



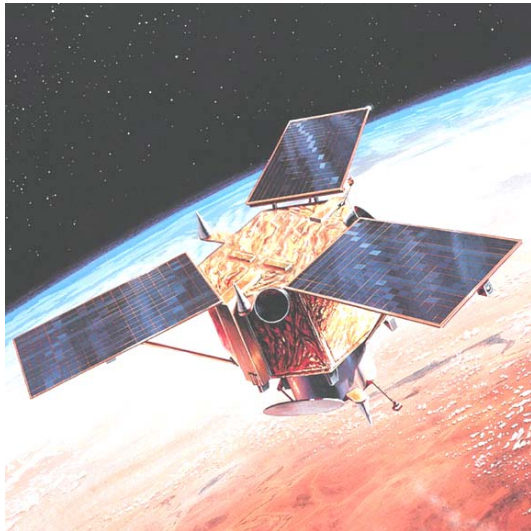
Silicon Valley ASME News

The Santa Clara Valley Section of ASME joins the nation, and the world, in mourning the loss of the courageous crew of STS-107: Rick D. Husband, William C. McCool, Michael P. Anderson, David M. Brown, Kalpana Chawla, Laurel Clark, and Ilan Ramon.
Our thoughts and prayers are with their families.

Fabrication of Integral Reflector Antennas using VARTM

Date: Thursday, March 20, 2003

Speaker: Dr. Alan K. Miller, Lockheed Martin Missiles and Space (Palo Alto/Sunnyvale)



VARTM (Vacuum Assisted Resin Transfer Molding) is a low-cost out-of-autoclave composites fabrication process which has recently been upgraded to aerospace performance levels. It is especially cost-effective when used for integral fabrication of composite structures which are traditionally manufactured as built-up assemblies.

This talk describes initial work applying VARTM to spacecraft reflector antennas, where traditional prepreg. and autoclave-based approaches are very costly. During 2002, an initial 4-ft. demo carbon composite antenna was fabricated. The design utilized a monolithic reflector with integral foam-core hat-shaped ring and rib stiffeners. It also included integral inserts by which attachment bolt loads are transferred to all fabric plies. The infusion was successful on the first run, producing a very smooth reflector surface also having excellent geometric detail in the backing structure. The demo article is light and stiff and its

measured minimum vibration frequency has a Margin of Safety of +33% relative to the predicted frequency. The full range of objectives and challenges for future large spacecraft antennas produced by this method will also be discussed.

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Tips for Successful Negotiation
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Details, Details:

Location: The Wyndham Sunnyvale

6:30 p.m. Registration

7:00 p.m. Dinner (choice of chicken, pasta or vegetarian);

8:00 p.m. Guest speaker

\$25 ASME Members / \$15 Students / \$30 Non-members

(+ \$5 for attendee without RSVP)

RSVP: Elise Engelhardt (408)360-0669 / engelhardt@asme.org

Directions: Take 101 to Lawrence North, then take Lawrence over 237. Turn left at bottom of 237 overpass. Make next left (about 100 feet). The Wyndham is straight ahead.

ASME Distinguished Lecture
Indy Racing and the Effect of
Aerodynamics on the Car

In conjunction with

20th Annual Crab Feed

Jointly organized by the UC-Berkeley Student Section,
San Francisco and Mt. Diablo Sections



Date: Wednesday, March 12, 2003

Speaker: Arthur W. Ebeling, ASME Distinguished Lecturer

Venue/Time: UC-Berkeley. Details to be Announced via Email

Arthur W. Ebeling has compiled information on Indy cars for nearly a half-century, covering development and changes to the sport. Currently retired and Midwest Director Emeritus, Art has been involved at various levels in racing. This spans from professional to student competition. It has been very rewarding to see some of the results from changes implemented.

The history of Indy racing from 1911:

- o Marmon Wasp roadster, front wheel drive, side winder, rear engine mount, gas turbine, wings front and back, ground effects, pods on each side of cockpit, tire changes, frontal area reduction, engine changes, turbo-charging, non turbo charging and safety concerns.
- o The suspension problems relating to set-up as well as changes in driving patterns.
- o Wind tunnel testing as related to wings and tires.

Arthur W. Ebeling holds a B.S. from Rose Hulman Institute of Technology and has very broad experience in industry, chemical, steel, foundry and special metals. Holder of several patent rights in the controlled pressure pouring area, he is an ASME Fellow and has served in various capacities in a number of ASME units. His latest position was Midwest Director, a position he held for 18 years.

March Dinner Meeting: Fabrication of Integral Reflector Antennas using VARTM



Date: Thursday, March 20, 2003

Speaker: Dr. Alan K. Miller,

Lockheed Martin Missiles and Space (Palo Alto/Sunnyvale)

Dr. Alan K. Miller is a Staff Materials Engineer at Lockheed-Martin Space Systems Co. within both the Advanced Technology Center and Materials and Process Engineering organizations. His B.S and M.S. are in Mechanical Engineering while his Ph.D. is in Materials Science and Engineering. Prior to joining Lockheed in 1990 he was a Professor (Research) of Materials Science and Engineering at Stanford University.

