

IEEE life members newsletter



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Terms of Engagement

Louis A. Luceri, Chair, IEEE Life Members Committee

It is with profound sadness that I report the untimely death of our most recent Past Chairman George McClure on Saturday, 24 March 2012. George provided leadership to the Life Members Committee (LMC) for the past two years. He was a gentleman and a good friend and will truly be missed. On behalf of the 2012 LMC and the Life Member (LM) regional coordinators, I wish to extend our deepest sympathy and condolences to his wife and family. A copy of George's obituary is printed in this newsletter. George, you will be missed.

I would like to thank our IEEE staff for all their efforts and contributions to keep this committee on target for the past year. I also want to thank Dan Toland for all the work that he has done, providing staff support to the LMC. As of September 2011, Dan accepted another position at IEEE as a member of the IEEE Power & Energy Society as the Scholarship Program director. We salute you Dan! Good luck in your new position. In the same vein, we welcome Stacey Waters, who is a senior administrator working for Cecelia Jankowski, as our new staff support person.

This past year has been one of growth for LMs. As of the end of December, the total number of LMs was 26,548. Forty percent of IEEE Fellows are LMs, followed by 20% of Senior Members, and 6.8% of Members. In addition, we now have 75 active LM Affinity Groups, nine of which were formed in 2011. We must also recognize the elevation of 2,476 IEEE Members to the position of LM as of 1 January 2011. Congratulations!



IEEE Life Members
Committee Chair
Louis A. Luceri

The LMC reports to the Member and Geographic Activities (MGA) Board through the MGA Member Engagement Life Cycle Committee. This committee is responsible for establishing programs that facilitate growth and development in the member and in IEEE.

Engagement—now that's an interesting word. I decided to do some etymological research and went to my trusty *Roget's International Thesaurus*.

Four synonyms caught my attention: "inducement," "interaction," "involvement," and "participation." How interesting. Digging a little further, I found references to persuasion, networking, intercommunication, participation, partaking, sharing, contribution, and association. All of these words are pathways to facilitate the growth and development of the IEEE LM.

Looking over the reports from some regions, there appears to be a lack of engagement of LMs in IEEE-related activities. This has caused me concern, since LMs represent the history of our organization. IEEE's motto is "Advancing Technology for Humanity." The LMC believes that keeping LMs active and engaged is a key component to the success of IEEE in local IEEE activities. LMs can provide service both within IEEE and in the community. They are the perfect mentors for Graduates of the Last Decade members, they can serve the local community as judges in paper contests and science fairs, they can serve IEEE as members of the admissions and advancement committees in their local areas, they can provide historical data when it comes to identifying members to be recognized by the awards committees, and they can assist teachers in preparing and



presenting material related to science, technology, engineering, and mathematics, or serve as preuniversity mentors to students who are considering science or engineering as a future. Consequently, one of the challenges I offer to the present regional coordinators is to take the lead in determining the best practices from their respective Affinity Groups that have successfully engaged their LMs and share them with the other coordinators.

As of this writing, 30 members have signed on for the 2012 Milestone Technical Tour of Japan, scheduled for 20–28 May 2012. Also, an LM reception was held in October 2011 in Chicago, Illinois, and another in the New York metropolitan area at the Heldrich Hotel in New Brunswick, New Jersey, in March 2012. In June 2011, the LMC agreed that the Commemorative Coaster for 2013 would be dedicated to James Clark Maxwell, who conceived and developed his unified theory of electricity, magnetism, and light. He developed his equations

between 1860 and 1871, while at his family home Glenlair and at King's College in London, where he was a professor of natural philosophy. A cornerstone of classical physics, the theory of electromagnetism is summarized in four key equations that now bear his name. Today, Maxwell's equations underpin all modern information and communication techniques.

As a reminder (which was also stated in the previous newsletter), there is limited stock of previous years' commemorative coasters available. If you are missing any of the previously released coasters and would like to complete your set, they may be obtained for an additional US\$100 donation per coaster. You may submit your request to the LM Fund via e-mail at donate@ieee.org.

In closing, please remember to contribute to the IEEE LM Fund if you have not already done so. LM activities are not supported by member dues. The Fund supports both educational and professional projects of interest to IEEE LMs.

