CHAIRMAN'S MESSAGE

JOINING THE IEEE

OR

"YOU DON'T NEED A DEGREE TO HAVE FUN"

As you surely have figured out from previous Product Safety Society mailings, we are promoting the idea of joining the IEEE. You may ask yourself "Why do these guys want me to join the IEEE when the PSS isn't even a member Society?". The answer is easy: when we have enough signatures from IEEE members, the Product Safety Society will be able to join the IEEE and participate in all the benefits that affiliation will bring. A description of these benefits will have to wait for a future column because I don't have space to mention the excellent periodicals, technical publications, symposiums, conferences, and group insurance, not to mention the . . . But back to my original topic—"Joining the IEEE".

Many people suffer from the misapprehension that to join a prestigious professional society like the IEEE, they must have at least an Electrical Engineering degree and perhaps a patent or two. Nothing could be further from the truth! The IEEE Bylaws make it clear that working in "IEEE designated fields" is the most important factor to be eligible for membership. But let me quote the applicable parts for your reference.

> 105.4 Member: The grade of Member is limited to those who have demonstrated professional competence in IEEE designated fields. For admission or transfer to the grade of Member, a candidate shall be either:
>
> (a) An individual engaged in IEEE designated fields (I) who shall have received a baccalaureate degree or its equivalent in those fields from a "recognized educational program:' or (2) who shall have had a least three years of experience, in a position normally requiring the qualification listed under (I), which may be accepted in lieu of the educational requirements at the discretion of the Admission and Advancement Committee.
>
> (b) A teacher of a subject in an IEEE designated field who shall have received a baccalaureate degree or its equivalent in those fields from a "recognized educational program:' or who has had at least three years of professional teaching experience and shall have particiapted in planning and conducting courses.

CHAIRMAN'S MESSAGE, continued

(c) A person regularly employed in IEEE designated fields for at least six years who, by experience, has demonstrated competence in work of a professional character.

(d) An executive who, for at least six years, has had under his/her direction important technical, engineering or research work in IEEE designated fields.

One other aspect of applications for membership is the requirement for references. "For Member--One IEEE member holding Fellow, Senior Member, Member, or Honorary Member grade for an applicant who automatically meets the educational requirements for Member grade as specified in Bylaw 105.4(a), or three Fellows, Senior Members, Members, or Honorary Members for any applicant who does not automatically meet the educational requirements specified in Bylaw 105.4(a)". The IEEE will also accept other references, as mentioned in Bylaw 106.2, but I am sure that IEEE Member references are available within the Product Safety Society.

You may ask yourself "How can I join this wonderful IEEE organization so that I can help the Product Safety Society by signing its petition?". (You *are* asking yourself that question, aren't you?) In the San Francisco Bay Area you can pick up an application form at our monthly meetings, or phone the IEEE office at 415-327-6622. Other metropolitan-areas will have the IEEE office listed in the phone book, or you can call the national office at 212-705-7900.

So you join the IEEE and you sign the PSS petition. Now you may ask yourself "Am I having fun yet?". Why not come to one of the Product Safety Society meetings and find out?

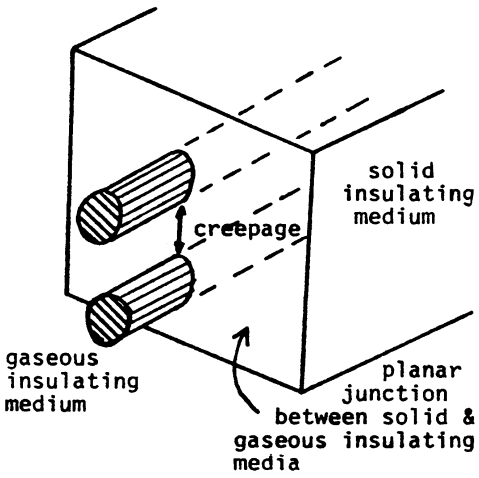
Rich Pescatore
Chairman

Let me begin by saying the testing lab was old and should've been replaced anyway.

