



# The Engineering *INDEPENDENT*

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## IEEE Los Angeles Area Consultants' Network

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<http://www.adobe.com/acrobat/>. The October 98 issue is also published in HTML to allow members time to get set up with Acrobat.

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### In This Issue

Riding the career wave, but worried about the wipe-out? Come to The Lakes in El Segundo on October 20th to hear Paul R. Pease address ways to get and keep your career on track (p. 1).

LAACN is looking for a few good engineers ... to fill important elective and appointive offices for 1999 (p. 2).

Network Chair Kip Haggerty provides his unique perspective on how the LAACN looks today, and what questions we face for the future (p. 3).

Learn to better integrate your technical and business skills at a one-day workshop in Anaheim November 13th, sponsored by ASME (p. 4).

Bill Limburg brings his 24+ years of consulting experience in electromagnetic compatibility, analog circuit design, RF circuit design and electro-optical system design to LAACN (p. 4).

Kip Haggerty has seen the future, and batteries are definitely included. Find out about the latest in electric vehicle design in Kip's report from the IEEE's Los Angeles National Media Briefing, "Engineering the EV Future" (p. 4).

LAACN has adjusted the dues amount for those who join midway through the membership year. Find out what's changing, and why (p. 4).

Engineering doesn't always live up to its sedate -- dare we say boring? -- public image. Add your own war stories to our new series on "Excitement in Engineering" (p. 7).

*Editor's Note: Our series on "Best Practices" in consulting and our Resource of the Month feature will return next month.*

## "How to Achieve Success Without Burning Out" Is the Topic for October 20th Meeting in El Segundo

Harry L. Staubs <Harry\_L-Staub@Lamg.com>

Paul R. Pease is a stimulating, dynamic, humorous speaker who is a member of the National Speakers Association. His topic for the October 20th joint meeting of LAACN and IEEE's South Bay-Harbor and Santa Monica sections is "How To Achieve Success Without Burning Out!"

Paul will address this career enhancement / development topic that will tell you as an old or new engineer how to get and keep your career on track. If your career or business seems overwhelming or if you would like to regain more control over them, this is the talk for you.

Paul's presentation will address these key issues:

- Taking Time Out
- Rethinking Success, Goals, and Failure
- Creating a Successful Strategy
- Controlling Daily Problems
- Executing the Plan

He will discuss how to avoid burnout without quitting.

Paul is the author of "Building a Small Blue Chip Business." He has 20 years business experience in sales, marketing and planning as a Manufacturers Representative specializing in industrial automation. Paul holds a BS ME from Purdue University. His work experience includes Illinois Tool Works and Hughes Aircraft Company. Based on his learning from 40 hour work days, 60 hour work weekends, and other stress filled work moments, Paul will help you to stay on track without burning out!

Paul has helped major companies with their Emerging Technology Projects including Disneyland, NASA, Southern California Edison, LA MTD, and Boeing. He is a noted trainer and presenter. He has sold over \$75 million projects and products to over 500 customers in the telecommunications, electric utility, entertainment, aerospace, computer, oil, and food product industries. You will be sure to come away from his talk clearly motivated to new direction and action!

<b>Who:</b>	Paul R Pease, National Speaker Association Member; BSME, Purdue; Manufacturer's Representative
<b>What:</b>	How To Achieve Success Without Burning Out!
<b>When:</b>	Tuesday, October 20th, 1998 6:30 PM Networking / Social - 7:00 PM Dinner - 8:00 PM Speaker
<b>Where:</b>	The Lakes @ El Segundo, 400 S. Sepulveda Blvd., El Segundo, CA 90245 (see map on page 7)
<b>Details:</b>	Prior Reservations: By October 16, 1998. Call Harry L. Staubs, 310-830-9128, or email: Harry_L_Staub@Lamg.com (Reservations are financial commitments.)
<b>Cost:</b>	\$ 15 includes tax and tip
<b>Jointly Sponsored By:</b>	Los Angeles Area Consultants Network, IEEE South Bay-Harbor & Santa Monica Sections with American Institute of Aeronautics & Astronautics (AIAA), California Synergistic Acquisition Technology-Transfer (CALSAT) Project and Power Engineering Section - LAC Chapter

## The On-line Bulletin of the Los Angeles Area Consultants' Network

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The discussion of any legal issues in an article in this publication is presented as educational material only. The editor, the IEEE and the LAACN, and their officers take no responsibility for any statements made in this publication regarding applicability to existing laws. Always seek the advice of an attorney in any legal matter.

**Dues** are \$50 per calendar year. New member dues are: \$50 for calendar year (in time for listing in the national directory) or \$40 for remainder of calendar year (mid year addition to national web directory). Please make checks out to IEEE-LAACN and send to the treasurer.

## Call for Nominations and Volunteers

*Kip Haggerty* <[k.haggerty@ieee.org](mailto:k.haggerty@ieee.org)>

Annual elections for the network officers will be held in conjunction with the November newsletter, finishing at the Annual Business Meeting. Candidates for elective office must be IEEE members of Member, Senior Member, or Fellow grade (40 of our 47 members are eligible to hold elective office).

The elective offices are:

- Chair
- Vice-Chair
- Treasurer
- Secretary (may be combined with Treasurer per IEEE policy)

IEEE has requested that we nominate 2-3 candidates per position and hold a contested election. We may combine Secretary and Treasurer if we lack at least one candidate per office. Please volunteer to run or recommend someone for office by contacting: Mort Smith, Nominating Committee Chair

29344 Whitley Collins Drive  
Rancho Palos Verdes, CA 90275  
Phone: (310) 377-6501  
Fax: (310) 541-6101  
Email: [mjjsconslt@aol.com](mailto:mjjsconslt@aol.com)

For information on the duties of an officer or the election process, please see the relevant Bylaws Section.

1. Article IV - Executive Committee and Officers
2. Article V - Nominations and Elections

**Procedures:** Candidates must provide appropriate candidate statements and biographies no later than close of business Friday, 30 October 1998.

Candidate biographies and statements shall be no longer than 150 words in

length for each. If either is longer than 150 words, it will be edited by the Nominating Committee. Candidates are also asked to submit a list of IEEE offices held and dates served which will be printed, but not counted as part of the 150 word biography.

Candidate statements and biographies may be submitted in advance of the required date. If possible, these should be submitted by email to the Nominating Committee Chair Mort Smith at [mjjsconslt@aol.com](mailto:mjjsconslt@aol.com) so that they can be published in the November LAACN Newsletter. Candidates must provide current contact information: IEEE Member number, mail address, phone, e-mail and fax.

Note: the 1998 Los Angeles Council Candidate statements are posted on the Council web site and provide samples of candidate statements, biographies, and IEEE service listings.

We would also like to have other members or affiliate members volunteer for appointed positions. Appointed positions can include:

- Business Development Chair
- Electronic Communications Chair (Webmaster)
- Membership Chair
- Newsletter Editor
- Nominating Committee Chair
- Political/Legal Affairs
- Professional Development Chair
- Referral Committee Chair
- Subnetwork Chairs (Run local geographic area or special interest meetings)

Thanks for your interest and support.

## How Do You Like Our New Look?

This edition of *The Engineering INDEPENDENT* is being published both in its traditional web-page format, and in a new three-column version as an Adobe Acrobat Portable Document Format (PDF) file. The Adobe Acrobat Reader software needed to view the PDF version can be downloaded free from <http://www.adobe.com>. Let us know what you think of our new format!

## Chair's Column

Kip Haggerty <k.haggerty@ieee.org>

In my candidate statement last year, I promised to improve our advertising efforts, to reestablish the subnetworks to better serve our members, and to work for a better integration of the local and national networks. I made these campaign promises before being asked to run for Chair of the Los Angeles Council to get the Council back on track after the IEEE Board of Directors ordered a reorganization. I have been swamped with Council responsibilities. In spite of my time commitments to the Council, we have started two subnetworks and put all of our members and affiliates into the IEEE National Directory of Consultants.

Thanks go out to Harry Staubs and George Huling for volunteering to serve as the South Bay and Ventura Area Subnetwork Chairs, respectively. We have held one meeting in Thousand Oaks, two in El Segundo, one miniconference in Downey, and cosponsored a booth at Wescon with OCCN in Anaheim. Thanks also go out to Leslie Haggerty for improving the national web directory search engine and enabling LAACN to demonstrate the value of putting all of our members into the directory. The national directory, thanks to Leslie's clever programming, now serves both as a national directory and as our LAACN directory making the local directory sustainable. We have the added benefit of handing out the professional looking national directories and knowing that all our members are in it.

I have found the printed directory extremely useful when asked for suggested referrals. I gave the directory to the interested individual and pointed out several LAACN members with skill sets related to his needs. I also cited a couple of OCCN members, but they were not listed in the national directory. I referred him to the OCCN web page. Who do you think he called first?

Now comes the question of what direction we should go next year. I am prohibited from serving a third year by our Bylaws, IEEE policy, and other time commitments. Treasurer Scott Miller will be unable to serve another term because he is running for Los Angeles Council Chair. We have lost last years Vice Chair and Secretary (Clark Bell and Ed Conrow) to editorships in technical and management journals. Many of our members have other positions of responsibility. Bob Eisenhart is Conference Chair for the MTT Symposium slated for June 1998 in Anaheim. Bob Gauger is Chair of the national network. Ralph Hileman, Ed Carl, and Harry Staubs are officers of OCCN. Leslie Haggerty is running for PACE Chair of the South Bay Harbor Section. Needless to say, the field for elective office in LAACN is wide open and waiting for members with a vision of what we should do next year to step forward and ask the network members for their vote. Please feel free to contact me if you wish to discuss your ideas for the network or are considering running for office, but are not sure.

Lastly, as food for thought, here are the demographics of LAACN. We have 47 members and affiliates scattered from San Diego to Santa Barbara. Of those, 6 are affiliates and 41 are members of the IEEE broken down as follows:

- 1 Associate Member
- 26 Members
- 10 Senior Members
- 4 Fellows (3 of which are in microwave engineering)

Geographically, we have:

- 2 members in San Diego (1 of which is a member of OCCN)
- 7 members in Orange County (4 of which are members of OCCN)
- 19 members in the West Side - South Bay - Long Beach

area (1 of which is a member of OCCN)

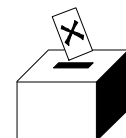
- 4 members in Los Angeles - San Gabriel Valley - Mid Cities area (1 of which is a member of OCCN)
- 4 members in the Inland Empire (3 of which are members of OCCN)
- 4 members in the San Fernando Valley
- 7 members in Ventura and Santa Barbara Counties

with 10 of our members also holding membership in OCCN.

By contrast OCCN has about 50 consulting members and a dozen associates (basically a newsletter subscription). Of the consulting members, they have:

- 2 members in San Diego County
- 33 members in Orange County
- 6 members in the South Bay - Long Beach - Mid Cities area
- 4 members in Los Angeles - San Gabriel Valley - Mid Cities area
- 4 members in the Inland Empire
- 1 member in the San Fernando Valley

Between the two networks (LAACN and OCCN) we have something less than 90 network members, which is a dramatic decrease from 1-2 years ago when OCCN peaked at 140 members. My question is how can we best serve the collective needs of the remaining network members? That will be for next year's officers of the two networks to decide.



## ASME Small Business Forum Offers Workshop November 13th in Anaheim

Sue Foley, Marketing Manager, ASME  
<foleys@asme.org>

Come participate in a one day interactive Forum, sponsored by the American Society of Mechanical Engineers. You'll learn how to integrate your technical skills and develop your business acumen to successfully grow a technology-based business from the experiences of successful entrepreneurs. The small intimate setting with limited attendance will allow you to enter into discussions ranging from marketing to technology implementation to management and legal issues with a panel of highly successful entrepreneurs and experts. Don't miss this extraordinary event!

<b>What:</b>	ASME Small Business Forum, "Where Technology Meets Business."
<b>Who:</b>	<ul style="list-style-type: none"> <li>• Donald E. Bently, Founder and CEO, Bently Nevada Corporation: "Building A Marketing Program for Competitive Advantage"</li> <li>• Robert E. Koski, Founder and Chairman, Sun Hydraulics Corporation: "Using Horizontal Management to Create A Competitive Advantage With Innovation"</li> <li>• Jimmie L Bratton, Founder and Principal, Applied Research Associates: "Creating A Flexible, Productive, and Profitable Organization"</li> <li>• Alan Rither, Chief Attorney, Battelle Laboratories: "Licensing Technology to Expand Your Market."</li> </ul>
<b>When:</b>	Friday, November 13, 9:00 AM - 5:00 PM (one day workshop)
<b>Where:</b>	Anaheim Marriott Hotel, 700 West Convention Way, Anaheim CA 92802-3483
<b>Details:</b>	Seats limited, please reserve soon! For more information contact ASME International at 1-800-843-2763; (fax) 212-705-7671, or email guerrag@asme.org. Or, get more information, and even register online at <a href="http://www.asme.org/smallbiz">http://www.asme.org/smallbiz</a> . This website will be updated with the latest information on speakers and program information on a regular basis.
<b>Sponsored By:</b>	American Society of Mechanical Engineers (ASME)

## LAACN Welcomes New Member Bill Limburg

Russ Walker <rewalker@ix.netcom.com>

For more than 24 years, William R. (Bill) Limburg has been assisting clients as a consultant in the areas of electromagnetic compatibility, EMI, lightning and EMP hardening, analog and RF circuit design, and electro-optical systems design. His projects have included laser applications in metrology, non-destructive testing, and industrial control systems.

Bill, an IEEE Member, does business as Limburg Electro-Optics in Torrance. He can be reached via email at [blimburg@earthlink.net](mailto:blimburg@earthlink.net).

Please join me in extending a warm welcome to Bill from the entire network.



## LAACN Adjusts Mid-Year Dues

Russ Walker <rewalker@ix.netcom.com>

LAACN has raised its mid-year dues amount from twenty-five dollars to forty dollars. Mid-year dues apply only to members who join the network after the deadline for listing in the national printed Consultants Directory published by the Alliance of Independent Consultants Networks (AICN). Full-year dues, which apply to members who join in time for listing in the national printed directory, remain unchanged at fifty dollars.

The change to the mid-year dues amount was required to cover the cost of adding members to the national web directory. Since the local LAACN directory now searches a subset of the national database, all LAACN members must be listed in the national directory in order to appear on the local LAACN web site. Of course, inclusion in the national database also provides valuable additional exposure.

## IEEE Media Briefing Comes to L.A.: "Engineering the EV Future"

Kip Haggerty <k.haggerty@ieee.org>

On September third, the IEEE brought its annual media briefing to Los Angeles. The Spectrum Electric Vehicle (EV) Round Table and the commemoration of the Thirtieth anniversary of the "Great Cross Country Electric Car Race" between Caltech and MIT were the main events. It was hosted by Caltech with Victor Wouk serving as the Master of Ceremonies. As the Los Angeles Council Chair, I was invited to attend and represent the local IEEE membership.

