

**Minutes**  
**Fog and Smoke Working Group**  
Friday, 24 March 2000  
Adam's Mark Hotel  
Denver, CO

**Chair:** Larry Schoeneman; Interesting Products, Inc.; Principal; Producer

**Recording secretary:** Karl G. Ruling

**Members attending:** Gary Fails; City Theatrical, Inc.; Principal; Producer  
Eric Tishman; Rosco Laboratories; Principal; Producer  
Adrian Segeren; Le Maitre Special Effects; Principal; Producer  
Bill Hektner; USITT; Principal; General Interest  
Mike Wood; High End Systems; Principal; Producer  
Martin Michaud; MDG Fog Generators Ltd.; Alternate; Producer  
Murray Gellatly; A.C. Lighting Ltd.; Principal; General Interest  
Martin Becker; Reel EFX, Inc.; Alternate; Producer  
Kent H. Jorgensen; MPS Grips, Local 80; Observer; General Interest  
Tim Cox; PLASA; Principal; General Interest  
Edwin S. Kramer; IATSE, Local 1; Principal; User

## **1 Opening remarks**

Larry Schoeneman called the meeting to order at 19:00.

## **2 Attendance and membership**

### **2.1 Introductions of those present**

Those present introduced themselves, proceeding clockwise around the circular table.

### **2.2 Determination of quorum (6 needed)**

Schoeneman noted that we had more than six voting members and thus a quorum.

### **2.3 Recognition of alternate voting members**

### **2.4 Requirements for membership**

Membership is open to all who are affected by the standards-making activities of the group. However, except for organizational members, a member's voting status will be changed to observer if he and his alternate or principal miss two consecutive meetings, pending that member's attendance at another meeting.

### **2.5 Processing of new membership applications**

Schoeneman reported that Bob Barbagallo had applied as a user/observer member and asked for a show of support for the application. His application was accepted unanimously with a show of hands.

### **2.6 Processing of changes to observer status**

The following voting members were not present, and this was their second missed meeting. Therefore, their voting status was changed to observer:

Brad Dittmer  
F. Lee Iwanski  
Patrick Boyd and Greg Meeh  
Nathan Kahn

The voting membership for the meeting was therefore:

Name	Company	Parent Co./Org Represented	Vot. Stat.	Int. Cat.
Murray Gellatly	A.C. Lighting Ltd.	A.C. Lighting Ltd.	P	G
Gary Fails	City Theatrical, Inc.	City Theatrical, Inc.	P	P
Mike Wood	High End Systems	High End Systems	P	P
Lowell Fowler	High End Systems	High End Systems	A	P
Byron Ziegler	High End Systems	High End Systems	A	P
Edwin S. Kramer	IATSE, Local 1	I.A.T.S.E. Local 1	P	U
Larry Schoeneman	Interesting Products, Inc.	Interesting Products, Inc.	P	P
Adrian Segeren	Le Maitre Special Effects	Le Maitre Special Effects	P	P
Randy Segeren	Le Maitre Special Effects	Le Maitre Special Effects	A	P
Marc Gingras	MDG Fog Generators Ltd.	MDG Fog Generators Ltd.	P	P
Martin Michaud	MDG Fog Generators Ltd.	MDG Fog Generators Ltd.	A	P
Tim Cox	PLASA	PLASA	P	G
Tony Douglas-Beveridge	PLASA Standards Office	PLASA	A	G
Jim Gill	Reel EFX, Inc.	Reel EFX	P	P
Martin Becker	Reel EFX, Inc.	Reel EFX	A	P
Eric Tishman	Rosco Laboratories	Rosco Laboratories	P	P
Dan Faulkner	Rosco/Entertainment Technology	Rosco Laboratories	A	P
Bill Hektner	USITT	USITT	P	G
Florian Von Hofen	VPLT	VPLT	P	G
Gunther Schaidt	Safex Chemie	VPLT	A	P
Eckart Steffens	SOUNDLIGHT	VPLT	A	G
			12 voting members	

### 3 Approval of minutes from the previous meeting

Mike Wood moved that the draft minutes be approved as written. The motion was seconded. There was no discussion. The motion was accepted unanimously by a show of hands.

### 4 Approval of agenda

Eddie Kramer moved that the agenda be accepted. The motion was seconded and approved unanimously with a show of hands.