TECHNICALLY SPEAKING

UNDERSTANDING CREEPAGE DISTANCES

Rich Nute has offered to become our first Columnist for the Product Safety Society Newsletter. This first article is a reprint of a discussion on HPs electronic mail regard-ing the definition of Creepage as used in various IEC standards. It is presented here to stimulate thought and discussion on the intent of creepage requirements.



The term creepage refers to the abrupt junction of two, parallel insulating media. It is a particular junction -- such as that between solid and gaseous insulating media.

Note that creepage is *not* an insulator. Creepage is nothing more than a boundary surface. One characteristic of a boundary or junction is that the two insulating media likely have radically different electric strength ratings. (Volts per unit distance through the medium). Therefore, the distance between two conductors located at the junction *must* be chosen for the insulation with the least value of electric strength. Since air has the least value of electric strength, the distance between the two conductors must be based on the electric strength of air (See IEC 664, Table I).

Assume that the junction in question is a plane. As voltage is increased, eventually the air will break down and conduct. When it does so, an arc occurs, and power is dissipated in the arc. If the arc occurs at the surface of the solid insulation, the heat of the arc could burn the surface of the solid insulation and could result in a carbon path across the solid insulation.

One way to positively prevent this carbon path from happening is to move the arc away from the surface of the solid insulation. This can be done with a parallel clearance with smaller dimensions than the creepage. In this way, any arc will occur at the clearance rather than at the creepage.

Another way to prevent a carbon path is to make the clearance distance very long such that its electric strength approaches that of the parallel solid insulation. This is done by interposing a rib of solid insulation between the two conductors where they emerge from the solid insulation (in air, the conductors must diverge such that the clearance between any two points has the required electric strength). The clearance

Technically Speaking, *Continued*

path remains the shortest distance through air, but now the path may include some portion of creepage. Thus the air path is very long, and the electric strength of the clearance becomes very high.

My point is that a creepage path is not an insulator. The air and the solid media are the insulators. The electric strength of the AIR PATH determines the breakdown voltage. The air path can be made very long and its -electric strength very high by interposing one or more ribs of solid insulation.

Based on the above, consider the following: If a clearance is located remote from a creepage, and its distance is less than that of the creepage such that the clearance will break down at a lower voltage than the creepage, then what should be the requirement for the Comparative Tracking Index (CTI) of the solid insulating medium (Assume a polution free environment)?

NEWSFLASH!! Product Safety Society Continues Growth

The two present Chapters of the Product Safety Society, the Santa Clara Valley Chapter in Cupertino and the Pacific North West Chapter in Portland/Seattle, will soon be joined by at least one new Chapter in the Boston, Massachusetts, area. Jim Norgaard, of Dash Straus & Goodhue in Boxborough, will be contacting individuals in the Boston area who are involved with product safety to arrange an organizational meeting for the new Chapter, presently set for sometime in May.

Jim expects a good response to his invitation, given the enthusiastic turnout of West Coast product safety engineers and the high concentration of electronic industry in the North Eastern United States. For more information please contact:

Jim Norgaard
593 Massachusetts Avenue
Boxborough, MA 01719
tel. 617-263-2662
fax 617-263-7086

Two other people have volunteered to investigate the possibility of starting local Chapters in their areas. Steve Tarket, of Hewlett Packard in Fort Collins, Colorado, and Charlie Bayhi, of MAl Basic Four in Tustin, California, would like to hear from people who are interested in starting Product Safety Society Chapters in the Denver or Los Angeles Areas, respectively. Please note that organizational meetings in these two areas will depend on the response that Steve and Charlie receive. So it is up to you to call or write them and show your interest! For more information please contact:

Steve Tarket M/S 65
3404 East Harmony Road
Ft. Collins, CO 80525
tel. 303- 229- 2481
fax 303-229-2692

Charlie Bayhi M/S 303
14101 Myford Road
Tustin, CA 92680
tel. 714-730-2556
fax 714-730-3185

Chapter Activity Reports

SANTA CLARA VALLEY CHAPTER REPORT

The March 22 meeting was called to order by the Chairman, Rich Pescatore, who reviewed the Agenda and received brief Committee reports. He also issued a challenge to the product safety professionals present to join the IEEE and sign the Product Safety Society petition. If all the non-IEEE members at this meeting did join and sign, we would meet our goal for minimum number of signatures!