The EV Round Table was not open to the public, but segments of the discussion will be broadcast afterwards on the Spectrum web page at: <<http://www.spectrum.ieee.org/>> and the EV Round Table will be featured in detail in the December issue of *Spectrum*.

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## “Engineering the EV Future”

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The commemoration of the race included a Caltech Seminar in the afternoon entitled "Driving EVs Cross-Country: 1968, 1998, 2028." Between the two programs was an EV ride and drive opportunity.

The EV Round table was opened by John Dunlap, III, the Chair of the California Air Resources Board (CARB). CARB regulations mandate that ten percent of vehicles sold in California starting in 2003 must be zero emission vehicles (ZEV) which means zero tailpipe emissions. Currently under consideration by CARB is granting of some partial credits for hybrid electric vehicles (HEVs). The intent of the regulations are to get the market started for EVs and then let market forces take over.

The reason for the regulations was the assessment by CARB that clean air goals cannot be achieved without putting a significant percentage of ZEVs (EVs in the near-term) into the vehicle mix in the Los Angeles Metropolitan area. In answer to the ubiquitous question of whether or not EVs just transfer the pollution from the tailpipe to the utility smoke stack, Mr. Dunlap pointed out that their studies show significant pollution reductions.

The factors behind this reduction include degradation of vehicle pollution control systems over time, the ease of controlling pollution at a centralized electric generating plant versus millions of individual cars, and the pollution from the total fuel cycle. The pollution associated with gas cars is not just burning the fuel. It also includes emissions from each time the gas is exposed to the atmosphere when moving it from one tank to another. In the afternoon session, Mr. Dunlap pointed out that gas cars are ninety percent cleaner today than thirty years ago and gave the following figures:

- 1970: 141 first stage smog alerts
- 1997: 1 first stage smog alerts

Robert Stempel, a former Chairman of General Motors and current Chairman and Executive Director of Energy Conversion Devices, Inc. spoke on trends in the industry, gave an overview of EV/HEV programs by the automakers, and gave an overview of the industry approach. In short, they are being cautious because they cannot risk producing a poor power train and gas cars are tough competitors. The industry is currently in the low volume test, which is why EVs are available for lease and not purchase.

In the afternoon session, Mr. Stempel pointed out the wide variety of uses to which EV technology could be applied, including electric assist bicycles, scooters, and local delivery vans. During lunch, he remarked that EV local delivery vans achieve one-sixth of the operating costs of current vans and dramatically improve air quality due to the facts that the engines are shut off at every stop and the typical distance driven is about thirty miles.

Professor C. C. Chan, Electronic Engineering Department Head at the University of Hong Kong spoke extensively on the need for EVs in developing nations and China in particular. He presented technical material showing that an EV uses two-thirds as much energy as a gas car in the congested traffic conditions of Hong Kong. He also provided the most sobering statistic of the day. Pollution in Hong Kong is so severe that the life expectancy of traffic cops is 55.

Professor Chan was recognized as having traveled the farthest to participate in the Round Table and was the subject of an extensive interview after lunch by Channel 18. He is also slated to be the Chair of the Sixteenth Electric Vehicle Symposium in Beijing, China.

David C. Holloway, Professor of Mechanical Engineering at the University of Maryland and 1998 President of the Society of

Automotive Engineers presented the view from academia. He was quick to point out that the population size and growth in China means that they cannot roll out gas cars for use by their citizens or they will have a horrendous pollution problem. He also outlined the hurdles facing EVs, including that they must work the first time, the range needs improvement, the infrastructure must be put in place, and gas prices are at an all-time low (adjusted for inflation).

Bruce Kopf from Ford Motor Company presented the car manufacturer's view of the EV market. Ford is currently the leader in the US for alternative fuel vehicles with about ninety percent of all US alternative fuel vehicles. Ford has been focused on the propulsion system technology and used the Ranger pickup as its EV test platform because of its use in vehicle fleets.

EVs are expected to be a significant alternative in the personal transportation market with battery, hybrid, and fuel cell designs all coexisting in the market. The coexistence of the competing fuel approaches causes confusion among customers and he pointed out that people need to drive an EV to be convinced that it will work for them.

Lastly, he emphasized that the number one problem is not technology, but is cost. This sentiment was echoed by other participants.

Scott Briasco of the Los Angeles Department of Water and Power (DWP) discussed the DWP Quick Charge LA Program. The objective of the program is to establish a network of 184 EV charging stations around Los Angeles. About eighty percent of the charging stations have been completed. The charging stations are currently free and the spaces at LAX (near Terminal 1) provide both free charging and free parking. The individual stations provide both

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## “Engineering the EV Future”

*Continued from page 5*

inductive and conductive charging connectors at 220 Volts.

David Hermance, the General Manager of the Power Train Group at the Toyota Technical Center in Los Angeles, spoke mostly about their

strategy of using HEVs to help advance technology for EVs and outlined their current EV, the RAV4. A small sport utility vehicle utilizing Nickel Metal Hydride (NiMH) batteries, the RAV4 has a range of about 130 miles.

Toyota has an HEV on the market in Japan called the Prius that they plan to redesign for the US and bring to market around the middle of 2000. The power train uses an electric motor and 1.5 liter engine both connected to a planetary gear. From a stop, the car initially accelerates using the electric motor only. At about 8 to 10 mph (13 to 16 km/hr), the gas engine is started and used in parallel with the electric motor to provide acceleration and also to charge the vehicle battery pack. At constant speeds, the electric motor shuts off and the car is powered solely by the gas engine. The expected gas mileage of the US version is likely to be between 50 and 60 mpg (21 to 25 km/l).

I drove the Prius during the EV ride and drive and questioned David Hermance on how the power train worked. Turning the gas engine on and off appeared to be an awkward design to me, however, as I drove the car around Pasadena, I did not notice the gas engine start and stop as I accelerated and stopped. The engine has no starter motor. One of the two motor generator sets is used to spin up the engine to appropriate speed and then the control computer allows fuel to enter the engine and it just "runs" rather than "starts" in the sense of a conventional gas car.

I also drove an EV-1 during the EV ride and drive. It also is an impressive machine limited in range by its lead acid batteries. This November, a

NiMH version will be released with a rumored \$100/month increase in the lease cost. The range of the NiMH EV-1 is expected to be approximately twice the lead-acid version or about 160 to 180 miles (260 to 290 km). The EV-1 has great acceleration from a dead stop and is fun to drive. The heat pump air conditioner cooled the car down nicely which was a necessity in the mid-day heat. I did not get a specific answer to my question about range reduction due to use of the air conditioner, rather the salesman riding along stated that it adds a small load on the batteries.

The afternoon session featured Wally Kappel, who led the Caltech electric car team in their race against a team from MIT in 1968, and Kris Trexler, who planned and executed a trip from Los Angeles to Detroit in his EV-1 for the fun and adventure of it. They constituted the 1968 and 1998 parts of the Driving EVs Cross-Country theme.

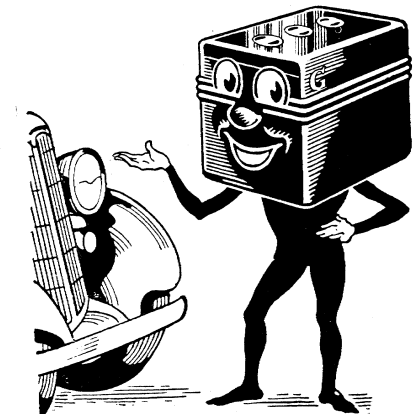
The 1968 race was filled with difficulties and jerry-rigged equipment. Both teams ruined their engines once at a recharging station by accidentally hooking the alligator clips on with the wrong three phase polarity. Caltech wrecked theirs early in the race and replaced it losing considerable time. MIT ruined their engine 100 miles from their finish line at Caltech. The difference between the two vehicles was that Caltech's had a clutch which saved the rest of their power train whereas MIT did not. The MIT team concluded that they could not replace all the damaged parts in time and chose instead to tow the car across the finish line with the five minute per mile penalty. With the added pad of the penalty time assessed to MIT, Caltech was able to beat the clock by about thirty minutes and win the race.

In contrast, Kris Trexler's trip went without a hitch. He executed a well-planned itinerary with charging points spaced out roughly sixty to seventy miles apart, which was also his daily

mileage. He was not trying to run the vehicle to its limits, but rather have an enjoyable trip across the country and give his dad in Kansas the opportunity to drive his EV-1. Kris used his daily charging stops to record his progress on his Macintosh Powerbook and uploaded his progress daily to his web site <<http://www.ev1.pair.com/>>.

The final speakers included Robert Stempel (Energy Conversion Devices), John Dunlap, III (CARB), Paul B. MacCready (AeroVironment), and Eric Brooks (AeroVironment). They each addressed different aspects of where EV technology will be in 2028. The predictions included all electric special purpose vehicles (commuter cars, local delivery vans, etc.), HEVs, and alternative fuels such as compressed natural gas and clean diesel. Fuel cells may still be experimental. Dr. MacCready also announced the AeroVironment Quick Charge system prototype which, if adopted would make filling up with electricity as convenient and nearly as fast as filling up with gas.

In summary, the biggest hurdle to EV adoption is reducing the cost. Significant market niches exist even for lead acid battery technology. The key will be making EVs cost competitive with gas cars. I want one.



# Writing Code While Dodging Hurricanes Suggests New "Excitement in Engineering" Series

Russ Walker <rewalker@ix.netcom.com>

As I type this into my trusty, battle-scarred laptop in a hotel room overlooking the Superdome, the mayor of New Orleans comes on TV to announce a citywide evacuation. Hurricane Georges is coming to town, and everyone else who can is leaving. I'll catch the next shuttle to the airport -- as soon as I debug one more module.

I'm here in Georges' bulls-eye, instead of in L.A. waiting for the next regularly scheduled earthquake, because of -- what else? -- my consulting practice. My client had enough sense to hire me, but not quite enough sense to avoid holding a meeting on the Gulf Coast at the height of hurricane season.

In the afterglow of a successful demo last night, I promised that I'd have a couple of "minor improvements" incorporated into the system before the end of the meeting. In the cold gray light of day, with ominous satellite images on the Weather Channel and even more ominous

compiler errors on my LCD screen, I'm feeling a little less cocky.

It strikes me that this episode doesn't quite fit with the public's image of engineering as a, shall we say, less than pulse-pounding activity. The popular view is that changing a calculator battery is a peak experience for someone in our profession. Even in movies like "Apollo 13," where engineers get to help save the day, it's the astronauts in the capsule who face imminent peril, while the techies back at Mission Control confront nothing more dangerous than paper cuts and bad coffee.

My career has, thankfully, seldom been life-threatening, but it has nearly always kept my attention and occasionally even quickened my pulse. Technical work has taken me down into ICBM control bunkers, onto high-security military bases and inside Federal prisons (as a visitor, not a long-term resident!). I've traveled on R&D business to exotic locales like Paris, Hong Kong and Solvang. I've

had a front-row seat for missile test launches at Vandenberg and shuttle landings at Edwards. I spent one "dark and stormy night" bailing water from a flooded computer room by the light of emergency lanterns. And I suspect that most of you have far more thrilling experiences to relate.

I'd like to invite you, the readers of this newsletter, to share your personal war stories. We'll call it the "Excitement in Engineering" series. Email me your account of the most adventurous episode in your own, or a colleague's, career. With the collective years of experience represented by the LAACN membership, I'm betting there are some pretty wild tales just waiting to be told.

Right now, though, if you'll excuse me, I've got some software to finish, and a plane to catch. My laptop battery's running low, and outside the window, I think the wind is picking up.

**Directions to the October Meeting**

The Lakes at El Segundo (the upper of the two locations shown) is at 400 S. Sepulveda Blvd., El Segundo, CA. It is on the east side of Sepulveda between El Segundo and Rosecrans (just north of Hughes Way). We will be meeting in the banquet room.



# The Engineering *INDEPENDENT*

## IEEE Los Angeles Area Consultants' Network

Special Edition  
WESCON/98

### Network Serves Consultants Throughout Southern California

The Los Angeles Area Consultants' Network (LAACN) offers professional development opportunities, referral and directory services, and networking forums for Southern California engineering and technical consultants, regardless of their field of specialization or IEEE membership status.

LAACN members enjoy a range of benefits, including:

- *Free* listing in a national consultants' directory.
- Periodic local meetings to hear interesting speakers and network with fellow consultants.
- Inclusion in LAACN's professionally promoted web, email and telephone referral services.
- A *free* mini-web site to advertise the member's business.
- Email services to distribute announcements and referrals, with "spam" screened out.

While drawing primarily from Los Angeles County, LAACN extends membership to consultants from the Mexican border north to San Luis Obispo, Kern and Inyo counties. LAACN shares some of this geography with the Orange County Consultants' Network (OCCN), and the two networks frequently work together to serve their members (some of whom belong to both organizations).

### LAACN Offers *Free* Consultant Referrals via Web, Phone, Email & Print

Anyone looking for a consultant in electrotechnology or a related field can take advantage of several no-fee referral resources provided by the Los Angeles Area Consultants' Network. Companies, research facilities, government agencies, forensic providers, investors, lenders and others who need fast access to independent experts can make their search faster and more successful by using these services.

The LAACN's web site at <http://www.laacn.org> offers a browseable consultant directory and a searchable directory database. Thanks to advanced search software developed by LAACN member Leslie Haggerty, searches can include various criteria such as keywords for engineering specialties or applications experience, acceptance of contract work, geographic area, foreign technical language proficiency and availability for international assignments. Many directory entries include links to the consultant's web site for more information. Traffic on the LAACN site has grown to several thousand hits per month.

LAACN also operates a unique telephone referral line at (213) 243-8583, or requests can be emailed to [laacn-referrals@ieee.org](mailto:laacn-referrals@ieee.org). Copies of a national consultants' directory that includes all LAACN members can be obtained free of charge from the network upon request.

### "Regional Directory – Local Meetings" Strategy Helps Network Members

A 1998 strategy of "Regional Directory – Local Meetings" for the Los Angeles Area Consultants' Network means a new emphasis on holding meetings close to where members live and work. To implement this strategy, LAACN has restarted a series of "subnetworks." Subnetwork Chairs are currently located in Ventura County and the South Bay, with additional locations planned.

LAACN also holds joint meetings with other professional society groups. In June, the network joined with IEEE's South Bay Harbor Section for a program on "Year 2000 Opportunities in Embedded Controllers."

