 Dallas
July 26-28 Dallas
Oct 2002 Las Vegas - -LDI

11 Adjournment

Jerry moved that the meeting adjourn. The motion was seconded by Bob Dagger. The motion was accepted by a show of hands type vote. Tim Hansen declared the meeting adjourned at 12:05 hours (12:05PM)

Floors Working Group Membership after Changes of the 14 July 2001 Meeting

Name	Company	Representing	Voting status	Int. cat.
Gary Justesen	Oasis Stage Werks	Oasis Stage Werks	A	P
Edward Paget	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	O	G
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Tim Hansen	Oasis Stage Werks	Oasis Stage Werks	P	P
Tim Cox	PLASA	PLASA	P	G
Nevin Kleege	Kleege Industries	Kleege Industries	O	G
Steven Wiese	Wenger Corp.	Wenger Corp.	P	P
Keith Sklar	Actors' Equity Association	Actors' Equity Association	O	G
Michael Sean Graves	Rosco Laboratories	Rosco Laboratories	P	P
Ken Greenwood	Actors' Equity Association	Actors' Equity Association	O	G
Fred Allen	Fred Allen & Associates	Fred Allen & Associates	O	U
Seth Popper	League of American Theatres and Producers, Inc.	League of American Theatres and Producers, Inc.	O	G
Bob Dagger	American Harlequin Corp.	Harlequin Corporation	P	P
Mark Elliott	Walt Disney Company	Walt Disney Company	O	U

Voting Status

- O Observer, non-voting
- P Principal voting on behalf of an organization or company
- A Alternate voting member representing an organization or company
- I Individual voting member representing no entity other than him or herself

Interest Category

- G General Interest
- U User of floors or flooring products
- P Manufacturer of floors or flooring products