The Committee reports:
Membership (Scott Barrows) — Growth is continuing, with much interest from the Los Angeles area.
Constitution (Mike Harris) — Work is proceeding on the Society Constitution. Also noted interest in the PSS during the agents meeting held recently at UL in Santa Clara.
Chapter Communications (Roger Volgstadt) — The newsletter is doing well, but could use more contributed articles, letters, or cartoons. If you would like to contribute or perhaps become a regular columnist, check with Roger at 408-942-4020.
Program (Brian Claes) — The programs for the rest of the year are starting to shape up. Ideas and guest speakers are still welcome! The program for the next meeting will be about Warning Labels.

The guest speaker, Richard Nute, from Hewlett Packard in Vancouver, Washington, gave a fascinating presentation on "The Physiology of Electric Shock and the Dynamic Aspects of Body Impedance". The first part of his talk related some historical incidents of electric shock as well as some therapeutic cases, including a few rather bizarre ones. He next gave definitions of terms and procedures and described and illustrated anomalies of electric shock and current relating to the human body. An unusual videotape of Claude Haggard allowing electric current to pass through his body made it clear that even small currents and low voltages can have very perceptible results.

Rich proposed a definition of electric shock: "The pathophysiological response of the body to voltage and current of sufficient duration whereby the body impedance decreases nonlinearly with increasing voltage:' After raising a number of problems for further investigation, he answered questions from the audience and invited attendees to actually experience various levels of voltage and current while watching their body response on an oscilloscope. As the advertisement in the last Newsletter promised, "a shocking experience" was felt by many and enjoyed by all sixty attendees.

Futher information can be found in the book Electric Shock Safety Criteria (Proceedings of the First International Symposium on Electric Shock Safety Criteria), edited by J. E. Bridges, G. L. Ford, I. A. Sherman, and M. Vainberg, published in 1985 by Pergamon Press Inc., Elmsford, NY (ISBN 0-08-025399- 7).

Chapter Activity Reports, Continued

The next meeting will be on Tuesday, April 26, at 7:00 p.m. at Apple Computer in Cupertino, 20525 Mariani Avenue on the corner of DeAnza Boulevard. The topic will be "WARNING Labels;' so take the precaution of reserving this date and don't be in DANGER of missing it!

Northwest Chapter of PSS News

Yes, we are still alive up here! On 4/7/88 all officers of the NWCPSS will conduct a conference call concerning our next two meetings. The next meeting will be held here in the Puget Sound area at the John Fluke Mfg. Co. Walt Hart has graciously offered to host the next meeting which will be conducted sometime in late May or early June. Preliminary guest speakers will be representatives from CSA and UL, and we hope to get a ..shocking experience" from Rich Nute as well! Rich gave a presentation to the bay area chapter on the Physiology of Electric Shock which we would also like to see!

On October 19, 1988, Pete Perkins of Tektronix in Beaverton, OR is hosting an all afternoon PSS meeting which will conclude with dinner. The topic for discussion will be "International Power Line Configurations and Components". Representatives from Japan, England, The Netherlands, and Panel Components will be there to discuss the differences and consequences in grounding, leakage current, 50 Hz vs. 60 Hz, ring circuits vs. branch circuits, attachment plug caps, and much more.

Both meetings are still in the planning stage and show great promise to be both outstanding and well attended. In next month's Newsletter all the facts will come out, so be looking forward to it.