#### LAACN Officers/Volunteers

**Chair:** Kip Haggerty, (310) 679-2440  
[k.haggerty@ieee.org](mailto:k.haggerty@ieee.org)

**Vice Chair:** Wiley Greiner, (310) 450-8500  
[W.Greiner@LAsoft.com](mailto:W.Greiner@LAsoft.com)

**Treasurer:** Scott Miller, (562) 431-7493  
[s.e.miller@ieee.org](mailto:s.e.miller@ieee.org)

**Secretary:** Louis Ungar, (310) 301-6662  
[testable1@aol.com](mailto:testable1@aol.com)

**Editor:** Russ Walker, (562) 497-1836  
[rewalker@ix.netcom.com](mailto:rewalker@ix.netcom.com)

#### To Join LAACN

IEEE members who are in private practice or consulting and are not representatives of a contract engineering firm or "job shop" may join LAACN by sending a check for dues (payable to IEEE-LAACN) and your IEEE number to the current Treasurer. Non-IEEE members require approval by the Executive Committee; send a dues check to the current Treasurer and a resume to the current Chair. Dues are currently \$50 per calendar year.

#### To Find a Consultant

To find a consultant through LAACN, do any of the following:

1. Visit the LAACN web site at <http://www.laacn.org>.
2. Call the referral line at (213) 243-8583.
3. Send email to [laacn-referrals@ieee.org](mailto:laacn-referrals@ieee.org).
4. Stop by the LAACN/OCCN booth at WESCON/98 for a copy of the Alliance of IEEE Consultants' Networks (AICN) 1998 *Directory of Electrotechnology Consultants*.



# The Engineering *INDEPENDENT*

Volume 6  
Number 7  
October 1998

## IEEE Los Angeles Area Consultants' Network

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1. Are you riding the career wave, but worried about the wipe-out? Come to The Lakes in El Segundo on October 20th to hear nationally known speaker and author Paul R. Pease address ways to get and keep your career on track. The program, geared to both new and experienced engineers, is highlighted this month in our [lead article](#).
  2. LAACN is looking for a few good engineers ... to fill important elective and appointive offices for 1999. Nominations and candidate statements are due by October 30th, with elections slated for November. To nominate a candidate, or to volunteer yourself, start by reading the [Call for Nominations](#).
  3. Network Chair Kip Haggerty provides his unique perspective on how the LAACN looks today, and what questions we face for the future, in this month's [Chair's Column](#).
  4. Learn to better integrate your technical and business skills at a one-day workshop in Anaheim November 13th, sponsored by The American Society of Mechanical Engineers (ASME). Seats are limited, so make your reservations today for this interactive forum, ["Where Technology Meets Business."](#)

5. Bill Limburg brings his 24+ years of consulting experience in electromagnetic compatibility, analog circuit design, RF circuit design and electro-optical system design to LAACN. Please join in extending Bill a hearty [new-member welcome](#).
  6. Kip Haggerty has seen the future, and batteries are definitely included. Find out about the latest in electric vehicle design in Kip's report from the IEEE's Los Angeles National Media Briefing, ["Engineering the EV Future."](#)
  7. LAACN has adjusted the dues amount for those who join midway through the membership year. Find out what's changing, and why, with our [mid-year dues policy](#).
  8. As your Newsletter Editor races to make the last plane out of New Orleans before the hurricane hits (typing code into his laptop as he goes), it occurs to him that engineering doesn't always live up to its sedate -- dare we say boring? -- public image. Add your own war stories to our new series on ["Excitement in Engineering."](#)
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## **"How to Achieve Success Without Burning Out" Is the Topic for October 20th Meeting in El Segundo**

*Harry L. Staubs*

**Paul R. Pease is a stimulating, dynamic, humorous speaker who is a member of the National Speakers Association. His topic for the October 20th joint meeting of LAACN and IEEE's South Bay-Harbor and Santa Monica sections is "How To Achieve Success Without Burning Out!" Paul will address this career enhancement / development topic that will tell you as an old or new engineer how to get and keep your career on track. If your career or business seems overwhelming or if you would like to regain more control over them, this is the talk for you.**

**Paul's presentation will address these key issues:**

- **Taking Time Out**
- **Rethinking Success, Goals, and Failure**
- **Creating a Successful Strategy**
- **Controlling Daily Problems**
- **Executing the Plan**

**He will discuss how to avoid burnout without quitting.**

**Paul is the author of "Building a Small Blue Chip Business." He has 20 years business experience in sales, marketing and planning as a Manufacturers Representative specializing in industrial automation.**

Paul holds a BS ME from Purdue University. His work experience includes Illinois Tool Works and Hughes Aircraft Company. Based on his learning from 40 hour work days, 60 hour work weekends, and other stress filled work moments, Paul will help you to stay on track without burning out! Paul has helped major companies with their Emerging Technology Projects including Disneyland, NASA, Southern California Edison, LA MTD, and Boeing. He is a noted trainer and presenter. He has sold over \$75 million projects and products to over 500 customers in the telecommunications, electric utility, entertainment, aerospace, computer, oil, and food product industries. You will be sure to come away from his talk clearly motivated to new direction and action!

Who:	Paul R Pease, National Speaker Association Member; BSME, Purdue; Manufacturer's Representative
What:	How To Achieve Success Without Burning Out! <i>Is Your Career or Business Overwhelming You?</i> <i>Would You Like to Regain Control?</i>
When:	Tuesday, October 20th, 1998 6:30 PM Networking / Social 7:00 PM Dinner 8:00 PM Speaker
Where:	The Lakes @ El Segundo (see map) 400 S. Sepulveda Blvd. El Segundo, CA 90245
Details:	Prior Reservations: By October 16, 1998 Call Harry L. Staubs, 310-830-9128, or email: Harry_L_Staub@Lamg.com (Reservations are financial commitments.)
Cost:	\$ 15 includes tax and tip
Jointly Sponsored By:	Los Angeles Area Consultants Network, IEEE South Bay-Harbor & Santa Monica Sections with American Institute of Aeronautics & Astronautics (AIAA), California Synergistic Acquisition Technology-Transfer (CALSAT) Project and Power Engineering Section - LAC Chapter

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## Call for Nominations and Volunteers

*Kip Haggerty*

Annual elections for the network officers will be held in conjunction with the November newsletter, finishing at the Annual Business Meeting. Candidates for elective office must be IEEE members of Member, Senior Member, or Fellow grade (40 of our 47 members are eligible to hold elective office). The elective offices are:

- Chair
- Vice-Chair
- Treasurer
- Secretary (may be combined with Treasurer per IEEE policy)

IEEE has requested that we nominate 2-3 candidates per position and hold a contested election. We may combine Secretary and Treasurer if we lack at least one candidate per office. Please volunteer to run or recommend someone for office by contacting:

Mort Smith, Nominating Committee Chair

29344 Whitley Collins Drive

Rancho Palos Verdes, CA 90275

Phone: (310) 377-6501

Fax: (310) 541-6101

Email: mjsconslt@aol.com

For information on the duties of an officer or the election process, please see the relevant Bylaws Section.

1. Article IV - Executive Committee and Officers
2. Article V - Nominations and Elections

**Procedures:** Candidates must provide appropriate candidate statements and biographies no later than close of business Friday, 30 October 1998. Candidate biographies and statements shall be no longer than 150 words in length for each. If either is longer than 150 words, it will be edited by the Nominating Committee. Candidates are also asked to submit a list of IEEE offices held and dates served which will be printed, but not counted as part of the 150 word biography. Candidate statements and biographies may be submitted in advance of the required date. If possible, these should be submitted by email to the Nominating Committee Chair Mort Smith at mjsconslt@aol.com so that they can be published in the November LAACN Newsletter. Candidates must provide current contact information: IEEE Member number, mail address, phone, e-mail and fax. Note: the 1998 Los Angeles Council Candidate statements are posted on the Council web site and provide samples of candidate statements, biographies, and IEEE service listings.

We would also like to have other members or affiliate members volunteer for appointed positions. Appointed positions can include:

- Business Development Chair
- Electronic Communications Chair (Webmaster)
- Membership Chair
- Newsletter Editor
- Nominating Committee Chair
- Political/Legal Affairs
- Professional Development Chair

- Referral Committee Chair
- Subnetwork Chairs (Run local geographic area or special interest meetings)

Thanks for your interest and support.

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## Chair's Column

*Kip Haggerty*

In my candidate statement last year, I promised to improve our advertising efforts, to reestablish the subnetworks to better serve our members, and to work for a better integration of the local and national networks. I made these campaign promises before being asked to run for Chair of the Los Angeles Council to get the Council back on track after the IEEE Board of Directors ordered a reorganization. I have been swamped with Council responsibilities. In spite of my time commitments to the Council, we have started two subnetworks and put all of our members and affiliates into the IEEE National Directory of Consultants.

Thanks go out to Harry Staubs and George Huling for volunteering to serve as the South Bay and Ventura Area Subnetwork Chairs, respectively. We have held one meeting in Thousand Oaks, two in El Segundo, one miniconference in Downey, and cosponsored a booth at Wescon with OCCN in Anaheim. Thanks also go out to Leslie Haggerty for improving the national web directory search engine and enabling LAACN to demonstrate the value of putting all of our members into the directory. The national directory, thanks to Leslie's clever programming, now serves both as a national directory and as our LAACN directory making the local directory sustainable. We have the added benefit of handing out the professional looking national directories and knowing that all our members are in it.

I have found the printed directory extremely useful when asked for suggested referrals. I gave the directory to the interested individual and pointed out several LAACN members with skill sets related to his needs. I also cited a couple of OCCN members, but they were not listed in the national directory. I referred him to the OCCN web page. Who do you think he called first?

Now comes the question of what direction we should go next year. I am prohibited from serving a third year by our Bylaws, IEEE policy, and other time commitments. Treasurer Scott Miller will be unable to serve another term because he is running for Los Angeles Council Chair. We have lost last years Vice Chair and Secretary (Clark Bell and Ed Conrow) to editorships in technical and management journals. Many of our members have other positions of responsibility. Bob Eisenhart is Conference Chair for the MTT Symposium slated for June 1998 in Anaheim. Bob Gauger is Chair of the national network. Ralph Hileman, Ed Carl, and Harry Staubs are officers of OCCN. Leslie Haggerty is running for PACE Chair of the South Bay Harbor Section. Needless to say, the field for elective office in LAACN is wide open and waiting for members with a vision of what we should do next year to step forward and ask the network members for their vote. Please feel free to contact me if you wish to discuss your ideas for the network or are considering running for office, but are not sure.



Lastly, as food for thought, here are the demographics of LAACN. We have 47 members and affiliates scattered from San Diego to Santa Barbara. Of those, 6 are affiliates and 41 are members of the IEEE broken down as follows:

- 1 Associate Member
- 26 Members
- 10 Senior Members
- 4 Fellows (3 of which are in microwave engineering)

Geographically, we have:

- 2 members in San Diego (1 of which is a member of OCCN)
- 7 members in Orange County (4 of which are members of OCCN)
- 19 members in the West Side - South Bay - Long Beach area (1 of which is a member of OCCN)
- 4 members in Los Angeles - San Gabriel Valley - Mid Cities area (1 of which is a member of OCCN)
- 4 members in the Inland Empire (3 of which are members of OCCN)
- 4 members in the San Fernando Valley
- 7 members in Ventura and Santa Barbara Counties

with 10 of our members also holding membership in OCCN. By contrast OCCN has about 50 consulting members and a dozen associates (basically a newsletter subscription). Of the consulting members, they have:

- 2 members in San Diego County
- 33 members in Orange County
- 6 members in the South Bay - Long Beach - Mid Cities area
- 4 members in Los Angeles - San Gabriel Valley - Mid Cities area
- 4 members in the Inland Empire
- 1 member in the San Fernando Valley

Between the two networks (LAACN and OCCN) we have something less than 90 network members, which is a dramatic decrease from 1-2 years ago when OCCN peaked at 140 members. My question is how can we best serve the collective needs of the remaining network members? That will be for next year's officers of the two networks to decide.

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**ASME Small Business Forum Offers Workshop November 13th in Anaheim**

*[Sue Foley, Marketing Manager, ASME](#)*

**Come participate in a one day interactive Forum, sponsored by the American Society of Mechanical**

**Engineers. You'll learn how to integrate your technical skills and develop your business acumen to successfully grow a technology-based business from the experiences of successful entrepreneurs. The small intimate setting with limited attendance will allow you to enter into discussions ranging from marketing to technology implementation to management and legal issues with a panel of highly successful entrepreneurs and experts. Don't miss this extraordinary event!**

What:	ASME Small Business Forum, "Where Technology Meets Business."
Who:	<ul style="list-style-type: none"> <li>● Donald E. Bently, Founder and CEO, Bently Nevada Corporation: "Building A Marketing Program for Competitive Advantage"</li> <li>● Robert E. Koski, Founder and Chairman, Sun Hydraulics Corporation: "Using Horizontal Management to Create A Competitive Advantage With Innovation"</li> <li>● Jimmie L Bratton, Founder and Principal, Applied Research Associates: "Creating A Flexible, Productive, and Profitable Organization"</li> <li>● Alan Rither, Chief Attorney, Battelle Laboratories: "Licensing Technology to Expand Your Market."</li> </ul>
When:	Friday, November 13, 9:00 AM - 5:00 PM (one day workshop)
Where:	Anaheim Marriott Hotel, 700 West Convention Way, Anaheim CA 92802-3483
Details:	Seats limited, please reserve soon! For more information contact ASME International at 1-800-843-2763; (fax) 212-705-7671, or email <a href="mailto:guerrag@asme.org">guerrag@asme.org</a> . Or, get more information, and even register online at <a href="http://www.asme.org/smallbiz">http://www.asme.org/smallbiz</a> . This website will be updated with the latest information on speakers and program information on a regular basis.
Sponsored By:	American Society of Mechanical Engineers (ASME)

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## **LAACN Welcomes New Member Bill Limburg**

*Russ Walker*

**For more than 24 years, William R. (Bill) Limburg has been assisting clients as a consultant in the areas of electromagnetic compatibility, EMI, lightning and EMP hardening, analog and RF circuit design, and electro-optical systems design. His projects have included laser applications in metrology, non-destructive testing, and industrial control systems.**

**Bill, an IEEE Member, does business as Limburg Electro-Optics in Torrance. He can be reached via**

email at [blimburg@earthlink.net](mailto:blimburg@earthlink.net).

Please join me in extending a warm welcome to Bill from the entire network.

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## IEEE Media Briefing Comes to L.A.: "Engineering the EV Future"

*Kip Haggerty*

On September third, the IEEE brought its annual media briefing to Los Angeles. The Spectrum Electric Vehicle (EV) Round Table and the commemoration of the Thirtieth anniversary of the "Great Cross Country Electric Car Race" between Caltech and MIT were the main events. It was hosted by Caltech with Victor Wouk serving as the Master of Ceremonies. As the Los Angeles Council Chair, I was invited to attend and represent the local IEEE membership. The EV Round Table was not open to the public, but segments of the discussion will be broadcast afterwards on the Spectrum web page at: <http://www.spectrum.ieee.org/> and the EV Round Table will be featured in detail in the December issue of *Spectrum*. The commemoration of the race included a Caltech Seminar in the afternoon entitled "Driving EVs Cross-Country: 1968, 1998, 2028." Between the two programs was an EV ride and drive opportunity.