Congratulations to the 2012 Outstanding Life Members Affinity Groups

The IEEE Life Members Committee (LMC) is pleased to announce the 2012 Outstanding Life Members (LM) Affinity Groups. The Outstanding LM Affinity Groups were identified based on the number of LM events held, the average attendance at those events, and the number of contributors to the IEEE LM Fund.

In total, the groups noted below conducted over 85 events with more than 3,700 participants, and LMs within their Sections contributed more than US\$6,000.

Section

New York***
Cedar Rapids**
Central Texas
Wichita
Buenaventura***
Los Alamos/Northern New Mexico
Kingston***
Peterborough*
Croatia*
Israel**
Colombia***
Panama**
Peru**
Bombay**
South Australia

2011/2012 Chair of LM Group

R. Mazzatto
Bob Dawson
Thomas O'Brien/Ernest Franke/David Baron
George Dean
Jerry Knots
Albert Engelhardt
Juergen Schwahn/John Vilayil
James Dymon/Simon Taylor
Branka Zovko-Cihlar/Aleksandar Szabo
Jacob Baal-Schem
Alfonso Perez-Gama
Numan Vasquez
Cesar Chamocho
Atindra Banerjee
Robert Bogner

***Recognized four years in a row

**Recognized three of the last four years

*Recognized two of the last four years

The IEEE LMC believes that keeping LMs active and engaged is a key component to the success of IEEE in local IEEE activities. This engagement can be conducted through the local Section and/or Technical Chapter, but the LMC believes that having a local LM Affinity Group is a more effective method in keeping LMs active.

If your Section doesn't have an LM Affinity Group, you are encouraged to discuss the formation of a group with your Section leadership. In 2011, IEEE LM Affinity Groups conducted over 180 events, which included more than 6,600 participants.

The IEEE LMC would like to congratulate each Outstanding LM Affinity Group for its efforts.

IEEE Life Members Fund Benefits Libraries

Public libraries are so much more than books. They have roots in communities and a real interest in the well-being of the people they serve. Therefore, libraries strive to provide relevant programs and materials to meet the unique needs of the young and old. Sometimes it takes a little financial support to help a good program along. Two IEEE Foundation grants awarded from the Life Members Fund (LMF) are helping public libraries provide original and effective programs that are enhancing the education and lives of young people.

The first grant was awarded to the Piscataway Township Public Library (PTPL), Piscataway, New Jersey, which created and hosted Women in Science & Engineering Day. This US\$1,500 grant enabled a project designed to celebrate and encourage women in science and engineering. An open house and exhibit held on Saturday, 2 June 2012, provided opportunities for the local community to meet female scientists and engineers, participate in demonstrations, and visit exhibits. PTPL is located down the road from the IEEE Operations Center.

The second grant allowed the IEEE Chicago Section to create the IEEE Chicago Section Science Kits for Public Libraries initiative, which offered funding to U.S. public libraries in IEEE Region 4 for the development of math and science collections for preuniversity students (K–12). In response to its call for proposals, the IEEE Chicago Section received 80 applications from libraries across

IEEE Region 4. Thanks to the US\$40,000 grant from the LMF, 26 libraries in rural and urban areas across nine states received funding to add science and math kits their collections. An added bonus to the initiative was that many IEEE members in IEEE Region 4 have volunteered to assist their local libraries with kit selection and implementation.

The Science Kits for Public Libraries initiative was an expansion of a pilot project supported by the IEEE–Chicago Section Fund of the IEEE Foundation. The pilot conducted at the Mount Prospect Public Library (MPPL) in Mount Prospect, Illinois, enabled librarians to develop science kits giving students access to prepared experiments and science materials that they might not encounter in the traditional classroom. Additionally, the MPPL librarians created the Mad Scientists Club, an educational program that allows students to conduct experiments at the library with the guidance of a librarian. Watch MPPL's Mad Scientist Club on YouTube (<http://www.youtube.com/watch?v=2NRePbjwyak>) to view the kits in action.