For the past 35 years he has focussed on technology development involving materials and structures. His major recent work has been affordable methods for fabrication of polymer-matrix fiber composite structures, including VARTM, in-situ consolidation of thermoplastics, complex integral structures, rapid preliminary design and optimization, and composite highway bridges.

He has published 100 technical papers and 4 book chapters, has edited one book, holds six U.S. patents, and was the principal supervisor of 17 completed Ph.D. students at Stanford.

Networking Forum – Keys To Securing & Maintaining Financial Stability During Career Transition

Date: 7PM Monday, March 24, 2003

Venue: Room 325 Bannan Engineering Building
Santa Clara University

Speaker: Steve Kerner, Success Technology

RSVP: Elise Engelhardt
(408)360-0669 / engelhardte@asme.org

- o Clear and proven strategies to empower you to make positive financial decisions;
- o Take economic control over your financial stability now and in the future;
- o Gain personal confidence for survival during uncertain economic times

New Tax Law o EDD Benefits o Credit Options
o Managing Your 401K Account o

For over thirty years, Stephen Kerner, ChFC, AEP, CLU, RFC, CSA, CBI, founder and President of Success Technology has specialized in financial planning. Over the past 11 years, Success Technology has become the premier provider of educational seminars on Money Management and Investment Strategies in the Bay Area.

April Dinner Meeting Preview – Product Development Do it with Vision

Helpful Hints from Industry to Achieve On-Time, On-Budget Product Development

Date: Thursday, April 17, 2003

Speaker: Bob Lathrop, Lathrop
Engineering

Missing product development deadlines has always meant a loss in profits. The market opportunity was missed. The cost of development was greater than budgeted. And most likely, the product cost missed its targets also. What does experience tell us about the reasons for missing these milestones on product develop programs? Solving these problems is very similar to solving engineering problems. Define the problem(s), gather background information and data, analyze the problem, develop concepts, develop solutions, test the solutions, implement the solutions into your product development process and procedures.

Tips for Successful Negotiation

Negotiating for your annual review, a promotion, or a new job? Here are some guidelines to make your negotiation a success:

- o **Prioritize what you want before negotiating.** Define your overall objectives for responsibilities, work environment, salary, and benefits in advance, to stay focused on your interests throughout the discussion.
- o **Consider what the employer wants, and how you can help them get it.** If you know the employer's needs, and how you can deliver on them, you are more likely to find solutions that satisfy you both.
- o **Be an active listener.** Really focus on what others are saying, rather than just on what you want to hear. This will help you build relationships, clarify the employer's needs, and make you an attractive candidate for the position.
- o **Be creative and open to new options.** Many people go into negotiations thinking there is only one "winning" solution. Before the negotiation, brainstorm ways to meet your and the employer's needs. Then, keep an open mind. Together you may come up with better solutions than either party anticipated on their own.
- o **Research objective salary data.** Check ASME's Career Center for credible, timely salary data.
- o **Practice.** Developing an effective negotiating style takes a lot of work. Role-play with a career coach so you get comfortable asking for what you want and understand how your message comes across.

Peter J. Goodman is author of *Win-Win Career Negotiations: Proven Strategies for Getting What You Want From Your Employer*, and a Negotiations Coach for ASME JobCoach (<http://www.asme.org/jobs/jobcoach/index.html>).

Bad News, Worse News And A Hairy Future !

The word in the media is that Good Times are coming... the worst is over... After all the layoffs, bankruptcies, plant closings, corruption, fraud and eight quarters of bad news, we've finally turned the corner. The Good Times are coming, right?

Don't bet on it. As anyone who is working as a Professional Engineer of any discipline will tell you, getting paid is a major effort. Those who are employed are looking over their shoulders for the next round of layoffs. Why? Because corporations and firms in general cannot raise prices; or even sell product against foreign competition. Unable to raise or maintain prices or market share in a highly competitive environment, firms look for other means of lowering costs.

In this effort, firms turn to cheapening product, delaying accounts payable and reducing staffing. They delay payables, institute layoffs and produce product that is "cheaper", not as durable or as good, to reduce costs. They are willing to produce shoddy product to stay in business. They layoff their innovators, who are the potential lifeblood of the firm.

Underlying all of this is one basic fact: **The global economy continues to suffer from overcapacity!** Everywhere you look, not only are products not designed with planned obsolescence, but are in oversupply. Worse yet, almost everything has become a commodity. (Those of us who remember, may hear Ross' "great sucking sound".)

What can we as engineers do about this?

