



Fellowship AND COMMUNITY

By Don Moseman, Chairman

On June 20, 1994, at our section executive committee meeting we sought to establish the "Broad" goals our section would accomplish this year. Our Vice Chairman at that time, Dan LaRoche, suggested "fellowship." Dan, I couldn't agree with you more!

I recently attended a breakfast for the San Francisco State Engineering Alumni Association. One of the focal points of our breakfast was our desire to create a "sense of community" which would begin when students enter the program. That's exactly what we would like to see happen within our section and between the neighboring sections of ASME (e.g. Santa Clara, San Mateo, Mt. Diablo and San Francisco).

Our "community" consists of all of our professional and student members. You must all know that we welcome you to any of our events.

Joint events are a start (e.g. joint meetings) to developing the "sense of community" we desire. Working together on conferences (e.g. Winter Annual Meeting, Bay Area Technical Conference...) is another step in the right direction. Holding joint activities with the student sections is a plus (e.g. The U.C. Berkeley Crab Feed, The SFSU Dinner Meeting). The Bay Area sections of ASME have been doing this for several years.

This year, we have decided to hold a holiday season "feast" for all to attend. A gathering to relax and enjoy the company of your fellow/fella engineers. We strongly encourage you to bring your spouses as this will be an entirely social evening. For those of you who can help by bringing a dish, please contact me.

NEXT DINNER MEETING

"ASME HOLIDAY FEAST"

An Open Invitation to Members of All Sections of ASME

This is an open invitation to members from all sections of ASME to come and join your fellow / fella ASME member during the holiday season. This special event is our opportunity to get together and enjoy each other's company in a non-technical setting. The location, Belmont's Beautiful Twin Pines Park Senior Center, has been chosen to accommodate members commuting from the four Bay Area sections of ASME. We look forward to seeing you all there.

Dinner: Turkey, stuffing, mashed potatoes, cranberries, pumpkin pie, egg nog.

Date: Tuesday
December 27, 1994

Time: 6:00 PM

Location: Belmont Senior Center
1225 Ralston Avenue
(just west of El Camino Real after 6th)
"Twin Pines Park"

Parking: Located adjacent to the senior center.

Cost: FREE

Contact: For directions and other information, call Don Moseman at (415) 358-9017.

RSVP: Call S.F. ASME at (415) 721-4478 by Friday, December 23, 1994.

We look forward to seeing you all there and may you and your family have a happy and healthy holiday season.

Sincerely,
Don Moseman

P.S.: This will be the shortest message I write all year. Furthermore, for those of you longing for a "techy" message, you will get your wish in our January newsletter when I'll cover our national energy policy.

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Highlights
INSIDE THIS ISSUE

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MONTHLY FOCUS: ETHICS

By Eric Broadhurst, Treasurer

In each monthly newsletter, we focus on a key aspect of engineering or a program that may be of interest to the member ship. This month, the focus is on engineering ethics. Ethics is a topic that often gets overlooked during the day-to-day life of an engineer since it is not based on the technical side of engineering, but rather the philosophical side.

Where is a prospective engineer (or practicing one) to learn engineering ethics? At this time, there are very few schools which have courses in ethics. One resource is the "Code of Ethics of Engineers" set forth by the ASME (see sidebar).

These statements are of three general types: (1) those that relate to scientific integrity, (2) those pertaining to professional interests, and (3) those that relate to social responsibility. While the statements dealing with scientific integrity are fairly fundamental and those addressing professional interests are practical for most fields, it is the interaction between engineering and society that has been the most difficult to define.

Where does one's responsibility to a company end and to society begin? What if there were a situation where working "for the enhancement of human welfare" and holding paramount "the safety, health and welfare of the public" were not compatible with acting as "faithful agents" of an employer? For some engineers, it may be enough to just "do their work" and not worry about the consequences. But what if an engineer were in a position where she felt that she were being asked to do work that was unethical?

One of the most well known case studies involved Roger Boisjoly and the Challenger shuttle disaster. He stated that because of the cold weather, the shuttle launch should be postponed. This was because the loss of elasticity that the O-rings experience at low temperatures increases the likelihood that a proper seal can be formed, thereby allowing "blow-by" of gases. He was then put in the position of having to prove that the launch "would not be safe," whereas in a situation like this it should be the responsibility of an engineer to prove that the launch "would be safe." Management ignored his recommendations and, as we all know, the shuttle exploded shortly after lift-off.

What are engineers to do if they feel that a breach of ethics has occurred? Are there any protective mechanisms available to "whistleblowers"? Since there were no mechanisms in place to protect Mr. Boisjoly after the pre-launch events became public, he has in essence been "blackballed" by the industry. In an attempt to keep situations like this from reoccurring, Joseph Wujek, an engineering professor at the University of California at Berkeley, and a past chair of the IEEE Ethics Committee, has drafted an IEEE resolution for "strengthening the ethical posture of IEEE and its members." It includes provisions for ensuring assistance by the IEEE when members inquire about a potential breach of ethics, and development of a legal defense fund for supporting members whose jobs come into jeopardy as a result of their inquiries.

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The Fundamental Principles

Engineers uphold and advance the integrity, honor, and dignity of the Engineering profession by:

- using their knowledge and skill for the enhancement of human welfare;
- being honest and impartial, and serving with fidelity the public, their employers and clients, and
- striving to increase the competence and prestige of the engineering profession.

The "Fundamental Canons" of the ASME are:

- Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
- Engineers shall perform services only in the areas of their competence.
- Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional development of those engineers under their supervision.
- Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.
- Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
- Engineers shall associate only with reputable persons or organizations.
- Engineers shall issue public statements only in an objective and truthful matter.