"I was impressed by the innovation of MPPL's Youth Services Department," said Science Kits for Public Libraries Project Director John Zulaski. He added, "And I believe that public libraries are an ideal place to make materials available for students to deepen their scientific knowledge."

IEEE Foundation Hosts Local Life Members

The IEEE Life Members Committee (LMC) and the IEEE Foundation hosted an IEEE Life Members (LMs) Reception on 25 March at the Helderich Hotel in New Brunswick, New Jersey. Local IEEE LMs from five Sections were invited, and more than 70 guests attended. The reception provided local LMs and the LMC an opportunity to gather in a social setting and exchange ideas about LM activities and, of course, to socialize and enjoy lunch.

During the gathering, Louis A. Luceri, IEEE LMC chair, shared committee activities and accomplishments of the IEEE Life Members Fund (LMF). The LMF of the IEEE Foundation supports technological and educational outreach; the preservation, research, and promotion of the history of the profession and IEEE; activities of interest to IEEE LMs, potential engineers, and engineering students; and educational programs including student travel grants, poster contests, fellowships, and prize paper awards.

John Meredith, IEEE Foundation board member, discussed how and why LMs should support the LMF. IEEE LMs were encouraged to add "First-Hand Histories" to The IEEE Global History Network (GHN) at www.ieeeghn.org, which preserves and promotes



LMC Chair Lou Luceri explains the grants process.

the history of innovation in electrical engineering. Nathan Brewer, IEEE GHN administrator and librarian, spoke at the luncheon. While viewing the GHN, be sure to enjoy the Oral Histories section.

The 2012 IEEE LMC members were introduced to the group. Feedback was requested so the membership can



IEEE Past President John Vig (left) takes a moment to chat with IEEE Foundation Board Member John Meredith.

continue to shape the scope and success of LMC efforts. Attendees shared stories of their local activities and dis-

cussed the importance of staying active and sharing knowledge and experiences with future engineers. This was the sixth reception of its kind held specifically for LMs. Another will be scheduled in September or October 2012 during the next LMC meeting.

For more information on the reception, contact Karen Galuchie, senior manager, IEEE Foundation Operations and Planned Giving, at +1 732 562 3860 or k.galuchie@ieee.org. To learn more about the IEEE LMF, visit the IEEE LMC at http://www.ieee.org/web/volunteers/mga/home/life_members_committee/index.html.

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Special thanks to those who donate to the IEEE LMF of the IEEE Foundation. Your donations allow us to host gatherings and support activities of interest to LMs. Your donation may make you eligible to receive an LM pin, Milestone coaster, or become a member of the IEEE Heritage Circle or IEEE Goldsmith Legacy League. For more information, visit www.ieeefoundation.org.

Vancouver Section Celebrates 100 Years

The IEEE Vancouver Section Life Member (LM) Affinity Group is comprised of 76 LMs, 37 Life Senior Members, and 11 Life Fellows. During the year, LMs actively participate in local section events including an annual social event, which is usually held at a cultural center and includes a show or dance along with dinner or a reception, and the Annual General Meeting. Other events include LMs as distinguished speakers or honorary guests at events and banquets. This year, in celebration of the 100th anniversary of the Vancouver Section, the LMs have taken part in quite a few events.

On 27 June 2011, the Section welcomed its LMs and IEEE Canada officers and celebrated LMs' contributions. Like other celebrations in honor of the Section's centennial anniversary, the evening demonstrated how vital and significant the Vancouver Section has been over the course of its first 100 years. Over 70 Section members, IEEE dignitaries, and special guests turned out to take part in the celebration and to learn more about the Section's first century. The event was hosted by the Section's LM Affinity Group and was kicked off by Vancouver Section LM Chair Shail Mahanti.

Ferial El-Hawary (past president, IEEE Canada) and Bob Alden (president, IEEE Canadian Foundation) brought with them an official congratulations from IEEE Region 7. Phil Horton, history chair of the BC Hydro Power Pioneers, offered congratulations from the organization and formally donated to the Section two copies of their latest historic book: *Voices from Two Rivers—Harnessing the Power of the Peace and Columbia*.