### 5 Call for patents

Schoeneman read the following:

"ESTA intends to publish no 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 disclosures to implement this intent. ESTA does not conduct patent searches and does not warrant that its standards contain no protected intellectual property.

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

### 6 Anti-Trust Statement

Schoeneman also read the following:

"The ESTA Board of Directors, the Technical Standards Committee, and the leadership of this Working Group will reject or nullify any actions that restrain trade. Anyone who feels that an action restraining trade is being or has been taken is requested to bring the 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 or ESTA president immediately."

"ESTA legal counsel has informed us that any member of this working group may be found individually liable for any action that restrains trade taken by this working group. An individual convicted of a violation of the Sherman Act may be fined as much as \$100,000 and be imprisoned for up to three years. An easy to read pamphlet describing restraint of trade is available from the Technical Standards Committee."

### 7 Task Group Reports

## **7.1 Fog standard E1.5**

Mike Wood reported on his conversations with Dr. Jim Kehrer and some advice Kehrer had offered via e-mail. Kehrer had met Jim Bus, who is a non-voting member of the Threshold Limit Values for Chemical Substances Committee of the American Conference of Governmental Industrial Hygienists, the group that sets Threshold Limit Values (TLVs) for various substances to which workers and the public may be exposed. Jim Bus had expressed an interest in setting values for the glycols used in fogs. Dr. Kehrer explained that ESTA would have to contact ACGIH and make a formal request that these glycols be evaluated.

Ruling presented a draft letter. Mike Wood stated that the TSC had been apprised of the recommendation and that the F&S Working Group was essentially authorized to send the letter if it choosed.

Eric Tishman suggested that the last sentence, which states that the lack of standards is a problem, be deleted. Ruling agreed to this change. He will fill out the paragraph with an innocuous "thank you" or "please contact me for more information" sentence or sentences.

Eddie Kramer moved that Ruling send the letter asking for the ACGIH to undertake this project. The motion was seconded. By show of hands, the vote was eight in favor and two against, with no abstentions other than the Chair. The motion was accepted.

Martin Becker moved that we expand the scope of the letter to include more than the chemicals used in glycol/glycerin fogs. The motion was seconded. By show of hands the vote was two in favor, with eight opposed, and no abstentions other than the Chair. The motion failed.

Tim Cox moved that the sentence be added after the list:  
"There are other chemicals used in theatrical fogs, but they are beyond the scope of this standard."  
The motion was seconded. By show of hands, the vote was seven in favor and three opposed. (Chair abstained.) The motion was accepted.

[The letter as modified is appended to these minutes.]

## **7.2 Fog machine instruction manual standard**

Karl Ruling distributed the one comment that was received.

Bill Hektner moved that we accept the one comment offered by Jerry Gorrell. The motion was seconded. Unanimous show of hands in support. The comment resolution "accept" was accepted by the required super majority.

Eric Tishman moved that we send BSR E1.14 to the task group to be further fleshed out. The motion was seconded. Unanimous show of hands.

Larry Schoeneman asked Murray Gellatly and Eric Tishman to become the task group to work on the document, since the two of the original task group members, Dittmer and Iwanski, were not present and had been moved to observer status.

## **7.3 Responsible Product Stewardship Program**

Mike Wood presented the draft ESTA Product Stewardship packet. Eric Tishman was careful to note that Mike Wood had done all the work.

It was agreed that the ideal schedule will be that the group will send comments to Mike Wood by April 15. Mike will send the revised document back to Karl Ruling for distribution by May 6. The due date on letter ballot to accept the ballot shall be three weeks after its distribution date. Additional iterations of resolutions on comments received from the balloting and further balloting on these resolutions may be done at the discretion of Mike Wood and Karl Ruling, as time permits.

Bill Hektner moved that the above schedule be followed. The motion was seconded. The motion was accepted unanimously by a show of hands. Motion carried.

Martin Michaud moved that on the ballot that will be sent by Karl, "accept" and "accept in principle" will be counted as positive votes to send the document forward to the TSC. The motion was seconded. Unanimous by show of hands. Motion carried.

#### **7.4 Data collection task group**

Mike Wood presented the instructions for how to do the sampling. The instructions were written by TRI/Environmental Inc.