If you have any questions or comments concerning the above, please feel free to give me a call.

Al Van Houdt
Product Safety Engineer
SpaceLabs, Inc.
4200 150th Avenue N.E.
PO. Box 97013
Redmond, WA 98073-9713
206-882-3700

A CONVERSATION WITH THE DIRECTOR

The following is an approximation of a recent telephone conversation with the IEEE Director for Technical Activities. Dr. Irving Engelson. He. and his associate Mel Olken. Manager of TAB Committees and Special Projects, are the individuals who will be helping the Product Safety Society with our application to the IEEE to become a member Society.

IEEE—I have a few questions to ask. First, is your society unique or are you competing with some other group for members?

PSS—There are other organizations involved with product safety, but they seem to have different approaches. Some are corporate pressure groups, others are involved primarily with Standards writing or certification, others have a much broader scope than we do. As far as I know, The Product Safety Society is the only group that intends to be a professional society for individuals involved with electrical product safety.

IEEE—Is your emphasis on electrical product safety?

PSS —Yes, we do limit the range of our interest in our Charter to electronic equipment. Most of the founding members are in the computer industry and we are not interested in extending the scope of this society to non-electrical products or to environmental safety.

IEEE—How many people do you think may be potential members for your society?

PSS—Judging from the hundreds of companies that submit products to Underwriters Laboratories and the great interest that we have already seen in just a few months, I would expect that we may eventually have a few thousand members. One company on the East Coast, Dash, Straus & Goodhue, which is involved with EMC and product safety testing, has offered to mention the Product Safety Society in their mailing, which would go to several thousand people interested in product safety.

IEEE—You are giving me the right sort of answers. Right now the IEEE has 36 different Societies, from the Computer Society with 90,000 members to the Electrical Insulation Society with 2,000 members. Each Society has a Charter, publishes a newsletter and/ or journal, and holds an annual conference. We have found that for a Society to be able to function successfully it should have perhaps 2,000 members or so as a minimum. Therefore, you might want to consider the possibility of the Product Safety Society first joining the IEEE as a "Technical Committee" of an already established IEEE Society. This would allow you to be part of IEEE while working towards recruiting more members and "spinning off" as a separate Society in a year or two. Of course if you submit a petition that already has 2,000 signatures, it should be possible to form a separate Society immediately!

PSS — I'm glad to hear that we are on the right track. We have had help from the Santa Clara Valley Section and we are using their Chapter constitution template to form our own Chapter constitutions. This should ease the transition when affiliating with the IEEE if our offices and committees are already in the IEEE format. The third edition of our monthly newsletter will be out soon, and we are planning to start including some short technical articles. Two Chapters of the Product Safety Society exist now and we expect others to be formed as interest grows. Most product safety engineers are very enthusiastic about the idea of a professional Society affiliated with the IEEE.

IEEE — I am excited about the possibilities myself. We will check if another Society, such as the Components, Hybrids and Manufacturing Technology Society, would be willing to help out your group if you joined IEEE as a "Technical Committee" at first. Could you write me a letter describing the Product Safety Society and its plans so we can start something official?

PSS — One Society that might be feasible for us to join temporarily is the EMC Society. Most companies have product safety and EMC engineers working together, or even the same person doing both jobs. Regardless, I would be glad to write to you shortly and in the meantime I will put you on our newsletter mailing list;

John McBain
Secretary /Treasurer

NEXT MEETING: TUESDAY, APRIL 26,1988
TIME: 7:00 PM
LOCATION: APPLE COMPUTER CAFETERIA
20525 MARIANI AVENUE
CUPERTINO, CA
SUBJECT: WARNING LABELS

This Newsletter Prepared on Qume's *PageLINK* Controller and *LaserTEN PLUS* printer. The editor wishes to thank the following individuals for their efforts in preparing this Newsletter: Jonathan Whartman, Ron Wilson, and Claudette Oberdick.