Michael Geselowitz, staff director of the IEEE History Center, delivered the keynote presentation, which illustrated the pioneering role assumed by the Section and its members. Geselowitz lauded the efforts of the Vancouver Section's Centennial Committee in collecting and cataloging many historic artifacts and described the IEEE Global History Network (www.ieeeghn.org), a Web site where all IEEE Members can contribute and annotate historical material. He encouraged the members of the Vancouver Section to contribute their historical materials to the site.

Chris Scholefield presented an additional look at some specific aspects of the Section's history, including facts and figures and some very interesting photos. The audience was given the opportunity to view original copies of the Vancouver Section newsletter—*The Contact*—with some dating back over 50 years.

On 23 August 2011, Section members gathered at the Athletes Village in False Creek to honor the achievements of the engineering profession and its members over the last century. The City of Vancouver and the Association of Professional Engineers of British Columbia paid tribute to the Section. The group walked to a site in front of Science World, where it was revealed by current Section officers that negotiations are currently underway with the City of Vancouver to erect a monument depicting the logo of IEEE with a dedication plaque commemorating the centennial of the IEEE Vancouver Section.

On 18 October 2011, the mayor of Vancouver proclaimed that the week of 21–28 October 2011 would be known as "Electrical and Electronics Engineering Awareness Week" in honor of 100 years of technological excellence provided by

IEEE and the Section. The proclamation was presented to the Section officers during the 21 October Section Centennial Technical Symposium held at the Creekside Community Recreation Centre at the Olympic Athlete

Village. The symposium addressed topics such as communications, power engineering, information technologies, and energy by seven distinguished speakers looking at the past, present, and future of electrical and electronics engineering.

Bombay Section Active in 2011

Life Members (LMs) in the Bombay Section in India gave two presentations on the role and contributions of IEEE to students of engineering colleges in Mumbai. LMs talked about the advantages of IEEE membership to the student members to promote student activities.

The Section's LMs also discussed training programs or provided assistance to the Bombay Section Executive Committee (ExCom) for technical events. This included discussions on technical events and involved LMs sharing

their experience on their past technical work with the present ExCom members.

As in the previous year, LMs arranged two Sunday lunch meetings including spouses and ExCom members. Talks were given by Rajeev Sharma of Indian Railways in March and Prof. Ispita Banerjee of Fordham University, New York, in December at the Hotel Taj in Mumbai. These meetings were both useful and successful, and the LMs are interested in arranging similar meetings in the future.

California's New Life Member Groups Draw Big Crowds

Two new Life Member groups on the west coast have been doing extremely well. The Silicon Valley group, chaired by Les Besser, and the Oakland/East Bay group, chaired by Charles Herget, have been attracting large audiences to their regular meetings. In June 2011, 115 people came to hear Prof. Mark Jacobson of Stanford speak about renewable energies. In October 2011, the

groups held a joint meeting where Dr. Edwin Moses of Lawrence Livermore Laboratories presented his views on safe nuclear energy to an audience of 130 attendees. The latest talk in April 2012, titled, "The Drive for Electric Vehicles," was presented by the two cofounders of Tesla Motors, Marc Tarpenning and Martin Eberhard, to a standing-room only crowd in the 140-seat meeting room.



A crowd of 115 people gathered to hear Prof. Mark Jacobson talk about renewable energies.



Prof. Jacobson and Silicon Valley LM Group Chair Les Besser admire Jacobson's electric Tesla Roadster.

IEEE Computer Society History Activities

Most of the IEEE Computer Society's publications and activities focus on state-of-the-art computing technology and the computing profession with occasional retrospective articles in the Society's journals and magazines. However, a component of the Society's activities is

more directly focused on computing history. Many readers of the *IEEE Life Members Newsletter* may be interested in such sources of information on computing history.

IEEE Annals of the History of Computing. The Computer Society's longest running explicit history

activity is the *IEEE Annals of the History of Computing* (computer.org/portal/web/annals). It has traditionally been a print journal and is now available in an electronic publication format. Founded by computing pioneers in 1979 (and operated by the Society since 1992), the *Annals* has long published first-person accounts from participants in the history of computing. More recently, the *Annals* has become a preeminent journal of scholarly writing by professional historians on computing history. The *Annals* encourages submissions from both computing practitioners and computing historians.