- o *Ask yourself if you are ready to go head-to-head with the best the world has to offer.* If an honest answer is scary, get cracking on continuing education, short courses and whatever it takes to sharpen your abilities;
- o When designing product, *think about quality, not quantity.* The consumer is impressed with the look, feel and anticipated quality of a well designed, assembled and functional-out-of-box products;
- o *Brown cows are a commodity.* "Purple Cows" are unique, attract attention and sell, whereas commodities stack up on the shelves. When designing, think unique (appearance, function, what the consumer really would be grabbed by);
- o *The ethics of our profession demands that our attitude be merged with the anticipation of the employer (or, for an independent professional, the client).* The employer is paying for our expertise. They have every right to expect the gung-ho, frugal, deliver-110% attitude, and to expect that what you design will be a highly regarded, code compliant, excellent, exciting-to-the-consumer product. Good enough... is not!

We can expect hard times to continue for at least another year. After that, and into the next millennium, our ethics and pride in our output will make each of us and our nation, world leaders. The only personal shield is to be well respected in your field.

Your Email Address – The Key to ASME International

Did you know that your email address is the key to what's happening at ASME? By providing us with your current email address, you can learn about events taking place in our section, such as professional development courses, industry tours, section meetings and networking opportunities.

Updating your email address online only takes a few minutes. To access your membership information, go to www.asme.org. Click on the "Members Only" tab to log onto this site. Be sure to have your member number on hand. After logging on to Members Only, select the "Change of Address and Information" link, located on the upper right-hand side of your screen. From this screen, you will be able to update your primary contact information. Questions? Contact InfoCentral at infocentral@asme.org.

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Open Positions Awaiting Your Volunteer Effort

Nominations & Bylaws
Management Forum Chair

March Business Meeting

Monday, March 3, 2003

Join us for the regular business meeting with excellent networking opportunities.

This meeting will be held at the Pipe Trades Training Center in San Jose and will include a presentation and tour of the Training Center.

Details, Details:

Location:

Pipe Trades Training Center
780 Commercial Street
San Jose, CA 95112
(408) 453-6330

6:30 p.m. Networking, Refreshments

7:00 p.m. SCVS Business Meeting

8:00 p.m. Presentation and Tour of the Pipe Trade Training Center

9:00 p.m. Conclusion

RSVP:

Larry Bethel
(408) 735-3303 / bethell@asme.org

Directions:

From 101, take the OAKLAND RD exit toward 13TH ST. From OAKLAND RD, turn RIGHT onto COMMERCIAL ST.

The Pipe Trades Training Center in San Jose meets the challenge of change by providing interested men and women a unique opportunity to learn the skills that give them an extraordinary advantage over non-union workers



OUR MISSION: To advance the mechanical engineering profession by providing opportunities for our members to develop professional contacts and mentor relationships, promote awareness of our profession, and expose our membership and the community to our innovative contributions to regional industries.

Advertisements Welcome!

To fulfill our mission of informing and educating our membership, we encourage advertisements in our newsletter. This also allows prospective employers and providers of goods and services to access more than 2,000 mechanical engineers around the San Francisco Bay Area. The revenue enables our section to cover operating expenses. Here are our bargain rates for ads:

Business Cards (1/12 page): \$25.00

1/8 page: \$40.00

1/4 page: \$80.00

1/2 page: \$150.00

Full page: \$300.00

Please contact Larry Bethel <bethell@asme.org> or Kwee-Yan Teh <tehk@stanford.edu> for details.

Message from the Chair...

The tragic loss of the space shuttle and its crew has started a round of debate about the purpose of the shuttle program. In fact, the entire scope of NASA's mission and space exploration is being questioned. The cost, in both dollars and lives, is being weighed relative to other programs and needs of our nation. These questions and decisions are not easy.

Our ability to ask the questions, and provide answers that guide our nation's programs, is a testament to our profession, and to our strength as a nation. Locally, there are many engineers in NASA and in Lockheed Martin involved with the space program. They certainly have my respect for their accomplishments. I'm sure they will lead us through this difficult time.

There are also many engineers who are still unemployed or under-employed due to the general economic slowdown. And there are many parents worrying about the looming budget deficits and their impact on the school systems. They may feel that space exploration funds are better spent on domestic issues.

There are serious budget pressures in **all** directions. I won't begin to guess what the future holds. But I do trust the engineering profession that will guide NASA into the future.

Though not many of us can work on the space program, we **can** all serve as volunteers in the Discover'E' program, the FIRST robotics competition or the MATHCOUNTS contest.

ASME also offers many opportunities for you to participate. We have an active Small Business Forum, a networking group, several professional development events, and monthly business and dinner meetings. We recently held the 'A Day at the Capitol' in Sacramento. These are all opportunities for you to act, to speak, or to listen. I hope you will join in.

Respectfully yours,
Larry Bethel, Chairman, Santa Clara Valley Section, ASME



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The following has been quoted from the Constitution of the American Society of Mechanical Engineers, revised to November 16, 2001.

Article C5.1.2: The provisions of the Constitution and By Laws and Society Policies established by the Board of Governors of the Society shall govern the procedure of all units of the Society but no action or obligation of such units shall be considered an action or obligation of the Society as a whole.