The EV Round table was opened by John Dunlap, III, the Chair of the California Air Resources Board (CARB). CARB regulations mandate that ten percent of vehicles sold in California starting in 2003 must be zero emission vehicles (ZEV) which means zero tailpipe emissions. Currently under consideration by CARB is granting of some partial credits for hybrid electric vehicles (HEVs). The intent of the regulations are to get the market started for EVs and then let market forces take over. The reason for the regulations was the assessment by CARB that clean air goals cannot be achieved without putting a significant percentage of ZEVs (EVs in the near-term) into the vehicle mix in the Los Angeles Metropolitan area. In answer to the ubiquitous question of whether or not EVs just transfer the pollution from the tailpipe to the utility smoke stack, Mr. Dunlap pointed out that their studies show significant pollution reductions. The factors behind this reduction include degradation of vehicle pollution control systems over time, the ease of controlling pollution at a centralized electric generating plant versus millions of individual cars, and the pollution from the total fuel cycle. The pollution associated with gas cars is not just burning the fuel. It also includes emissions from each time the gas is exposed to the atmosphere when moving it from one tank to another. In the afternoon session, Mr. Dunlap pointed out that gas cars are ninety percent cleaner today than thirty years ago and gave the following figures:

- 1970: 141 first stage smog alerts
- 1997: 1 first stage smog alerts

Robert Stempel, a former Chairman of General Motors and current Chairman and Executive Director of Energy Conversion Devices, Inc. spoke on trends in the industry, gave an overview of EV/HEV programs by the automakers, and gave an overview of the industry approach. In short, they are being cautious because they cannot risk producing a poor power train and gas cars are tough competitors. The

industry is currently in the low volume test, which is why EVs are available for lease and not purchase. In the afternoon session, Mr. Stempel pointed out the wide variety of uses to which EV technology could be applied, including electric assist bicycles, scooters, and local delivery vans. During lunch, he remarked that EV local delivery vans achieve one-sixth of the operating costs of current vans and dramatically improve air quality due to the facts that the engines are shut off at every stop and the typical distance driven is about thirty miles.

Professor C. C. Chan, Electronic Engineering Department Head at the University of Hong Kong spoke extensively on the need for EVs in developing nations and China in particular. He presented technical material showing that an EV uses two-thirds as much energy as a gas car in the congested traffic conditions of Hong Kong. He also provided the most sobering statistic of the day. Pollution in Hong Kong is so severe that the life expectancy of traffic cops is 55. Professor Chan was recognized as having traveled the farthest to participate in the Round Table and was the subject of an extensive interview after lunch by Channel 18. He is also slated to be the Chair of the Sixteenth Electric Vehicle Symposium in Beijing, China.

David C. Holloway, Professor of Mechanical Engineering at the University of Maryland and 1998 President of the Society of Automotive Engineers presented the view from academia. He was quick to point out that the population size and growth in China means that they cannot roll out gas cars for use by their citizens or they will have a horrendous pollution problem. He also outlined the hurdles facing EVs, including that they must work the first time, the range needs improvement, the infrastructure must be put in place, and gas prices are at an all-time low (adjusted for inflation).

Bruce Kopf from Ford Motor Company presented the car manufacturer's view of the EV market. Ford is currently the leader in the US for alternative fuel vehicles with about ninety percent of all US alternative fuel vehicles. Ford has been focused on the propulsion system technology and used the Ranger pickup as its EV test platform because of its use in vehicle fleets. EVs are expected to be a significant alternative in the personal transportation market with battery, hybrid, and fuel cell designs all coexisting in the market. The coexistence of the competing fuel approaches causes confusion among customers and he pointed out that people need to drive an EV to be convinced that it will work for them. Lastly, he emphasized that the number one problem is not technology, but is cost. This sentiment was echoed by other participants.

Scott Briasco of the Los Angeles Department of Water and Power (DWP) discussed the DWP Quick Charge LA Program. The objective of the program is to establish a network of 184 EV charging stations around Los Angeles. About eighty percent of the charging stations have been completed. The charging stations are currently free and the spaces at LAX (near Terminal 1) provide both free charging and free parking. The individual stations provide both inductive and conductive charging connectors at 220 Volts.

David Hermance, the General Manager of the Power Train Group at the Toyota Technical Center in Los Angeles, spoke mostly about their strategy of using HEVs to help advance technology for EVs and outlined their current EV, the RAV4. A small sport utility vehicle utilizing Nickel Metal Hydride (NiMH) batteries, the RAV4 has a range of about 130 miles. Toyota has an HEV on the market in Japan called the Prius that they plan to redesign for the US and bring to market around the middle of 2000. The power train uses an electric motor and 1.5 liter engine both connected to a planetary gear. From a stop, the car initially accelerates using the electric motor only. At about 8 to 10 mph (13 to 16 km/hr), the gas engine is started and used in parallel with the electric motor to provide acceleration and also to charge the vehicle battery pack. At constant speeds, the electric motor shuts off and the car is powered solely by the

gas engine. The expected gas mileage of the US version is likely to be between 50 and 60 mpg (21 to 25 km/l).

I drove the Prius during the EV ride and drive and questioned David Hermance on how the power train worked. Turning the gas engine on and off appeared to be an awkward design to me, however, as I drove the car around Pasadena, I did not notice the gas engine start and stop as I accelerated and stopped. The engine has no starter motor. One of the two motor generator sets is used to spin up the engine to appropriate speed and then the control computer allows fuel to enter the engine and it just "runs" rather than "starts" in the sense of a conventional gas car.

I also drove an EV-1 during the EV ride and drive. It also is an impressive machine limited in range by its lead acid batteries. This November, a NiMH version will be released with a rumored \$100/month increase in the lease cost. The range of the NiMH EV-1 is expected to be approximately twice the lead-acid version or about 160 to 180 miles (260 to 290 km). The EV-1 has great acceleration from a dead stop and is fun to drive. The heat pump air conditioner cooled the car down nicely which was a necessity in the mid-day heat. I did not get a specific answer to my question about range reduction due to use of the air conditioner, rather the salesman riding along stated that it adds a small load on the batteries.

The afternoon session featured Wally Kappel, who led the Caltech electric car team in their race against a team from MIT in 1968, and Kris Trexler, who planned and executed a trip from Los Angeles to Detroit in his EV-1 for the fun and adventure of it. They constituted the 1968 and 1998 parts of the Driving EVs Cross-Country theme.

The 1968 race was filled with difficulties and jerry-rigged equipment. Both teams ruined their engines once at a recharging station by accidentally hooking the alligator clips on with the wrong three phase polarity. Caltech wrecked theirs early in the race and replaced it losing considerable time. MIT ruined their engine 100 miles from their finish line at Caltech. The difference between the two vehicles was that Caltech's had a clutch which saved the rest of their power train whereas MIT did not. The MIT team concluded that they could not replace all the damaged parts in time and chose instead to tow the car across the finish line with the five minute per mile penalty. With the added pad of the penalty time assessed to MIT, Caltech was able to beat the clock by about thirty minutes and win the race.

In contrast, Kris Trexler's trip went without a hitch. He executed a well-planned itinerary with charging points spaced out roughly sixty to seventy miles apart, which was also his daily mileage. He was not trying to run the vehicle to its limits, but rather have an enjoyable trip across the country and give his dad in Kansas the opportunity to drive his EV-1. Kris used his daily charging stops to record his progress on his Macintosh Powerbook and uploaded his progress daily to his web site <<http://www.ev1.pair.com/>>.

The final speakers included Robert Stempel (Energy Conversion Devices), John Dunlap, III (CARB), Paul B. MacCready (AeroVironment), and Eric Brooks (AeroVironment). They each addressed different aspects of where EV technology will be in 2028. The predictions included all electric special purpose vehicles (commuter cars, local delivery vans, etc.), HEVs, and alternative fuels such as compressed natural gas and clean diesel. Fuel cells may still be experimental. Dr. MacCready also announced the AeroVironment Quick Charge system prototype which, if adopted would make filling up with electricity as convenient and nearly as fast as filling up with gas. In summary, the biggest hurdle to EV adoption is reducing the cost. Significant market niches exist even for lead acid battery technology. The key will be making EVs cost competitive with gas cars. I want one.

## LAACN Adjusts Mid-Year Dues

*Russ Walker*

LAACN has raised its mid-year dues amount from twenty-five dollars to forty dollars. Mid-year dues apply only to members who join the network after the deadline for listing in the national printed Consultants Directory published by the Alliance of Independent Consultants Networks (AICN). Full-year dues, which apply to members who join in time for listing in the national printed directory, remain unchanged at fifty dollars.

The change to the mid-year dues amount was required to cover the cost of adding members to the national web directory. Since the local LAACN directory now searches a subset of the national database, all LAACN members must be listed in the national directory in order to appear on the local LAACN web site. Of course, inclusion in the national database also provides valuable additional exposure.

## Writing Code While Dodging Hurricanes Suggests New "Excitement in Engineering" Series

*Russ Walker*

As I type this into my trusty, battle-scarred laptop in a hotel room overlooking the Superdome, the mayor of New Orleans comes on TV to announce a citywide evacuation. Hurricane Georges is coming to town, and everyone else who can is leaving. I'll catch the next shuttle to the airport -- as soon as I debug one more module.

I'm here in Georges' bulls-eye, instead of in L.A. waiting for the next regularly scheduled earthquake, because of -- what else? -- my consulting practice. My client had enough sense to hire me, but not quite enough sense to avoid holding a meeting on the Gulf Coast at the height of hurricane season. In the afterglow of a successful demo last night, I promised that I'd have a couple of "minor improvements" incorporated into the system before the end of the meeting. In the cold gray light of day, with ominous satellite images on the Weather Channel and even more ominous compiler errors on my LCD screen, I'm feeling a little less cocky.

It strikes me that this episode doesn't quite fit with the public's image of engineering as a, shall we say, less than pulse-pounding activity. The popular view is that changing a calculator battery is a peak experience for someone in our profession. Even in movies like "Apollo 13," where engineers get to help save the day, it's the astronauts in the capsule who face imminent peril, while the techies back at Mission Control confront nothing more dangerous than paper cuts and bad coffee.

My career has, thankfully, seldom been life-threatening, but it has nearly always kept my attention and occasionally even quickened my pulse. Technical work has taken me down into ICBM control bunkers, onto high-security military bases and inside Federal prisons (as a visitor, not a long-term resident!). I've traveled on R&D business to exotic locales like Paris, Hong Kong and Solvang. I've had a front-row seat for missile test launches at Vandenberg and shuttle landings at Edwards. I spent one "dark and stormy night" bailing water from a flooded computer room by the light of emergency lanterns. And I suspect that most of you have far more thrilling experiences to relate.

I'd like to invite you, the readers of this newsletter, to share your personal war stories. We'll call it the "Excitement in Engineering" series. Email me your account of the most adventurous episode in your own, or a colleague's, career. With the collective years of experience represented by the LAACN membership, I'm betting there are some pretty wild tales just waiting to be told.

Right now, though, if you'll excuse me, I've got some software to finish, and a plane to catch. My laptop battery's running low, and outside the window, I think the wind is picking up.

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### The On-line Bulletin

Welcome to the on-line bulletin of the LAACN. Check out the information links below for viewing, printing a paper copy, submitting an article, etc.

Think about writing an article for this bulletin... soon! Also, let us know if you or another member received a professional award, recognition, or certification lately so we can mention it.

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Dues are \$50 per calendar year.

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**New member dues are: \$50 for calendar year (in time for listing in the national directory) or \$40 for remainder of calendar year (mid year addition to national web directory). Please make checks out to IEEE-LAACN and send to the [treasurer](#).**





# The Engineering *INDEPENDENT*

Volume 6  
Number 5  
August 1998

## IEEE Los Angeles Area Consultants' Network

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1. All roads for the engineering community lead to the Anaheim Convention Center on September 15th through 17th for WESCON '98, and LAACN will be there in cooperation with other California consultants' networks. Get all the details in our [lead article](#).
  2. There's still a chance for you to participate directly in LAACN's promotional and educational efforts at WESCON. Frankly, we need your help in the booth, and the payoff (besides the warm fuzzy feeling from doing your part for the Network) is valuable exposure for your practice. You owe it to yourself and LAACN to check out the [booth staffing opportunities at WESCON](#).
  3. September is just chock-full of opportunities for networking and professional advancement. For workshops, tutorials and Bob Gauger's "cracker barrel" session for consultants, be in Phoenix over Labor Day weekend, September 4-7, for IEEE's annual [Professional Activities Conference](#) .
  4. Activities continue in October, with the 10th annual [IEEE-USA National Consulting Workshop](#) scheduled for October 17th in Chicago.

5. Our August Resource of the Month is a sprawling web site with something for everyone, including consultants: the [Smart Business Supersite](#). Our series on "best practices" for your consulting business continues this month with some tips from *Today's Engineer* on how to take an "engineering approach" to [communicating with your customers](#).
  6. Finally, we pass along two news items that could make a difference in your career. If you've been thinking about adding a non-engineering degree to your vita, get the results of a recent NSF study of [engineers with MBAs](#). And since the state of the overall engineering job market can also affect consultants, check out the latest [unemployment statistics for engineers](#).
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## **WESCON '98 Is Coming!**

*(adapted from an article by [Ed Carl](#), OCCN)*

On September 15th through 17th, WESCON '98 will return to the Anaheim Convention Center (it alternates between Northern and Southern California). LAACN, along with the Orange County Consultants' Network (OCCN) and Northern California Bay Area Consultants' Network, will participate in a booth to:

1. continue to make our "presence" known,
2. attract new members, and
3. attract new customers for our members.

Our booth will be #3565, the hours are 10-5 on Tuesday and Wednesday and 10- 4 on Thursday, and there will be parties or get-togethers each night. Circle your calendars now!

Our promotional materials will, of course, highlight our activities and member benefits, as well as those of other IEEE Consultants' Networks, the AICN and the IEEE.

If you are interested in helping to staff our booth, please see the article below, or contact Louis Y. Ungar.

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## **Promote Your Business and LAACN by Staffing the Exhibit Booth at WESCON**

*(updated from the article by Louis Y. Ungar in the June 1998 Engineering Independent)*

Time slots are still available for staffing the joint LAACN/OCCN Exhibit Booth at WESCON '98 in the Anaheim Convention Center September 15th through 17th. This represents a unique free opportunity for marketing exposure to WESCON attendees -- exposure that 1,400 other exhibitors have each paid

thousands of dollars to secure.