In late 2011, the Computer Society Press published a history book from the *Annals: The IBM Century: Creating the IT Revolution*, edited by Jeffrey R. Yost. This book reprinted a careful selection of articles on IBM from the *Annals*. The articles are augmented by an insightful introduction and overview, timeline, and annotated bibliography of IBM history, all by editor Yost. The 282-page book is available from Amazon.com and other retail bookstores (I have reviewed the book at Amazon).

Computing Then. In recent years the “Computing Then” department (www.computer.org/portal/web/computingthen) of the Society’s “Computing Now” Web site (www.computer.org/portal/web/computingnow) has highlighted and posted online historical content from the *Annals* and elsewhere.

Computer Society History Committee. Since 1990, the Society has also maintained a Society History Committee. Members of the History Committee work on various projects relating to Society history and to computing history more generally. A recent example of the latter is a project commemorating the 50th anniversary of the Massachusetts Institute of Technology’s (MIT’s) Compatible Time-Sharing System (CTSS), important for reasons explained below. The full document is freely available as item five at www.computer.org/portal/web/volunteercenter/history.

CTSS. Time-sharing was in the air around MIT and Cambridge in the years circa 1961. MIT faculty, staff, and students who had worked directly with the Whirlwind or TX-0 computers sitting at their consoles wanted more of that interactive access—the then-traditional computer system

batch processing approach was very slow for program debugging and was made worse by machine overloading as digital computing was becoming more popular.

In the spring of 1961 Prof. Fernando Corbató, then associate director of MIT’s Computation Center, began to design a system he called the “Compatible Time-Sharing System” for MIT’s IBM 709 computer. Corbató initially worked with two of his Computation Center staff members, Robert Daley and Marjorie Merwin. They arranged for IBM to provide an interrupt capability for the machine that allowed them to take control of it. They created a special version of the operating system that set aside 5 kilowords of memory (of 32 kilowords total) for the time-sharing supervisor (and for buffering typewriter terminal input and output). Tape drives were used to store the programs and files of the users of the four terminals. It was crude, but that original configuration allowed a November 1961 demonstration of interactive computer use. (The traditional batch processing system still operated in parallel with the time-sharing system—that was the “compatible” part of CTSS.) Thus, 2011 was the 50th anniversary of the conception and initial demonstration of CTSS.

By 1963, CTSS was a stable, large-scale system, operating with a large disk drive for file storage, more memory for a refined time-sharing supervisor, and a controller that handled a significant number of local and remote terminals. That summer, CTSS supported experimentation with time-shared computing by a stream of notable visiting computing pioneers. CTSS was proof positive of the feasibility of time sharing.

The Corbató-led substantive, solid, early implementation of time sharing in CTSS at MIT was an important stimuli for the era in computing that continues to this day—the era where users themselves have direct contact with a computer, telling the computer what they want it to do from moment to moment.

David Walden
2011–2012 Chair
Computer Society History Committee

Call for Grant Applications

The IEEE Life Members Committee (LMC) is responsible for the administration of the Life Members Fund (LMF), in coordination with the IEEE Foundation. The LMF supports the awarding of grants to projects of interest to Life Members (LMs), potential engineers, and engineering students.

Along with the IEEE Foundation, the LMC accepts grant applications for new and innovative projects two times per year. The next 2012 grant application deadline is 24 July 2012 at 11:59 p.m. EST.

To be considered for grant funding by the LMC, a project should have a clearly defined objective and provide support in the following areas:

- applying technology for humanitarian efforts
- engineering education and workforce development
- the history of technology.

If you feel that your unit (Section or Chapter) has a project that fulfills the criteria identified above, you are welcome to apply through the IEEE Foundation Web page (www.ieee.org/organizations/foundation/grants.html). Before submitting an application, please review the IEEE Foundation’s grant guidelines. Information regarding grant applications can be found at www.ieeefoundation.org.