The consensus of the discussion was that the action items are:

- Mike Wood will make a sample journal format for recording the sampling conditions.
- People interested in taking samples will let Karl Ruling know by email
- People will email the sampling journal entries to Karl Ruling .

#### **8 Old Business**

None.

#### **9 Liaison Reports**

##### **9.1 PLASA**

Tim Cox reported that he had a conversation with person who said that they had many health and safety concerns with atmospheric effects, that employees were unhappy with working in a fogged environment. Tim Cox sent him information and invited him to contact him again for more information if that was not satisfactory. This was in February, and he has not heard any more from him.

##### **9.2 JATET**

Schoeneman reported that he had nothing to report.

##### **9.3 VPLT**

Neither Steffens nor von Hofen were present. No report.

##### **9.4 The Kramer and Fails Report**

Gary Fails reported that he had talked to a trustee of Local 1, who said that they were expecting the Equity/League report any day.

##### **9.5 NFPA**

Schoeneman reported that there might be a meeting in May to review comments on the flame effects and pyro standards. If the resolutions are not contested – there are no comments – there will be no meeting.

#### **10 New business**

##### **10.1 LDI Dog & Pony Show**

The consensus was that the F&S working group shall do a presentation at LDI 2000. Possible topics include:

- The glycol sampling project
- The ACGIH project
- The Product Stewardship Program
- The 3rd edition of the Introduction to Modern Atmospheric Effects.
- Swag

Karl G. Ruling will be in charge of putting this together.

##### **10.2 Safety Bulletin #10**

Martin Becker reported that he had asked AMPTP that if there is a reexamination of Safety Bulletin #10, that Local 44 (Special Effects) have representation and that Martin Becker be that representative. Ruling agreed to send Becker a copy of the NIOSH report and another copy of the Introduction to Modern Atmospheric Effects.

#### **11 Other business**

None.

**12 Schedule for future meetings**

Schoeneman announced that the next F&S Working Group meeting will be July 15, 2000 at 7:00 p.m. (19:00) at the Dallas/Ft. Worth Airport Marriott on Freeport Parkway in Irving, Texas. (The same place as always.)

**13 Adjournment**

Mike Wood moved that the meeting adjourn. The motion was seconded. The motion was accepted unanimously by a show of hands. Schoeneman declared the meeting adjourned at 22:24.



**F&S Working Group Membership after Membership Changes Done at the Beginning of the Meeting**

Name	Company	Parent Co./Org Represented	Vot. Stat.	Int. Cat.
Murray Gellatly	A.C. Lighting Ltd.	A.C. Lighting Ltd.	P	G
Hugh A. Rose	Alliance of Motion Pict. & Television Prod.	Alliance of Motion Pict. & Television Prod.	O	G
Brad Dittmer	Associated Theatrical Contractors	Associated Theatrical Contractors	O	U
Patrick O'Rourke	Big Apple Lights	Big Apple Lights	O	U
Gary Crawford	C.I.T.C.	C.I.T.C.	O	P
Gary Fails	City Theatrical, Inc.	City Theatrical, Inc.	P	P
Norman Wright	Group One	Group One	O	P
Mike Wood	High End Systems	High End Systems	P	P
Lowell Fowler	High End Systems	High End Systems	A	P
Byron Ziegler	High End Systems	High End Systems	A	P
Edwin S. Kramer	IATSE, Local 1	I.A.T.S.E. Local 1	P	U
Larry Schoeneman	Interesting Products, Inc.	Interesting Products, Inc.	P	P
Jack Suesse	J.R. Clancy, Inc.	J.R. Clancy, Inc.	O	G
Greg Meeh	Jauchem & Meeh, Inc.	Jauchem & Meeh, Inc.	O	U
Patrick Boyd	Jauchem & Meeh, Inc.	Jauchem & Meeh, Inc.	O	U
Adrian Segeren	Le Maitre Special Effects	Le Maitre Special Effects	P	P
Randy Segeren	Le Maitre Special Effects	Le Maitre Special Effects	A	P
Jon Petts	Jem Smoke Machine Co, Ltd.	Martin Professional A/S	O	P
F. Lee Iwanski	Four Star Lighting	Matthews Studio Group Companies	O	U