We continue to need your help to make sure LAACN is professionally represented at this important convention. Don't worry, you won't have to emulate a used-car salesman, or force baseball caps or T-shirts on unwilling passers-by. All that's needed is to volunteer 2.5 hours of your time, sometime between 10 AM and 5 PM on September 15th, 16th or 17th, to stand in the exhibit booth (along with one OCCN representative) and supply information about LAACN and engineering consulting in California.

Many good time periods are still open. To schedule yours, please contact Louis Y. Ungar by email or by telephone at (310) 301-6662.

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## Annual Professional Activities Conference in Phoenix

*Bob H. Gauger*

The annual IEEE Professional Activities (formerly PACE) conference returns to Phoenix, and will again be held at the Pointe Hilton Resort at Squaw Peak on 16th Street over Labor Day Weekend, Friday through Monday.

This event has grown greatly over the last several years. It used to be held primarily for regional and section Professional Activities leaders, but now the invitation to attend goes out to Society and Chapter leaders as well, and also to all local IEEE members. The theme for this year's conference is "Preparing for the New Millennium." It is a great opportunity for those who are interested in career planning and the professional side of IEEE. Consultants will find it particularly useful in that respect.

There will be six tracks of workshops covering Careers, Career Skills, Personal Skills, Professional Activities, GOLD (Graduates of Last Decade) Careers, and GOLD Skills, that will be held on Saturday and Sunday. In addition there are several tutorials given on Friday, September 4, on the subjects of:

1. Breakthrough Project Management (\$150, 8 am to 5 pm)
2. Sharpening Your Professional Communication Skills: Making Action-Getting Oral Presentations (\$150, 8 am to 5 pm)
3. HTML Training (\$150, 8 am to 5 pm)
4. Webmasters' Workshop (free, 3:30 pm to 5 pm)
5. Facilitator Training for the IEEE-USA Career Transitions Workshop "Managing Yourself through Job or Career Turbulence" (free, 9 am to 4 pm)
6. Practical Career Planning and Job Search Techniques (free, 9 am to 4 pm)
7. New PACE Leaders' Training (free, 1 pm to 5 pm)
8. PACE Leaders' Update (free, 3 pm to 5 pm)
9. Myers Briggs Personality Workshop Questionnaire Completion (\$10, 3 pm to 6 pm, required for those attending the Myers Briggs Personality Workshop)

There is also a "Companions" program of tutorials for \$10 each.

The normal registration fee is \$295 for IEEE members (\$375 for non-members) and includes the Friday dinner, breakfast on Saturday, Sunday and Monday, lunch on Saturday and Sunday, breaks, Proceedings, and one complimentary Friday dinner ticket for a registered companion. The fee does not include the Friday tutorials or the special Saturday dinner or Sunday Awards Banquet, which cost extra.

In the past, these workshops have been among the best that the IEEE puts on. Not cheap, but good. Bring your spouse and have a great tax-deductible Labor Day weekend in Phoenix. I plan to hold a "cracker barrel" session for consultants one evening. Watch for it!

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## IEEE-USA Will Hold National Consultants' Conference This Fall in Chicago

*[Pender M. McCarter](#), APR, Associate Communications Director, IEEE-USA*

The IEEE Chicago/Rockford Consultants' Network will host the 10th IEEE-USA National Consulting Workshop on Oct. 17 in Schaumburg, Ill.

The workshop is designed for practicing or aspiring consultants in the electrotechnology and information-technology fields. Expert consultants will explain their secrets and give practical how-to information on such topics as the following:

- getting started;
- employed full-time, consulting part-time;
- finding clients;
- financial aspects, fee setting, taxes;
- 30 years consulting experience: a perspective;
- the changing consulting arena and the Internet;
- intellectual property; and
- networking and referrals.

The workshop will be held from 8:30 a.m. to 4:00 p.m. at the Chicago Marriott-Schaumburg on 50 N. Martingale Rd. (Directions: From the I-90, go south on 53, exit at Higgins Rd., west 2 blocks, then left or south on Martingale).

The registration fee is \$65 for IEEE members and \$75 for non-IEEE members, minus a discount of \$10 for early registrations received by October 9. Registration includes continental breakfast, refreshments at breaks, lunch, and copies of the speakers' handout materials. A special room rate of \$88 for the night before or after is available by calling the hotel reservation line at 847-240-0100 by Sept. 17.

For more information on IEEE-USA consultants' workshops, see the Web site at <http://www.ieeeusa.org/usab/BUSINESS/workshop.aicn.html>. To register, send check (payable to

IEEE) or credit card info, along with member number if applicable, to Dr. Gary L. Blank at <<mailto:g.l.blank@ieee.org>>; 847-464-4081 (fax); or P.O. Box 70155, Plato Center, IL 60170.

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## Resource of the Month: Smart Business Supersite

*Russ Walker*

We continue our series on consulting resources by pointing our web browser at <<http://www.smartbiz.com>>, the Smart Business Supersite. This sprawling web site is a giant grab-bag of all kinds of business-oriented material, with something of interest for almost everyone.

First, a few caveats. In an attempt to be "all things to all business people," the Smartbiz site covers a lot of ground. Only a small fraction of the material here relates directly to an engineering consulting practice. Much of what you'll find is generic to any small business. Also, the quality of the site's content appears to vary widely. Nevertheless, there's such a vast amount of information here that even if only 10% is meaningful for your practice, and only 10% of that is grade-A quality, you'll still find enough to make a few visits worthwhile.

The resources at Smartbiz are subdivided into over sixty categories, which helps to separate the wheat from the chaff. There's also a decent keyword search engine. Clicking on the "Consulting" category produces a list of items organized under the headings "Articles, Reports and Checklists;" "Books;" "Products (Audio and Video Tapes, etc.);" "Publications;" and "Related Resources on the Internet."

The "Articles, Reports and Checklists" section contains links to a variety of info-nuggets, including "20 Marketing Tips for Consultants," "How to Ask For -- And Get -- The Fees You Deserve" (by Robert Bly, a well-known author of books on free-lance writing), and "IRS Guidelines: Employee or Independent Contractor." A number of items on this list are excerpts from full-length books, including several chapters from *Flawless Consulting* by Peter Block and something called *The Independent Consultant's Q&A Book*. All of the pieces I examined included a blurb stating the author's credentials, so you can judge for yourself how authoritative the source may be in each case.

The "Books," "Products" and "Publications" sections provided links to brief (1-2 page) reviews, called "Profiles." The list included some books, tapes and periodicals specific to consulting, padded with other more general titles like *Building a Profitable Business* and *The Small Business Legal Kit*.

The "Related Resources on the Internet" section seemed skimpy, but did provide directions for subscribing to the CONSULT-L mailing list (popular with computer software consultants and contract programmers), and links to the [alt.computer.consultants](#) and [misc.business.consulting](#) Usenet newsgroups.

Although not listed under the Consulting category, one of the best features of the Smartbiz site was a series of short articles on web page design by Bruce Chamoff. The series includes a list of 10 "Do's" and 10 "Don'ts" of web design, a discussion of how to promote your web site, and a guide to shareware

utilities that help you spiff up a dull site.

If you're looking for a quick answer to a specific question, or if you're seeking resources that are tightly targeted to an engineering consultancy, this isn't the site for you. But some evening when you're in a less structured frame of mind, try browsing the Smart Business Supersite. You're almost sure to find some useful, thought-provoking tidbits of business information.

*(Ed. Note: If you run across a web site, book, magazine, newsgroup, email list, or any other resource that might be helpful to your colleagues, please let us know about it! Email me a brief review, and we'll list your find as our "Resource of the Month.")*

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## **An Engineering Approach to Communicating with Your Customer**

*Russ Walker (based an article by Joan G. Nagle in Today's Engineer)*

Communication (the consultant-to-client kind, not the satellite-to-ground station or peripheral device-to-CPU variety) is the part of their work that most engineers enjoy least, yet they spend 75% of their time doing it. So claims a recent survey reported by Joan G. Nagle in the Winter 1998 edition of *Today's Engineer*. Nagle claims that engineers can become more effective communicators by approaching communication as an engineering process in itself. Among her recommendations:

- Analyze audience requirements;
- Design a document to meet those requirements;
- Construct the document from available parts (text, tables, graphics);
- Package (i.e., format) the document for "optimum user readability."

Some statistics on reader behavior are key to effective document design. Managers read a document's summary 100% of the time, its introduction 65%, its conclusion 55%, its body 22%, and appendices or attachments only 15% of the time. Keep these figures in mind when deciding where to put high-priority information.

*[Ed. Note: One of my objectives for this newsletter is to provide a vehicle for sharing "best practices" within our consulting community. If you've found something that works -- or tried and abandoned something that didn't work -- in your own practice, please share it with the group. Drop me an email and we'll get your tips and tricks into this newsletter.]*

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## NSF Study Finds MBA Degrees Pay Off for Engineers

*Russ Walker*

Researchers at the National Science Foundation (NSF) recently concluded that it pays to pair an MBA degree with an engineering bachelor's degree.

The result is based on data from NSF's Engineering Workforce Project, as analyzed by Lawrence Burton and Linda Parker in a paper titled "Intersections of Engineering and Management." (Parker is Engineering Program Evaluation Director at NSF.) Their findings were summarized by Robert Bellinger in the August 3, 1998 edition of *EETimes*.

Burton and Parker analyzed survey responses from 1,993 engineers, and determined that having dual degrees in business and engineering provides a wider choice of career options and greater opportunities for advancement to a senior management position. They estimate that only one-fifth of the 2.6 million degreed engineers in the United States also hold a non-engineering degree.

The study acknowledges consulting as a popular engineering career path, noting that a drop-off in management activity by engineers over age 60 in the survey may be due to the "tendency of engineers to leave for-profit firms and go into self-employment toward the end of their careers." (Does this rather curious wording suggest that the researchers consider consulting a "not-for-profit" activity?)

The authors' ultimate conclusion is that "lifelong learning needs to be thought of as more than keeping current in one's technical field."

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## Engineering Job Market Softens in Second Quarter

*Russ Walker*

Unemployment among EEs rose to 2.2% in the second quarter of 1998, compared to an EE jobless rate of only 0.8% in the previous quarter, according to Robert Rivers, editor of the newsletter Engineering Manpower. Rivers' numbers, which are compiled from data published by the federal Bureau of Labor Statistics, were reported in the July 20, 1998 edition of *EETimes*.

Among all engineers, not just EEs, second-quarter unemployment was somewhat lower, at 1.6%. Some engineering disciplines continue to experience still lower jobless rates. The second-quarter rate for programmers was 1.6%; for systems analysts, 1.1%; and for civil engineers, a minuscule 0.2%.

Experts quoted in this and similar articles in the engineering trade press cited recent cutbacks at semiconductor companies and the Asian financial crisis as reasons for the softening EE job market.

No one seems ready to declare a crisis just yet. 2.2% unemployment is still *very* low by any reasonable standard, and is less than half of the overall national unemployment rate (which stood at around 4.5% for June). Nevertheless, this statistical tremor may be a reminder that, sooner or later, all good things really

do come to an end.

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1. Looking for somewhere to go for the Labor Day weekend? Want to combine a great family outing with a chance to sharpen your professional skills? Mark your calendar now for the IEEE Professional Activities Conference September 4-7 in Phoenix. All the details are in our [lead article](#).
  2. What's going on with IEEE-USA's Alliance of Independent Consultants' Networks (AICN)? Bob Gauger, Chair of the AICN Coordinating Committee, gives us an update in "[Around the AICN](#)".
  3. In case you missed some recent events around the Southland, we recap three of them this month: the [16 April kick-off conference](#) for the Los Angeles Regional Technology Alliance's Global California Project; the [16 June joint meeting](#) of LAACN and the IEEE South Bay Harbor Section; and the [27 June meeting](#) of the OCCN's new Year 2000 Working Group.
  4. We plan to bring you a series of articles, sharing "best practices" and resources that you can put to work right away in your own business. We begin this month with a look at [using an Internet news-clipping service to build your consultancy](#). Plus, we highlight a Web site and related books of interest to computer consultants, in our July "[Resource of the Month](#)".

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## Professional Activities Conference

*Bob Gauger, AICN-CC Chair*

The IEEE PA Conference (formerly known as the PACE Workshop) will be held in Phoenix over the Labor Day weekend (September 4-7). Six tracks of sessions will offer more than 50 workshops and plenaries designed to meet our career and professional skill development needs. As consultants, we are responsible for our own career planning and development. This is one excellent opportunity to do it. Though there is no program specifically for consultants this year, I do plan to sponsor a cracker-barrel session on consulting one evening.

I have attended many of the former PACE Workshops and participated in the planning of this one, so I highly recommend it -- though I admit that I may be biased. It is a great place to bring your family for the Labor Day weekend. Registration fees are not cheap (\$295, with \$100 for Life Members) but at least they should be tax deductible if you are an active consultant.

Want to know more? E-mail Ann Hartfiel at [a.hartfiel@ieee.org](mailto:a.hartfiel@ieee.org) for a registration packet or talk to me.

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## Around the AICN

*Bob Gauger, AICN-CC Chair*

The "1998 Directory of Electrotechnology & Information Technology Consultants- Electronics, Electrical, Software, & Management" is out. It is a very attractive volume in spite of its title. If you do not have a copy, request one, and get an extra copy to leave with your client. If you (or your client) really need to look for a consultant, turn to page 2, get the AICN web address (<http://www.ieee.org/consultants>), and do a keyword search. [Ed. Note: You can do a search restricted to LAACN member consultants from the LAACN search page, <http://www.laacn.org/list/search.htm>.] With new search capability added by Leslie Haggerty, it is now easier than ever to find the consultant you need. This year, we asked for comments and many reports of successful contacts and contracts are coming back.

If you did not get in, you may have a second chance. We hope to offer a web-only listing very soon. Our plans are to call for 1999 directory listings in December or January. Watch this page. [Ed. Note: Since LAACN uses the national directory as the base for our local search engine, LAACN members are eligible for an automatic listing in the national directory. LAACN will let you know how to continue to take advantage of this membership benefit. As Bob says, watch this page!]

Starting in about 1993, the AICN has been sponsoring consultants' workshops around the country. The

first was held right here in the Los Angeles/Orange County area. Now, we typically sponsor two a year. This year, one was in Dallas/Fort Worth in May, and the second will be in the Chicago Rockford area on October 17. Phoenix and Austin have asked for workshops in 1999.

We sponsored a consultants workshop in the Bay Area last fall. They took up the challenge and, with the help of PATCA, put on an even better workshop last month. It was such a success that they are already planning the next one. The Southern California networks (including LAACN) are also planning one for September/October (date to be determined) this year.