Important News on Member Group Term Life Insurance

In the December 2011 edition of the *IEEE Life Members Newsletter*, we wrote about a rate reduction effective 1 March 2012 for those members in the currently marketed, IEEE-sponsored, Group Term Life Insurance Plan. The currently marketed term life plan is “Plan IX,” and it contains the majority of the current insureds in the IEEE Member Group Term Life Insurance Program. Some members may be insured under an earlier iteration of the plan—one of the “frozen” plans—and are not eligible for the rate decrease. To confirm if you are eligible for the rate decrease mentioned in the December 2011 newsletter,

please reference the Individual Schedule of Benefits page in your Group Term Life certificate, or call the administrator at +1 800 493 IEEE (4333).

These plans are underwritten by New York Life Insurance Company, 51 Madison Avenue, New York, NY 10010 on Policy form GMR.

The IEEE Member Group Term Life Insurance Plans are administered by Marsh U.S. Consumer, a service of Seabury & Smith, Inc.

d/b/a in CA Seabury & Smith Insurance Program Management. CA Ins. Lic. #0633005. AR Ins. Lic. #245544

Leave a Bequest to the IEEE Life Members Fund of the IEEE Foundation

Bequests are the most common form of legacy giving. By leaving a bequest in your will or trust, you will be providing the critical resources the IEEE Life Members Committee needs to support the next generation of engineers.

Bequests to the IEEE Life Members Fund of the IEEE Foundation should be worded as follows:

I give the sum of \$_____ [or all (or stated percentage) of the rest, residue, and remainder of my estate] to the IEEE Foundation, Incorporated, New York, NY, for the



benefit of the IEEE Life Members Fund.

Notify the IEEE Foundation of your intentions to leave a bequest in your will or trust, and you will be invited to join the elite planned giving donor recognition group—the **IEEE Goldsmith Legacy League** and be *Forever Generous*. Donors may choose to remain anonymous.

For more information visit www.ieeefoundation.org or contact Karen Galuchie in the IEEE Development Office at +1 732 562 3860 or donate@ieee.org.

IEEE Life Members Fund 2011 Honor Roll of Donors

The IEEE Life Members Committee (LMC) gratefully recognizes the IEEE Members and other friends who have directed their donation to the IEEE Life Members Fund of the IEEE Foundation. Those names are listed here. A full listing of donors of US\$100 or more to all of the 130+ IEEE Foundation funds appear in the IEEE Foundation’s Honor Roll of Donors, which is mailed in July to donors of US\$25 or more. Your support enables the IEEE LMC to support philanthropic activities that encourage students and young electrical engineers to pursue careers in engineering, investigate the history of electrical engineering, and represent the interests of IEEE Life Members (LMs) or similarly mature members. All listings acknowledge gifts of US\$100 or more made during the calendar year 2011 specifically to the IEEE LMs Fund of the IEEE Foundation.

The IEEE Development Office makes every effort to ensure the accuracy of the listing, including proper acknowledgment of gifts and correct spelling. Please notify us of omissions or errors by sending an e-mail to donate@ieee.org or calling +1 732 562 5550.

The IEEE LMC extends a special thank you to those donors who are not included here.