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College Corner

Another option would be to have questions of ethical breaches reviewed by a body similar to the P.E. licensing board. This could make the process similar to that used in the medical and legal professions by the AMA and Bar Association, respectively. An alternative to having a governmental agency responsible for this matter would be for a group like NSPE to be the umbrella organization in these matters. While these changes would bring engineering more into line with other professions, there would need to be more of an emphasis on professional registration, perhaps even making it a requirement. This however is an issue unto itself.

There are many resources available to get more information regarding engineering ethics. Mr. Wujek has listed two books on the subject of engineering ethics that are worth reading:

- Layton, E., *The Revolt of Engineers, Social Responsibility and the American Engineering Profession*, Johns Hopkins Press, Baltimore, 1986.
- Unger, S., *Controlling Technology, Ethics and the Responsible Engineer*, Second Edition, Wiley, New York, 1994.

In addition, more information and discussion can be found in the newsletter of ASME's very own Technology and Society Division. Currently questions regarding ethics can be directed to Earl Madison, the Nation Group Director of Regional Services, at 1-800-THE-ASME or Joe Wujek, our Ethics Committee Chair at (510) 642-8485.

Since engineering ethics is not a matter of formulae and experimentation, it is not a simple matter to generate consensus on a definition. Defining ethics requires discussion and debate. Therefore, any comments regarding this matter are encouraged. We can be reached either at our voice mail number or at our mailing address (see right hand column).

The Bay Connection welcomes letters to the editor and editorials from our membership! Please contact Johnny Wu, newsletter editor, (see fax, phone numbers on sidebar) for submissions.

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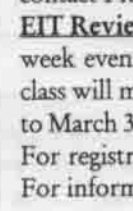
UCDAVIS: CERTIFICATE PROGRAM OFFERS CREDIT COURSE IN HEATING AND AIR CONDITIONING

Temperature Controls for Heating and Air Condition Systems is offered Tuesdays, January 10-March 14, 6-9 p.m., in Sacramento. The course is co-sponsored by the Sacramento Chapter of the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) and University Extension, UC Davis. The Course provides a working knowledge of the principles involved in the selection, design and specifications of temperature controls for HVAC systems. Instructor Bradley Brooks, MA, teaches at Sacramento City College. This credit course is part of the Certificate Program in Heating, Ventilation, Air Conditioning and Refrigeration (HVAC-R), which offers professional curriculum to practicing engineers, designers, energy consultants, and technicians involved in the planning, design, operation and maintenance of environmental building design. The \$295 fee includes course materials. Course fees can be paid by check, VISA or MasterCard or can be billed if a company purchase order is sent. To request more information or enroll, call toll free in California (800) 752-0881. From Davis, Dixon, Woodland or outside California, call (916) 757-8777

College Corner



San Francisco State ASME: On Tuesday November 7th, Don Bender, Project Engineer at Lawrence Livermore Labs addressed us on the topic of flywheels as an electromechanical battery in conjunction with the advanced mechanical design class which is working on developing an energy storage device of their own. During the week of November 21 (tentative) members of the highly successful SFSU Human Powered Vehicle (HPV) Squad of 1993-1994 will visit to discuss their creation with which they won the design element of the ASME inter-university HPV contest. This year's HPV squad hopes to gain valuable insight into the process of building a successful vehicle for competition. The internship hunt is underway for many of our members, and we would appreciate any clues senior members might be able to pass along. Please contact Frank Chen at (415) 239-5416.



EIT Review Class at SFSU: San Francisco State University is offering a seven week evening review class for the Engineering-in-Training (EIT) exam. The class will meet on Tuesdays and Thursdays, 7:00 - 9:45 p.m., from February 14 to March 30. Students taking the class will be eligible for 3.8 units CEU credit. For registration information, contact Extended Education at (415) 338-1373. For information about the course, contact Ahmad R. Ganji at (415) 338-7736.



Berkeley ASME: The UCB student section of ASME had a busy month. We kicked it off with an extremely successful general meeting. A packed house listened to Dr. Claire Max of Lawrence Livermore Nat'l Labs speak on controls systems in adaptive optics for astronomical observation. Later in the month, we sponsored a hike through the Berkeley Hills to the Lawrence Hall of Science. We will be looking forward to a busy next semester.

Employment Opportunities

Senior Design Engineer
This position will provide technical leadership and mechanical expertise in developing new electromechanical products at Schlage Lock.

Responsibilities include conceptual design of electromechanical components and systems. Overall project responsibility for performance, cost and scheduling projects. This position will interface with vendors and internal departments. Leadership ability to direct and motivate three to five junior team members is a must. These team members will include a senior design engineer, a design engineer, designer (draftsperson) and eventually two sustaining engineers.

Requires a BS in Mechanical Engineering and 15 years of electromechanical engineering and design experience. Must be able to work well with people at all levels.

Please send your resume to: Human Resources Dept., Schlage Lock Company, 2401 Bayshore Blvd., San Francisco, CA 94134; Attn: Kathy Roberge. FAX: (415) 330-5620

Tribologist
Herguth Laboratories, Inc., a specialist in testing petroleum products and providing related predictive maintenance programs, has an opportunity for someone with training and/or experience in the fundamentals of lubrication, friction, and wear. Duties will include participation in all aspects of fresh and used oil/grease analysis and communication of results. The candidate will be expected to operate Ferrographic particle analyzer, pin-on-disk tribometer, and 4 ball lubricant tester. Salary is negotiable on the basis of training and experience. Please send resume and salary requirements to: Herguth Laboratories, Inc., P.O. Box B, Vallejo, CA 94590.