Though we have a concern to support all IEEE members who are interested in consulting, AICN is only an alliance of networks. We have 23 networks at present with one more about to form. The AICN is part of the new IEEE-USA organization, but there has always been some concern as to how our networks fitted in at the local Section level. We thought that we had this solved with a proposal to the IEEE board to permit groups, like our local AICN networks, to become Affinity Chapters of the local Section. In a vote taken over the weekend of June 20 that did not get approval. I don't have enough information to say what our next move will be.

Are you aware the AICN also publishes a newsletter and mails it to all network and IEEE members who are interested in consulting? The feature article in the May newsletter was the partial results of the AICN fee survey. More will be included in the next issue. We sent out 1,890 copies in May. If you did not get a copy, it is because we do not have your address. The next issue is scheduled for about the end of August. If you want a copy and did not receive one, get your name and address to me and I will put you on the mailing list.

The AICN has one representative from each network. Kip Haggerty is the LAACN representative. If you want to know more about the AICN and what it is doing, or if you have some needs that you think the AICN should be meeting, see Kip or me.

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## **Kick-off of LARTA Global California Project**

- or -

## **Characteristics of a Modern Day Entrepreneur / Consultant**

- or -

## **"Things You Can Learn by Networking"**

*Harry L. Staubs*

I attended an excellent networking opportunity conference on 16 April 1998: The Global California Conference, sponsored by the Los Angeles Regional Technology Alliance (LARTA). This conference was held at the Los Angeles Chamber of Commerce offices, 350 South Bixel St., Los Angeles, a place I

had never visited in downtown Los Angeles. The cost which included lunch was \$45. I learned of the conference a few days before it began by attending the April IEEE Entrepreneur Network meeting.

The purpose of this Conference was to introduce the LARTA "Global California Project" initiative to the attendees. The objective of this project is to support small business growth by enabling international partnerships across the globe.

For me, the highlight of the meeting was the luncheon speaker's remarks. She was Dr. Jon Goodman, the Director of the USC EC2 Annenberg Incubator. Her remarks were very apropos as she presented her views of the characteristics of a successful current modern day entrepreneur/consultant and what it will take to survive the next 10 years.

In her opinion the characteristics of success in the current business climate include consideration that: 1) Options change on a daily basis; 2) You must be light on your feet; 3) You must be agile; 4) You must have no pre-conceived notions about what matters; 5) The Best Technology does not matter; 6) You must be in the front of the pack; 7) Your Systems /Processes must be interoperable; 8) Conventional wisdoms don't matter; 9) the Future is unknown; 10) It is a Global Economy; 11) Today - English is the common business language; 12) You must be clearly open-minded.

Her final comment was that "Excellence is not associated with any given culture!"

Attendees and speakers included Rohit Shukla, President and CEO of LARTA, who presented "The Big Picture", and the LARTA Director of the Global California Project, Joseph Bovino (a former attorney), who was the Conference MC. The agenda included a keynote by Madison Laird, the IBM Global Strategy Manager, Small And Medium Business Division, who discussed IBM's e-Commerce emphasis area and its perspective. IBM is a LARTA Global California Partner along with GTE, Lawrence Livermore Laboratory and Rodi Pollock. Other talks included one by LA Trade (an export-promotion organization managed by the Los Angeles Area Chamber of Commerce), who previewed their Web site at <http://tradeport.org>. There were remarks by representatives from Sweden, Finland, the UK, Denmark, Germany, New Zealand, Russia and others who presented country capabilities and their interests in forming Global California partnerships.

The Global California web site address is <http://www.globalca.com>. This site was to be fully functional and ready for profiles by 4 May 1998. In addition to maintaining this Web site, the Global California Project will provide future Global California Forums, plus Mentoring (or "how to") Forums for small and medium-sized enterprises, including women-owned and minority-owned businesses.

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## **Joint South Bay Harbor/LAACN Meeting Attendees Learn about Year 2000 Problems and Opportunities**

*Russ Walker*

Members of LAACN and/or the IEEE South Bay Harbor Section who came to The Lakes at El Segundo

on the night of 16 June, heard an eye-opening discussion of Year 2000 computer problems in embedded microcontrollers, and came away with some ideas on how to turn those problems into consulting business opportunities.

The featured speaker, Gayn Winters, Ph.D., of Bristol Systems Inc., described the Year 2000 problem, provided examples of how it can affect firmware and microcode in embedded devices, and outlined the potentially devastating impact of widespread device failures on businesses and the modern industrial infrastructure. He explained the approaches currently being taken to evaluate and solve these problems, and how engineering consultants can be a part of those solutions. Following the presentation, the group engaged Dr. Winters in a lively question-and-answer session.

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## OCCN Year 2000 Working Group Speaker Discusses Hospital Medical Device Issues

*Russ Walker*

The 27 June meeting of the Year 2000 Working Group of the Orange County Consultants' Network (OCCN) provided another opportunity to delve into the Year 2000 problem from an engineering perspective. The featured speaker was Dan Forrester, Director of Technology for St. Joseph Health System, a nationwide network of hospitals that includes St. Jude Medical Center in Fullerton. Mr. Forrester described his organization's hospitals as being among only 5% of hospitals in the nation that are aggressively working on the Year 2000 issue. He explained his group's ongoing efforts to test thousands of medical devices throughout the hospital system for Year 2000 compliance, and provided both statistics and specific examples of their findings to date. He defined his own attitude as one of "prudent paranoia," and expressed his hope that engineering consultants like those at the meeting could be part of the solution to the problems his team is identifying daily.

OCCN's Year 2000 Working Group meets on the fourth Saturday of each month from 9:30 AM to 12:00 noon on the campus of UC-Irvine. For more information, contact Gayn Winters.

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## Confessions of a News Junkie: Using an Internet News-Clipping Service to Build Your Consulting Practice

*Russ Walker*

I've always been a news junkie. Throughout high school and college, as a member of the speech and debate team, I filled countless shoeboxes with newspaper clippings to serve as fodder for future speeches. Today, I constantly look for ways to make my news habit work for my consulting practice -- and I avoid the ink stains and paper cuts by using an Internet news-clipping service.

When you subscribe to a clipping service, you specify a list of topics that define your particular interests. These might include general subject areas like "Computers"; more specific topics, like "Information Technology in Healthcare"; or names of particular companies, organizations or individuals, like "Microsoft", "the Justice Department" or "Bill Gates". The service constantly monitors a variety of news sources for references to any of your chosen topics. When an item of interest appears, it's forwarded to your email or to a personally-tailored Web page.

Many services of this type are available on the Internet. I use one called Newspaper (<http://www.newspage.com>) whose "basic" level of service is provided at no extra charge by my ISP (Internet Service Provider), Netcom. (I pay a bit more each month for "Premium" service that allows me to access a wider range of news sources. Hey, I admitted I'm a news junkie!) Here are some of the ways I've found to use the Newspaper service in my consulting practice:

- **Strengthen relationships with current and prospective clients.** I monitor news about companies who are my current clients, plus any that I am actively pitching for future business. When I talk with people from those companies, I know what's going on in their world. "Hi, Joe. By the way, congratulations -- I see you just got FDA approval for your new product!" This helps strengthen the all-important client relationship, and conveys a professional image of the consultant as a knowledgeable expert in the client's business.
- **Keep up with technical developments.** Nothing can be deadlier to your expert image than to have a client who asks, "So, what do you think about this Acronym Intensive Gigabit Network I've been reading so much about?" -- and you've never heard of the thing. I get most of my "hard" technical information from scholarly journals, conferences and seminars -- but by also monitoring coverage of science and technology in the popular press and the trade journals my clients read, I'm protected against being caught off-guard. Plus, the clipping service alerts me to new product announcements, academic papers, and patent filings in my particular fields of interest.
- **Keep up with business developments.** My consulting work is seldom only about technology -- I usually end up getting involved with many aspects of my clients' businesses. Indeed, it's often impossible to divorce technical matters from issues of marketing, finance, strategy and management. So I monitor a broad range of news about the industries I usually work in: major firms, their suppliers and competitors, industry associations, regulatory agency decisions, pending legislation, and so on. The more I know about a client's business environment, the better the advice I'm able to give.
- **Stay in touch with previous clients.** I don't drop a company off my topic list when a contract ends, if it's an organization I might want to work with again. A positive news item gives me a great excuse to drop someone a congratulatory postcard or an email, or give them a call. That helps keep the relationship alive, and reminds them I'm still around and still consulting. Sometimes, that leads to a new assignment.
- **Spot new opportunities.** My news service is one way for prospective new clients to appear on my radar screen. I look for any item about a company in one of my target industries that's licensing or developing a new technology, launching a new product line, or aggressively expanding their business. Often, the news item provides specific contact information within the company as a starting point for an inquiry.

These are just a few of the ways that I've used my news-clipping service to support my consulting

practice. You may find other ways to use this type of service. Many news providers offer a no-charge service, while others offer a free or reduced-cost trial period, so you can "test-drive" a service to see if it will work for you. For a listing of both fee and no-fee news services, see [http://www.yahoo.com/News and Media/Personalized News/](http://www.yahoo.com/News_and_Media/Personalized_News/).

If you decide to give a clipping service a try, here are a few tips to keep in mind. Topic selection is critical. Too broad, and you'll waste time dealing with information overload; too narrow, and you'll miss some gems. Plan to fine-tune your selections over time, and make continuous changes as your client list and business objectives evolve. Initially, aim for a list of five to ten topics that generate a set of headlines you can scan in a few minutes every day, then "drill down" to the full story on one or two items that capture your attention. If a topic doesn't generate at least one item a week that makes you think, "Wow! I'm glad I saw that," consider dumping it. Don't let notices accumulate in your email unread; their value is in their immediacy. Scan the incoming items daily, or at least every other day, then follow up right away on the ones that suggest action.

Above all, take advantage of the flexibility that an electronic news service offers, and tailor how yours works for the best fit with your personal style. Happy clipping!

*[Ed. Note: One of my objectives for this newsletter is to provide a vehicle for sharing "best practices" within our consulting community. If you've found something that works -- or tried and abandoned something that didn't work -- in your own practice, please share it with the group. Drop me an email and we'll get your tips and tricks into this newsletter.]*

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## **Resource of the Month: Books and Web Sites with Advice and Rate Information for Computer Consultants**

*Russ Walker*

Both the Internet and your friendly neighborhood giant-chain bookstore are full of "information" about consulting -- some that's useful, much that's useless, and quite a bit that's outright toxic. In an effort to help filter the signal from the noise, the *Engineering Independent* will try to present, each month, a short list of resources that other LAACN members have found to be worthwhile.

This month, we get started by recommending a Web site and two related books by Janet Ruhl, the leader of the Computer Consultant's Forum on CompuServe. Her publications will mainly be of interest to those who work with computer hardware and software, although much of her information can be applied more broadly.

Ms. Ruhl's Web site, the Computer Consultant's Resource Page at <http://www.realrates.com>, features a so-called Real Rate Survey of what computer consultants around the country report they are earning. The data are summarized by geographic location, size of firm, industry, consultant's years of experience, and many other factors. Survey respondents are largely contract programmers, which limits the direct utility of the results for those doing other types of consulting, but with this in mind the reported rates can still

provide a useful benchmark. Besides the rate survey, the site includes a message board, a "Tips and Gotchas" section, and several books and audio tapes about consulting that can be ordered on-line. Hot topics on the message board when I visited included health insurance for the self-employed, FICA tax issues, and what title to put on a consultant's business cards. The "Tips and Gotchas" page offered advice on protecting software rights in a consulting contract, avoiding common Web site mistakes, finding clients, and taking a home-office tax deduction. All in all, a useful and seemingly vibrant site with something for everyone, but most valuable for those offering computer-related services.

Our featured books this month are also by Ms. Ruhl, and are available from her Web site: *The Computer Consultant's Guide* (second edition, John Wiley & Sons, 1997) and *The Computer Consultant's Workbook* (Technion Books, 1996). Both are aimed mostly at those just starting out in the consulting game, and should be considered must-reads for anyone in that position, but even "old pros" will find some helpful nuggets of information. The *Guide* is packed with clear, basic guidelines and common-sense advice on setting up a consulting practice, dealing with legal issues, setting rates, negotiating contracts, and so on. For veterans, there are potentially valuable chapters on marketing, managing client relationships, and growing a consulting business. The *Workbook* is intended as a companion volume to the *Guide* and provides a wealth of self-tests, checklists, and sample documents including contracts, proposals, invoices and letters to clients. (I particularly liked the example of a letter announcing a rate increase, which addressed a touchy subject in a very professional style.) Highly recommended if you're just starting out, if you're considering changing the direction of your practice, or if you feel your basic business skills might be in need of a "tune-up."

[Ed. Note: If you run across a Web site, book, magazine, newsgroup, email list, or any other resource that might be helpful to your colleagues, please let us know about it! Email me a brief review, and we'll list your find as our "Resource of the Month."]

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### The On-line Bulletin

Welcome to the on-line bulletin of the LAACN. Check out the information links below for viewing, printing a paper copy, submitting an article, etc.

Think about writing an article for this bulletin... soon! Also, let us know if you or another member received a professional award, recognition, or certification lately so we can mention it.

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### Fine Print

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The discussion of any legal issues in an article in this publication is presented as



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Dues are \$50 per calendar year. New member dues are: \$50 for calendar year (Oct 1 to Mar 31) or \$25 for remainder of calendar year (Apr 1 to Sep 31). Please make checks out to IEEE-LAACN and send to the [treasurer](#).



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1. Don't miss the second annual joint meeting of the South Bay Harbor Section and the LAACN, to be held the evening of Tuesday, June 16, 1998 at The Lakes at El Segundo. If you work with embedded controllers -- or if you just plan on riding elevators or airplanes after January 1, 2000 -- you'll want to hear this program. Get all the details in our [lead article](#).
  2. Exciting things are happening for Network members on the Web. Learn about how the [1998 Online Directory](#) and our new search engine will help potential clients find you. Also, see what the [latest statistics](#) reveal about traffic on our site and how you can take advantage of it.
  3. Get great prices on office equipment and furniture on Saturday, June 13, 1998 at the [LAC Office Close-Out Sale](#).
  4. Join us in congratulating Ed Conrow on his [elevation to IEEE Senior Member](#), and in welcoming four [new members](#) to LAACN.
  5. There are still plenty of opportunities to help yourself by helping LAACN. Reserve a time slot

now to [staff our exhibit booth at Wescon](#) in September. [Write an article](#) for this newsletter. Better still, do both!

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## Year 2000 Opportunities in Embedded Controllers

*Gayn Winters, President, SMS Global Technologies and Kip Haggerty*

On Tuesday, June 16, at The Lakes at El Segundo, the South Bay Harbor Section and the Los Angeles Area Consultants' Network are pleased to sponsor their second annual joint meeting. Last year's meeting featured a panel of six industry experts speaking on technology in the global film industry. This year, they invite the members of the Santa Monica Bay Section to join them for an interesting evening learning about the impact of Year 2000 on embedded microcontrollers.