2011 Honor Roll of Donors

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James F. McVeigh, LM
Henry E. Meadows, Jr., LF
W.D. Medweith, LM
J.C. Meier, LM
Robert Meier, LM
H. Paul Meisel, LSM
Richard A. Mendler, LM
Harry W. Mergler, LF
Dennis F. Meronek, LM
David W. Merrill, LM
Paul M. Merry, LM
Hans U. Meyer, M
James R. Meyers, LM
L.D. Meyers, LM
James R. Michalec, LF
Harry Mieras, LSM
John M. Milan, LSM
James R. Miles, Jr., LM
James M. Miletich, LM
George H. Miley, LF
Christopher R. Miller, LM
Harold G. Miller, LM
John O. Miller, LM
Jon R. Miller, LM
Melvin Miller, LM
Roger L. Miller, LM
William G. Minahan, LM
Milton J. Minneman, LSM
N. Minnici, LM
Douglas B. Miron, LSM
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Glenwood J. Mitchell, LM
Robert T. Mitchell, LM
W.J. Mitchell, Jr., LM
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John K. Miyasaki, LM
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Eugene L. Mleczo, LM
Klaus P. Model, LM
Ronald R. Mohler, LF
James M. Moidel, LM
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John I. Molinder, LSM
Ronald L. Monahan, LM
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Thomas C. Moore, LM
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Hiroyuki Mori, M
Mititada Morisue, LM
Yuji Morita, LM
James B. Moritz, LM
Lloyd A. Morley, LF
Maynard B. Morris, LSM
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Rangaswamy Mukundan, LSM
Fred F. Mulholland, Jr., LM
Walter D. Mullins, LM
Joe L. Mumma, LSM
R.A. Munroe, LM
John C. Munson, LF
Kaoru Murakami, LM
Patrick R. Murphy, LSM
William P. Murphy, Jr., LSM
James B. Murray, LM
M.P. Musick, LM
Kalyan K. Mustaphi, LM
Max W. Muterspaugh, LSM
George J. Myers, LM
Atsushi Nagano, LM
Louis A. Naglak, LM
Dr. H. Troy Nagle, LF
Kyoji Naitoh, LM
Yoshimi Nakano, LM
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Gene M. Nishimura, LM
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Paul J. Notarian, LSM
Fred L. Nylander, LSM
Michael J. O'Connor, LM
John T. O'Donnell, LM
Stewart Ogden, LM
Nobuo Ohmori, LM
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Ryoichi Ohnishi, LF
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Katsuhiko Ohsaki, M
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Masaji Okada, LM
Aksel Olesen, LM
James P. O'Loughlin, LM
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Dennis R. Olsen, LSM
William A. Olsen, LM
Ray Olson, LM
Shoichi Ono, LSM
David O. Onstad, LM
Ibrahim Onyuksel, LM
William H. Oost, LM
Joseph R. Oranchak, LM
Joseph Orr, LSM
John M. Osepchuk, LF
Larry D. Paarmann, LSM
Bill L. Pack, LM
Casey D. Page, LM
E. Valdes Pages, LM
Ram K. Paharia, LM
Mohan Pai, LM
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L.C. Palmer, LSM
Veikko A. Palva, LSM
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Robert E. Papsco, LM
David J. Park, LM
Kyu T. Park, LF
Yong Jin Park, LSM
Jerald V. Parker, LSM
R.G. Parker, LM
Robert D. Parker, LM
Lowell C. Parode, LSM
Micheal E. Parten, LSM
Bernard M. Pasternack, LSM
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C. Kumar Patel, Ph.D., LF
Devendra J. Patel, LM
Rajanikant R. Patel, LM
Richard G. Patrick, LSM
John P. Patterson, LM
Neal A. Patterson, LSM
R.B. Patterson, 3rd, LM
John Paulson, Jr., LM
Richard S. Payne, LF
Kenneth R. Peal, LM
D.R. Pearson, LM
John B. Peatman, LF
William E. Peck, LM
Robert K. Pedersen, LM
Leroy S. Pendleton, LM
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Douglas A. Perham, LM
Frank Perkins, LM
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Thomas F. Perrine, LSM
Richard T. Perron, LSM
James L. Perry, M
H.R. Person, LSM
Elmer M. Petercsak, LM
Emanuel P. Peters, LM
Bernard L. Pfefer, LSM
Hans K. Pfyffer, LM
P.G. Phillips, LM
Robert R. Phillips, LM
James E. Pierson, LM
Robert W. Pinto, M
Michael J. Piovoso, LSM
A.J. Poggio, LSM
Joseph D. Polacky, LM
Bernard Pollack, LM
Ansis Pommers, LM
Adolfo F. Ponce De Leon, LSM
Somkiat Pongkanta, LM
Paul Popenoe, Jr., LM
Don J. Popp, LM
Nachum Porath, LM
Edwin L. Post, LSM
Dusan Povh, LF
Ramesh S. Pradhan, LM
Ronald E. Pratt, LM
George G. Preckshot, LM
Ralph J. Preiss, LSM
Ronald L. Prevost, LM
P.A. Probst, LM
B.J. Procopio, LM
E. Norris Procter, LSM
Roger J. Provencal, LM
James W. Pryde, LM
Robert J. Puckett, LM
Emerson W. Pugh, LF
Walter C. Pumo, LM
Martin Rabinowitz, LM
John R. Ragace, LM
Yudh V. Rajput, LSM
G. Ramakrishnan, LSM
Ramachandra Ramakumar, LF
Simon Ramo, LF
Russell K. Raney, LF
Kenneth F. Rath, LM
Donald E. Rathbone Ph.D., PE, LF
R.L. Raybold, LM
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Stephen R. Rebain, LM
Vellenki U. Reddy, Ph.D., LF
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John A. Reif, LM
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William F. Reinke, LM
Carl F. Rench, LM
Alexander M. Rende, LM
R.K. Reynolds, LM
Eugene A. Rheingans, LM
Richard G. Rhoda, LM
Laurence B. Rice, LM
John Richards, LF
Robert E. Richards, LM
Alexander L. Richardson, LSM
Gordon Richardson, M
Paul Richman, LF
Leonard H. Richter, LM
R.L. Riegler, LM
Anthony L. Rigas, LF
Daniel Ritt, M
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John D. Robbins, LSM
Roger M. Roberge, LM
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Larry W. Roberts, LM
Roland W. Roberts, LSM
Joseph E. Robertshaw, LM
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J.S. Robinson, LM
Leslie L. Robinson, LM
N. David Robinson, M.D., LM
Willard A. Robinson, LSM
Richard B. Robrock, II, LF
William M. Robson, LM
George P. Rodrigue, LF
John S. Roe, LM
Stanley B. Roeske, LM
Heljar B. Rognerud, LM
Hans G. Rolfes LM
Salvatore A. Romano, Jr., LSM
Jean L. Ronat, LM
Albert J. Rosa, LSM
Jack Rose, LM
Vincent S. Rose, LM
Lawrence Rosenthal, LM
James H. Ross, LM
R.G. Ross, LM
John E. Rossi, LM
William F. Roth, LM
Thomas W. Rounsavell, M
Tarunbikash Roy, LM
Lawrence G. Rubin, LF
Raymond L. Rudolph, LM
Robert Eric Russell, M
R.D. Ruth, LM
Ronald M. Rutkowski, LM
Charles E. Ryan, Jr., LF
Albert L. Ryff, LM
Frederick M. Rysz, LM
Sevier Sabin, LM
William E. Sabin, LSM
Howard G. Sachs, LM
Samuel Saez, LM
Athanasios N. Safacas, LSM
Abbas Salim, I
George M. Samaniego, LM
Phillip A. Sandford, LM
Gordon W. Sangster, LM
Jun-Ichi Sano, LM
Taiji Saruwatari, LM
Yozo Satoda, LM