PETITION FOR THE ESTABLISHMENT OF AN IEEE SOCIETY

Date_____

We, the undersigned, who are currently members of the IEEE, hereby petition for approval to form a Product Safety Society affiliated with the IEEE. The proposed field of interest, scope and objectives of the Product Safety Society are shown on the back of this form in the Charter and Strategy statements.

	Signature of Petitioner	Membership Grade and Number	Printed Name
1)			
2)			
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			
11)			
12)			
13)			
14)			
15)			
16)			

The following individual is serving as Organizer for the Society.

Richard L. Pescatore, P.E. (tel. 408-447-6607)
M/S 42LS
19447 Pruneridge Avenue
Cupertino, CA 95014 U.S.A.

PRODUCT SAFETY SOCIETY

CHARTER

The Product Safety Society is an organization concerned with the safety of electronic products. Its members strive to advance the knowledge and awareness of product safety through:

* Study of product safety engineering principles and applications.

* Promotion of a consistant understanding and interpretation of applicable product safety standards.

* Understanding of the contribution of test houses and certification processes.

* Study of product safety management principles and applications.

STRATEGY

The Product Safety society intends to meet the Charter statement through enhanced communications and education. The following methods may be used to this end:

* Host presentations by technical experts.

* Provide a forum for presentations to and from test houses.

* Host panel discussions on selected topics.

* Provide information that is predicated on principles of product safety engineering to standards writing groups and other professional organizations.

* Provide information based on Industry practices to third party certification agencies.

LETTERS FROM OUR READERS

The following letters were received from our readers since the last issue of the *Product Safety Society* (PSS)*Newsletter:*

IEEE President Elect Discusses PSS

I apologize for being so late with this; the last few weeks have been pretty busy and I have been on the road a lot.

Jim Bender, a prominent Product Safety Manager at Texas Instruments in Johnson City, TN has obtained 11 good signatures on the petition I sent him and I have added my own.

We had dinner with the IEEE Board of Directors last month and I discussed the formation of the Product Safety Society with Emerson Pugh (President Elect, IEEE). He identified Irving Engelson, Staff Director, Technical Activities, as a logical person to contact.

Further to my discussion with John McBain at the recent Product Safety Society meeting in Cupertino, the following may be useful.

The IEEE Society on Social ,Implications of Technology (SSIT) has "staked a claim" on the area of "health and safety implications of technology" as shown on the enclosed (not attached -- Ed.) copy of their masthead. I do not see this as a problem since the constituancy of that Society is greatly different from what is envisioned for the PS Society but I suspect the IEEE brass to raise that issue and we should be prepared to answer it.

Pugh said that the formative Product Safety Society might be put under the wing of several interested existing societies such as the SSIT and the EMC Society until it was able to stand alone. I understand that the SSIT currently has approximately 2500 members worldwide and is "barely making it'

Bob Hunter
Texas Instruments
Austin, TX 78769

Support for PSS Continues

I recently received a copy of the March, 1988 newsletter for the Product Safety Society. I gladly submit the enclosed petition for the formation of the Society.

I doubt you will have any trouble obtaining the required number of signatures, but if I can be of any help, please contact me.

Larry Weisbrook
Engineering Manager
International Development and Support
COMPAQ Computer Corp
Houston TX 77070

I appreciated the opportunity to discuss our activity regarding the formation of the New England Product Safety Society.

Our broad goals include the establishment of a forum for the exchange of issues and developments regarding product safety engineering, as well as gaining recognition for the profession of product safety engineering (in part through an eventual affiliation with the IEEE).

We have committed to undertake the organization of this effort and will shortly announce an agenda for our first meeting and program.

Interested participants are invited to contact me directly at (617) 263-2662 for more information.

James R. Norgaard
Vice President
Dash, Straus & Goodhue
593 Massachusetts Avenue
Boxborough, MA 01719

Product Safety Society Newsletter
500 Yosemite Drive
Milpitas, CA 95035

Address Correction Requested

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