Most of the publicity on the Year 2000 problem refers to ancient computer programs that cannot count 1998, 1999, 2000, but rather they count 1998, 1999, 1900. Gayn Winters will discuss what embedded microcontrollers do under similar circumstances. For example, what happens when the elevator control processor checks up on the recent maintenance records and finds that the elevator has not been serviced since 1900, and thus must be immediately shut down until more grease can be applied and it is safe to ride again? Join us for an enlightening evening on both the pitfalls and business opportunities in the microcontroller Year 2000 field.

Who:	Gayn Winters, President, SMS Global Technologies
What:	Year 2000 Opportunities in Embedded Controllers
When:	Tuesday, June 16, 1998 6:30 PM Social 7:00 PM Dinner 8:00 PM Meeting
Where:	The Lakes at El Segundo, 400 S. Sepulveda Blvd., El Segundo
Info:	Dinner: \$14 includes tax and tip for chicken dinner with fresh tomatoes and basil, beverage and dessert. The Lakes at El Segundo is on the east side of Sepulveda between El Segundo and Rosecrans (just north of Hughes Way). We will be meeting in the banquet room. A map is posted on-line at: <a href="http://www.laacn.org/">http://www.laacn.org/</a> . Reservations are required by Thursday 6/11/98. Send checks payable to IEEE South Bay Harbor Section to Lyn Shaw, The Aerospace Corporation, Mail Station M1-135, P.O. Box 92957, Los Angeles, CA 90009. Reservations may also be made by calling Marie Moore-Smith at (310) 336-9007.

**Topic:** For many, the Year 2000 issues seem like boring monotonous COBOL rewrite issues. Think again! Embedded devices frequently have some sort of clock chip, which is used for timestamping, system maintenance, etc. Sadly, many of these offer only two decimal digits to represent the year. The classic Year 2000 problem raises its ugly head: How does the software (usually firmware and sometimes microcode) handle the roll over from year 99 to year 00? Examples abound of stopping immediately,

stopping after a few days (as other data gets corrupted), and continuing with corrupted output.

The roll over register doesn't have to hold the year. For example, the architecture of the Global Positioning System (GPS) defines a "week counter" which rolls over to zero on August 22, 1999. Quite a number of early GPS devices did not account for this properly, but most of these vendors offer a ROM upgrade.

The failure of a GPS probably won't take down an airplane or sink a ship - they have several redundant navigational methods, but heart monitors, elevators, power sub-stations, security systems, and fire truck engines are known examples of embedded systems whose Year 2000 problems have serious consequences. In fact, the world is just waking up to the reality that many, many embedded systems will fail upon a register roll over.

Unlike mainframe COBOL programs, which have a wealth of analysis, debugging, and testing tools, embedded systems have almost none of these. Worse, the source code (and sometimes even the vendor) are no longer around or responsive. There is also a nasty legal issue as to whether the owner of the device has a license to change the code.

If even 5% of embedded systems fail entering the year 2000, the sheer number of them would give rise to a cost that various Year 2000 pundits estimate to equal or exceed the cost of fixing mainframe COBOL programs. As an example, TAVA Technologies reported at the Year 2000 Conference in Atlanta (April 5-9, 1998) that they examined 4,457 embedded systems for a large pharmaceutical company and found 36% non-compliant and 17% would cause either plant shutdowns or degradation of production. 15% of the non-compliant device vendors were not in business, and 30% of the rest would only address the issue by selling a new device. One scary footnote to this example is that about 40% of the vendors of non-compliant devices claimed the devices were compliant! As another example, a cargo ship was examined and had Year 2000 problems in its radar mapping, ballast monitoring, cargo loading, performance monitoring, engine room vibration monitor, service aid for ship's control system, and the ship's control system itself.

For many businesses, wholesale replacement of their embedded systems is not an economic possibility. For them, the issue becomes a risk-avoidance vs. cost issue. How do they cost effectively:

1. find all potential problems,
2. for each potential problem with dire consequences of failure, fix it, replace it, or find a work-around, and
3. test the resulting total system?

Opportunities for consulting abound in this area. Anyone interested in participating, please contact Gayn B. Winters, Ph.D., SMS Companies at 714/532-6776. There is also a new OCCN working group starting up in this area. LAACN members interested in this problem are encouraged to participate. The Year 2000 Working Group will be meeting on the fourth Saturday of the month from 9:30 AM to 12 noon at UCI.

**Bio:** Gayn Winters has worked as an executive, corporate strategist, engineering manager, technologist, investor and entrepreneur - in start-up, Fortune 500, and small companies. His products have won prizes, combined and pushed technologies, and been profitable both initially and at end-of-life. He enjoys solving complex multi-disciplinary problems.

Winters grew up in Southern California, BA at UC Berkeley, PhD Math at MIT and taught at MIT,

Indiana University, a school in France, and Holy Cross College. He built Ziff-Davis' first profitable software product, spent a decade at Digital Equipment Corporation, developed their first IBM-compatible PC, and was Digital's chief internationalization architect. He was VP Engineering, Chief Technology Officer and General Manager at Phoenix Technologies Ltd. He founded System Solutions International in March 1997.

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## 1998 Online Directory

*Leslie Haggerty*

The 1998 IEEE-USA Electrotechnology Consultants Database is now online and LAACN has a special place in the directory. We are the first local network to use the national directory as our local search engine. You may search the directory for LAACN members from our web site by visiting <http://www.laacn.org/list/search.htm>. Using the search from the LAACN site finds only LAACN members. You may also search the full national directory by visiting [www.ieeeusa-consultants.org/directory/search.html](http://www.ieeeusa-consultants.org/directory/search.html).

The 1998 search engine was developed by Leslie Haggerty and is based on the engine used by LAACN in the past. We added additional capabilities this year including whole word vs. partial word, and case sensitive vs. insensitive searches. Now searching for "NT" need not return listings with "management." The standard search page has the default settings of partial word, case insensitive; however, the [advanced search](#) page provides many more options. In addition to searching for specific area codes, you may specify a last name, zip code, foreign language technical proficiency, interest in contract engineering, and interest in international assignments. With the national advanced search, you may also specify state or foreign country.

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## Update on Web Site Statistics

*Kip Haggerty*

Our site continues to grow in popularity. We now receive over 7,000 hits per month (March and April). The most popular places are the home page, the browseable on-line directory, the search form for the directory search, and Clark Bell's minisite. We expect hits on the site to drop in the near term for two reasons. The browseable directory is now returned from the AICN directory search cgi script and is no longer counted in our site statistics. Also, Clark Bell has changed his web link in his directory listing to his own web space (although his minisite remains on the LAACN site).

We now have 21 of our 47 members listed in our firms area, meaning that 21 of our members have web space or are taking advantage of their opportunity to put up a web minisite on the LAACN web site (a membership benefit). A web minisite provides an important supplement to your directory listing. The only requirements are that you have to make it yourself and you get up to 50 KB of space. To see what you can do with a minisite, take a look Clark's site at [www.laacn.org/firms/hfplus](http://www.laacn.org/firms/hfplus). To learn how to put a minisite together, see last year's [web tutorial](#). Minisites should be submitted to me by email (or on disk) for error checking and posting.

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## LAC Office Close-Out Sale

*Kip Haggerty*

Do you need a second PC, a desk and chair, file cabinets, or two line phones and answering machines? Do you want to buy them used at a great price? If you answered yes to either of these questions, then you should come to the Los Angeles Council (LAC) office equipment and furniture sale on Saturday, June 13, 1998. The office has been closed and all of the equipment and furniture must go.

The LAC office will be open for viewing the offered items on the day of the sale from 9:00 to 11:00 AM. Buyers will submit bids on groups of items in sealed envelopes. At 11:00 AM, the envelopes will be opened and the highest bid will be accepted for each group. Buyers must either pick up their purchases by 3:00 PM on June 13 or make other arrangements. Check payments will be required at the time of the sale. The available furniture and equipment are listed in the on-line June LAC Bulletin. For additional details on the sale, please see the LAC web site at [www.ewh.ieee.org/r6/lac](http://www.ewh.ieee.org/r6/lac) or email the Council at [coun.lac@ieee.org](mailto:coun.lac@ieee.org). For directions, please link to the on-line map.

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## Network Member Elevated to IEEE Senior Member

*Kip Haggerty*

IEEE and LAACN Member Ed Conrow was elevated to IEEE Senior Member at the April Admission and Advancement Committee meeting held in Fort Worth, Texas. A hearty congratulations goes out to Ed.

1998 is a great time to be nominating a colleague for Senior Member; several new programs have made it even easier to apply for elevation or nominate a colleague for this honor. When you nominate a colleague, not only will you benefit that individual, but our 1998 Senior Member Initiative provides for a \$10 reward for the entity nominator (Section or Chapter) for each successful nominee elevated by the end of 1998.

The Senior Member nomination/application and reference forms have been simplified. And, we have joined the "electronic age." The forms are available via email by sending a blank message to [senior-member-forms@ieee.org](mailto:senior-member-forms@ieee.org). You will automatically receive the application/nomination and reference forms by return email. The forms may be submitted via email as well; simply send your completed forms to [senior-member@ieee.org](mailto:senior-member@ieee.org).

If you need assistance with references for nominating a qualified IEEE Member to be elevated to Senior Member, please contact me. We have four IEEE Fellows and ten IEEE Senior Members among our ranks.

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## New Member Welcome

*Kip Haggerty*

I am pleased to welcome four new members: J. Lee Blanton (IEEE Member), Ralph Hileman (IEEE Senior Member), George Nunez (Affiliate), and Lanny Tiefer (Affiliate).

- Lee Blanton does business as Radex Group in Temecula. He consults in the areas of radar systems, environmental remote sensing and satellite communications, specializing in antennas, receivers, and beamforming. Both Leslie and I have worked with Lee in our past work lives at Hughes Aircraft and know first-hand of his superb qualifications for entering consulting. You can learn more about Lee at [www.pe.net/~blanton](http://www.pe.net/~blanton).
- Ralph Hileman does business as Hileman and Associates in Lake Mathews. He consults in the areas of computers, networks and systems engineering and also provides business development and proposal preparation services. Ralph also serves as the Chair of our sister group in Orange County, but just couldn't pass up the outstanding value of a local and national listing for the same low price. You can learn more about Ralph on the OCCN site at [www.occn.org](http://www.occn.org).
- George Nunez does business as NCS Business Systems in Santa Fe Springs. He consults in the areas of graphical user interfaces, relational databases and client/server software, providing solutions for both Windows and Unix. You can learn more about George at [www.atgm.com](http://www.atgm.com).
- Lanny Tiefer does business as Tiefertronix in Simi Valley. He provides services in the areas of CCD camera design, real-time machine control and firmware design, and analog/digital design.

On behalf of the network, I extend a warm welcome to our new members. .

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## Volunteers Needed to Staff Wescon Exhibit Booth

*Louis Y. Ungar*

Wescon caters to 1400 exhibitors in the electronics industry who pay thousands of dollars in order to get exposure to the tens of thousands of attendees. LAACN gets to exhibit at Wescon FREE of charge.

We need your help to volunteer your time between 10 AM and 5 PM on September 15-17, 1998. Your job will be to promote LAACN, and everyone at LAACN will benefit from this (including your own consultancy).

In the past, a number of LAACN members gathered around the booth and it was quite a popular site. Each member would help out, of course, but this year we have to limit the booth attendees to two -- one from LAACN and one from the Orange County Consulting Network (OCCN).

Time slots, in increments of 2.5 hours (plus a 15 minute orientation) will be assigned on a FIRST COME, FIRST SERVE bases. That means only three people per day, or a total of only nine members will get this chance!

If you want to avail yourself of this opportunity tell us your most preferred time frame. (You can copy the schedule below from your browser window into an email message.) Place a 1 for your 1st choice, 2 for your 2nd choice, 3 for your 3rd choice, etc. (If you absolutely can't make a time slot, leave it blank.)

- 9:45 AM - 12:30 PM Tuesday, Sep. 15, 1998
- 12:15 PM - 2:30 PM Tuesday, Sep. 15, 1998
- 2:15 PM - 5:00 PM Tuesday, Sep. 15, 1998
- 9:45 AM - 12:30 PM Wednesday, Sep. 16, 1998
- 12:15 PM - 2:30 PM Wednesday, Sep. 16, 1998
- 2:15 PM - 5:00 PM Wednesday, Sep. 16, 1998
- 9:45 AM - 12:30 PM Thursday, Sep. 17, 1998
- 12:15 PM - 2:30 PM Thursday, Sep. 17, 1998
- 2:15 PM - 5:00 PM Thursday, Sep. 17, 1998

You can e-mail your choice (including your name, phone, e-mail) to Louis Y. Ungar at Testable1@aol.com. We will go by the date stamp on your e-mail to ensure that early birds get their first choice. You can also call Louis at (310) 301-6662.

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**Newsletter Space Available -- Send Your Articles Now!**

*Russ Walker*

Want to enhance your professional reputation as an expert consultant? Build your network of colleagues and referral sources? Or just share an intriguing anecdote or a helpful tip with your friends? There's an



easy, painless way to do all of the above: write an article for *The Engineering Independent*.

With this issue, the on-line bulletin of the LAACN resumes publication after a brief hiatus. I'm grateful for the opportunity to serve as your newsletter editor, and I'll do my best to bring you a reader-friendly publication that's useful, informative and maybe even a little bit of fun. But in order to do that, I need your help. Jot down something you'd like to share with your fellow LAACN members, such as the following:

- Awards or other forms of professional recognition that you or others have received.
- Meetings, seminars, conferences or similar events.
- "Best practices" that have worked well in your consulting practice.
- Horror stories of problems you've encountered and survived.
- Anything else that you think might interest other consultants (chances are, it will!).

Send your scribblings via email to me, Russ Walker. HTML submissions, as described in "[Submitting an article](#)", are appreciated and may get to print (actually, pixels) more quickly, but plain-text submissions are also OK. In fact, the only thing that's *not* OK, is to do nothing. So blow the dust off your keyboard, get a good solid grip on that mouse, and write! Your editor, and all your other friends and colleagues, are counting on you.

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Think about writing an article for this bulletin... soon! Also, let us know if you or another member received a professional award, recognition, or certification lately so we can mention it.