Name	Company	Parent Co./Org Represented	Vot. Stat.	Int. Cat.
Marc Gingras	MDG Fog Generators Ltd.	MDG Fog Generators Ltd.	P	P
Martin Michaud	MDG Fog Generators Ltd.	MDG Fog Generators Ltd.	A	P
Monona Rossol	Monona Rossol	Monona Rossol	O	G
Kent H. Jorgensen	MPS Grips, Local 80	MPS Grips, Local 80	O	G
Tim Cox	PLASA	PLASA	P	G
Tony Douglas-Beveridge	PLASA Standards Office	PLASA	A	G
George Sabbi	PRG Lighting Group	PRG	O	U
Robert Barbagallo	Proximo Inc.	Proximo Inc.	O	U
Jim Gill	Reel EFX, Inc.	Reel EFX	P	P
Martin Becker	Reel EFX, Inc.	Reel EFX	A	P
Eric Tishman	Rosco Laboratories	Rosco Laboratories	P	P
Dan Faulkner	Rosco/Entertainment Technology	Rosco Laboratories	A	P
Heinz Siller	RST Präsentationssysteme	RST Präsentationssysteme	O	G
Beverly Huggins	SFX Design, Inc.	SFX Design, Inc.	O	P
Nathan Kahn	Theatre Effects, Inc.	Theatre Effects, Inc.	O	P
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Thomas Costello	TJC and Associates	TJC and Associates	O	G
Colin Waters	TMB Associates	TMB Associates	O	G
James F. Foley	UCISCO, Inc.	UCISCO, Inc.	O	P
Rob Schneider	University of Arizona, Department Of Theatre	University of Arizona, Department Of Theatre	O	U

Name	Company	Parent Co./Org Represented	Vot. Stat.	Int. Cat.
Bill Hektner	USITT	USITT	P	G
Florian Von Hofen	VPLT	VPLT	P	G
Gunther Schaidt	Safex Chemie	VPLT	A	P
Eckart Steffens	SOUNDLIGHT	VPLT	A	G
Michael Zilz	Zilz International GmbH	Zilz International GmbH	O	G

#### Voting Status

- P Principal voting representative for a company or organization
- A Alternate voting representative for a company or organization
- I Individual representing no organization other than himself or herself
- O Observer; non-voting

#### Interest Categories

- P Producer (manufacturer) of fog or smoke effects
- U User of fog or smoke effects
- G General interest



TEXT OF LETTER TO ACGIH:

DATE

Technical Affairs Department  
American Conference of Governmental Industrial Hygienists, Inc.  
1330 Kemper Meadows Dr., Suite 600  
Cincinnati, OH 45240

To whom it may concern:

I am writing to ask the ACGIH to undertake setting appropriate exposure limits for the glycols and glycerol used in theatrical fogs. This standards setting would be invaluable support for a draft American National Standard, BSR E1.5, that the Fog and Smoke Working Group, part of the Accredited Standards Committee E1, is developing.

The poly-hydroxyl alcohols that we are concerned about are:

- Triethylene glycol
- Diethylene glycol
- Monopropylene glycol (propylene glycol; 1,2-propanediol)
- Dipropylene glycol
- Glycerol (1,2,3-propanediol)
- Butylene glycols (1,2-, 1,3-, 2,3-, and 1,4-butanediols)

There are other chemicals used in theatrical fogs, but they are beyond the scope of this standard.

Most of these compounds do not have either short term or TWA exposure limits. Glycerol is one that does have an ACGIH TLV (8-hour TWA), which is  $10 \text{ mg/m}^3$ , but it has no short-term limit. There are a few limits set by some other governmental and professional groups, but many of these limits cap the levels of these alcohols as aerosols because they are considered nuisance obscurants rather than because of any health effects. In theatrical applications the aerosols are used to create fog effects, so limits based on ensuring clear vision are inappropriate.

We have commissioned two CIH firms to prepare reports of surveys of the scientific literature. Copies of those reports are attached. The Cohen Group report, in particular, gives a good overview of how the glycols are used in theatrical fog applications and what we know about their toxicity.

I am also enclosing a brochure about ESTA's Technical Standards Program. The TSP is accredited by ANSI as E1, Safety and Compatibility of Entertainment Technology Equipment and Practices. ESTA is a non-profit trade association that supplies administrative support for ASC E1.

I hope that you will take on this project. I would be happy to give you any further information you might need or to clarify any details.

Best regards,

Karl G. Ruling  
Technical Standards Manager