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#### Chair

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**Lawndale, CA 90260**

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**(310) 679-2440**

#### Vice-Chair

**Wiley Greiner**

*LA Software*

#### Treasurer

**Scott Miller**

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**publication regarding applicability to existing laws. Always seek the advice of an attorney in any legal matter.**

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0. **News Flash:** Do not send your money to national for a national directory listing. LAACN has arranged for all our members to be in the National Directory this year. We will be demonstrating a combined National/Local Directory. National has agreed to charge the network only \$25 per member for the demonstration year. During the 1998 election, we will vote on whether to continue the arrangement (at a smaller discount) and what, if any, dues increase there will be to cover the added expense. When the National directory letter comes out, we will send instructions on what to do. Make sure your dues are up to date. Members in arrears, will not be included.
1. Don't miss the Consulting Miniworkshop, February 28, 1998. Details of the [Miniworkshop](#) follow in the newsletter.
  2. Please [volunteer](#) to edit the newsletter and/or maintain other content on the web site. Our current Chair, Kip Haggerty, is now Los Angeles Council Chair and will have his hands full getting the Council back on track. He will be unable to publish the newsletter as he has done for January and February and will not have as much time for maintaining our web site.
  3. We have been invited to the Engineers' Week Banquet the evening of the Miniworkshop at the Odyssey Restaurant in Glendale. For details on the banquet see, the article on [Engineers' Week Banquets](#).

4. The 1998 Executive Committee met February 1, 1998 . The minutes of that meeting will be posted on the web site at in the [excom](#) section soon.
- 

## Consultant Miniworkshop

*consult@hasys.com*

LAACN and OCCN are jointly hosting a Consulting Miniworkshop at the Distributed Generation & Green Power Technical Conference. The workshop will include presentations on topics geared towards introducing potential consultants to the consulting field and improving the business skills of existing consultants. A panel discussion of experienced consultants will field questions from the audience.

OCCN is putting together the program for the workshop. Contact OCCN Chair, Ralph Hileman at (909) 780-3947, [r.hileman@ieee.org](mailto:r.hileman@ieee.org) for program information. More details on the workshop program will be available soon and will be posted on the LA Council web site at: <http://www.ewh.ieee.org/r6/lac/> For registration information, location and time see the article, [Distributed Generation & Green Power Technical Conference; Location and Registration Information](#)

Lastly, LAACN and OCCN will be hosting a joint table to display network information. To draw attention to our table, OCCN member Eileen Smith will be displaying a model of a unique and interesting solar panel design on half of our table per recommendation of the LAACN Chair and agreement of the OCCN Chair. Display tables will be in the main conference hall and if any part of the program interests you more than a particular talk on consulting, you are welcome to attend other events throughout the day.

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## Tutorials on Improving Software Reliability

Karen Owens

The Los Angeles Chapter of the IEEE Power Engineering Society  
and the IEEE Buenaventura Section & Computer Society Chapter  
proudly present

Tutorials on Improving Software Reliability

Organized by George Huling, [g.huling@ieee.org](mailto:g.huling@ieee.org)

at the

Distributed Generation & Green Power Technical Conference

- **Title: Predicting Software and System Reliability**  
Speaker: Dr. Samuel J. Keene, IEEE Fellow, s.keene@ieee.org

Presents new reliability assessment techniques that can be applied early in the development process to predict software, hardware, and system reliability.

- **Title: Safety-Critical Software Development**  
Speaker: John Cosgrove, P.E., CDP, IEEE Senior Member, Cosgrove Computer Systems, Inc., Cosgrove@cs.ucla.edu

Presents an approach to developing a process that repeatably produces safe and reliable products.

- **Title: Jailing Bugs Before They Bite: Find and Prevent Defects**  
Speaker: Karen Owens, IEEE Senior Member, k.owens@ieee.org, Disciplined Software Consulting, www.laacn.org/firms/dsc/

Why and how to find and remove defects early in a project.

- **Title: A Process for Better, Faster Software Reviews**  
Speaker: George Huling, IEEE Member, g.huling@ieee.org, Disciplined Software Consulting, www.laacn.org/firms/dsc/

Improving defect prevention and removal by producing reviewable intermediate products and applying cause-and-effect reasoning to such products.

For registration information, location and time see the article, [Distributed Generation & Green Power Technical Conference; Location and Registration Information](#)

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## Distributed Generation & Green Power Technical Conference Location and Registration Information

Saturday, February 28, 1998

7:45 am to 4:00 pm.

The Gas Company Energy Resource Center  
9240 E. Firestone Blvd., Downey, CA.  
(Across from Stonewood Mall).

### Conference Price:

- Before 2-18-98 IEEE Members \$12, Non-members \$15  
After 2-18-98 IEEE Members \$17, Non-members \$20
- Please send checks (payable to: IEEE PES LA Chapter) to: ATTN: Roxana Khayyam, City of Pasadena Water and Power, 150 S. Los Robles Avenue, Suite 200, Pasadena, CA 91101. Please write on the check, under memo: (For Feb. 28 Conference tickets).

For more information:

- Call Roxana at 626-744-3715 or Larry at 213-367-0802 or email: l.dalton@ieee.org.
- See <http://www.ewh.ieee.org/r6/lac/> for more information on the Conference, including the Consultants Workshop.

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## **Engineers Week Banquets**

In honor of National Engineers Week, this February, you are invited to the following banquets.

### **National Engineers' Week - Honors & Awards Gala Banquet**

Sponsored by LAC Power Engineering Society (PES), LAC IAS, and Orange County PES/IAS Chapters  
Saturday, February 28, 1998  
Odyssey Restaruant  
Granada Hills

Ticket price is \$45.00

Send checks (payable to: IEEE PES LA Chapter) to: ATTN: Roxana Kayyam, City of Pasadena Water and Power, 150 S. Los Robles Avenue, Suite 200, Pasadena, CA 91101.

Please write on check under memo: (For Feb 28, Banuqet tickets).

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### **Institute for the Advancement of Engineering**

Fellows Induction and Awards Banquet  
Saturday, February 21, 1998  
Queen Mary  
1126 Queens Highway, Long Beach

Ticket price is \$45.00 including parking

Reservation/Cancellation Deadline: 12:00 pm, February 13, 1998

Make check payable to IAE and mail to: IAE, 195 South C Street, Suite 250, Tustin, CA 92780

Phone: 714-83201113, Fax: 714-669-9341

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### **Orange County Engineering Council**

Annual Awards Banquet  
February 28, 1998  
Hyatt Regency Alicante  
Anaheim

Ticket price is \$45.00

Make checks payable to Orange County Engineering Council

Mail checks to Mr. Ray Hesser, OCEC Treasurer, P.O. Box 1156, Costa Mesa, CA 92628  
All inquiries, please call: 714-962-0091 (Office)

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### **Louis Ungar Accepts Secretary Office**

At the February 1, 1998 Executive Committee meeting, Louis Ungar was appointed Secretary for 1998. Louis is also business development chair. We thank Louis for volunteering his time to support and promote LAACN in 1998.

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### **LAACN Sweeps LA Council Elections**

*consult@hasys.com*

Two LAACN members and one former member were elected to Los Angeles Council (LAC) Committee office for 1998. Kip Haggerty, chair of LAACN is now also chair of LAC. Scott Miller, treasurer of LAACN is now LAC treasurer. Joe Antuna, former member of LAACN is now LAC secretary. For more information on the LAC elections see: the LAC web site at <http://www.ewh.ieee.org/r6/lac/council/election/index.html>. Kip, Scott, and Joe are looking forward to a busy year, supporting the LAC chapters, operating under a balanced budget, and supporting WESCON which is in Orange County this year. Congratulations to all of the newly elected officers and especially to our LAACN members.

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### **LAACN and OCCN Cooperate More in 1998**

*consult@hasys.com*

LAACN will be cooperating more this year with sister consultant network OCCN. The cooperation will focus on joint referrals, promoting consulting at WESCON, and hosting the consultants miniworkshop at the Distributed Generation & Green Power Technical Conference this month (see articles in this issue). We hope that these joint activities will strengthen both networks and serve to promote the services of all of the members to a wider spectrum of potential clients.

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## Seeking Volunteers Desiring to Broaden Their Technical Offering

*consult@hasys.com*

Volunteering your services to LAACN is one way to gain experience in new or related areas which can then be incorporated into your service offering to clients. After developing the LAACN directory search engine I began offering web development and scripting services. Since then, I have developed websites for two small businesses and one non-profit organization. I will also be using this experience to develop the search engine for the national AICN consultants directory. This volunteer activity has helped significantly in developing my business.

Are you looking to build your business skills? LAACN has several tasks available to volunteers:

- Managing the referral and announcement mailing lists
- Developing and updating pages for the web site
- Editing the newsletter

These tasks provide volunteers opportunities to develop web and internet skills which are very useful skills today. Contact the chair, [Kip Haggerty](#), if you would like to grow your technical skills by helping LAACN. We will train you for these tasks if you desire.

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**Wiley Greiner**

*LA Software*

#### Treasurer

**Scott Miller**

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(562) 431-7493

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**Louis Ungar**  
A.T.E. Solutions, Inc.

**Past Webmaster**  
**Kip Haggerty**  
*H&A System Engineering*  
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1. The web site got an overhaul over the holidays. I hope you like the new look. It is intended to give a nice professional look and feel while still providing rapid download of information. Please send comments to the [webmaster](#)
  2. The 1998 Executive Committee met after the December 3 meeting at which they took office. The minutes of that meeting and subsequent actions taken by email in December is posted on the web site at: <http://www.laacn.org/excom/index.htm>.
  3. **Coming Events:** LAACN and OCCN will be holding a Consulting Miniworkshop at the Distributed Generation and Green Power Technical Conference held in Downey on Saturday February 28. The miniworkshop is for all consultants. We have also been invited to the Engineers' Week Banquet that evening at the Odyssey Restaurant in Glendale. More information on the technical conference is available on the Council web site at: <http://www.ewh.ieee.org/r6/lac/>.
- 

### 1998 LAACN Officer Election Report

*Mort Smith, Nominating Committee Chair*

The following are the results for the election held December 3, 1997. Per Bylaws, the new officers took office at the December 3 meeting following close of the balloting. 24 ballots were received by mail and no ballots were voted at the meeting.

**Chair** Kip Haggerty 23 Other (Write Name) Ed Carl 1  
**Vice Chair** Wiley Greiner 24 Other (Write Name)  
**Treasurer** Scott Miller 24 Other (Write Name)

**New Secretary Needed:** Our secretary has resigned because he has accepted employment. If you are an IEEE member and would like to volunteer for appointment to Secretary, please contact the chair at [k.haggerty@ieee.org](mailto:k.haggerty@ieee.org) or (310) 679-2440. The secretary is responsible for meeting minutes and the newsletter.

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### **New Member Welcome**

I am pleased to welcome our latest new member: Dr. Kirby Holte. He does business as Grid Technology Associates in Walnut and is currently on the graduate faculty at the University of Southern California. He consults in the areas of electrical power distribution, quality, reliability, safety, failure analysis, and electromagnetic interference. He provides technology assessments, analysis, strategic and business planning, due diligence investigations, EMF measurement and mitigation, expert witness, and accident investigations. He also assists business and local government evaluate power purchase alternatives in California's deregulated electric power market. On behalf of the network, I extend a warm welcome to Dr. Holte.

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### **Summary of Election Advisory Issues**

*Kip Haggerty*

Below is a summary of the results of the advisory issues on the annual election ballot and my proposed responses to those results. A complete report listing the results and my commentary on the results is posted on the web site at: <http://www.laacn.org/excom/index.htm>.

**Meetings:** Restarting the Subnetworks was popular. We have two Chairs so far. George Huling for the Ventura Area and Harry Staubs for the South Bay. I am planning for a Subnetwork on the east side of LA County and am looking for a volunteer to chair it. Based on the comments, our current meeting format seems to meet the needs of the membership. There is interest in presentations on business aspects of consulting. We will try to do more of that this year.

**Network Comments:** The most prevalent comment was for contact or networking with potential clients and referrals. The second most prevalent comment was for help from experienced consultants. The network has been focused on both of those activities this past year.

**Web Directory:** The web directory has been doing slightly better than the referral voice mail, but not as well as we had hoped. We will be working to increase the effectiveness by working with OCCN and/or

AICN on joint directory efforts.

One way for members to increase the effectiveness of their listing is to have a link to additional information about their businesses, services and qualifications. Under one-third of our members have such links either to their own web sites or into one of our LAACN minisites provided as part of the membership.

We are also exploring how we are going to make the web directory sustainable. The most likely means is to move the work Leslie and I have done up to AICN and enroll all our members as listees in the National Directory. We would use the national directory as our local directory by including a selection for local network on the search form on our site. The reason doing this is that Leslie and I are going to stop maintaining the web site in 1999. By moving the directory to a service supplied by AICN, we institutionalize it and make it sustainable in the long run. If AICN and our executive committee agree, we will demonstrate the concept this year and decide by ballot in the next election if that is the direction we wish to go. The alternative is for a willing volunteer to take on the task.

I am disappointed to report that the Orange County Section removed itself from the Los Angeles Council. What that means to us is that an ad in the LAC Bulletin no longer reaches Orange County. To reach the same people using two publications will cost us twice as much next year. I recommend that we experiment with some of the other suggestions.

**Relationship with AICN:** The results indicate the following:

- A preference for joining through the local network
- No clear preference on combining the local and national directories
- A definite yes to giving national the search engine to improve their site
- A willingness to pay as much as \$100 per year for combined national and local listings

**Fee Survey.** The results of the fee survey part of the Advisory Issues have been distributed as a newsletter supplement via email or by US mail.

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## Spam

*Wiley Greiner*

So you want to know what Spam is? Besides the product from Hormel, it is a derogatory term for unsolicited email, typically from advertisers or somebody who doesn't know you personally. These days, people complain to the ISP of the user generating the spam.

Professional Spammers don't care. Some ISP's solicit business from Spammers. For example, one ISP features Bulletproof e-mail servers, that won't be shut down due to complaints. See <http://www.marketing-associates.com/spam5.htm> for an example of an ISP that markets that it just doesn't care how much Spam any of it's clients generate! Servers like these may charge an advertiser maybe \$50.00 to send mail to 25,000,000 Email addresses. See <http://www.news-media.com/email5.htm>.

Their business depends on not being shut down just because some victims don't like the junk. Some Spammers now feign responsibility by providing a "remove" procedure at the bottom of their message

If 98% of the people delete the spam, and only 2% buy some product as a result of the (spam) email, their business model is a success! Spam is in the eye of the beholder!

I for one just do the same thing with unsolicited email advertisements that I do with unsolicited advertisements arriving by US mail. I trash them. There is one slight difference: I don't complain to the sender of junk mail but I do complain to the sender of spam and his ISP.

However it is possible for a vindictive spammer to get back at the complainer. There are stories of people who complained about spam having their email address spoofed onto somebody else's spam. The ISP of the innocent person may throw them off the system for spamming, even though the person is not the real spammer. Again, antispoofing safeguards may reduce the ease with which this is done, but not eliminate spoofing entirely.

An alternative approach is to retrieve your mail using Eudora Pro and use its filtering capabilities to automatically trash email from known spamming sites or known phrases in the subject.

For more information on Spam, see <http://www.sanfranciscobay.com/dirty/anti-spam.htm>.

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Open (Contact the [Chair](#) to volunteer)

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