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Herbert Schanker, LM
Rolf Schaumann, LF
Larry L. Schedin, LM
Allan C. Schell, LF
Robert A. Scheman, LSM
Alan L. Schildkraut, LSM
Randall E. Schiller, LM
I. Morton Schindler, LSM
Theodore C. Schirmer, LM
Edward L. Schlossberg, LSM
Frank W. Schmechel, LM
Paul E. Schmid, LSM
Dean J. Schmidlin, Ph.D., LM
Guenther Schmidt, LF
Ronald V. Schmidt, LF
Dorothy L. Schnabel, LM
Richard L. Schneider, M
Robert L. Schneider, LM
W.K. Schnure, LM
Stanley M. Schreiner, LSM
David A. Schroeder, LM
Mischa Schwartz, LF
Leon Schwartzman, LF
T.J. Scurba, LM
Richard J. Scott, LM
W.G. Scott, LM
William G. Scott, LSM
David A. Seamans, LSM
Lloyd E. Sease, LM
Robert L. Seitz, LSM
John R. Seiver, LSM
W. Semenik, LM
Douglas R. Semmes, Jr., LM
J.I. Sendlin, LM
Ashis K. Sengupta, LM
Kenneth D. Senne, LF
Robert E. Sentz, LM
Peter G. Serev, LM
John E. Setaro, LM
Charles E. Seth, LM
Walter D. Seward, LSM
Melvin H. Shadbolt, LSM
D.G. Shales, LM
Charles K. Shanks, PE, NSPE, LSM
Tom G. Sharpe, LM
George A. Shaton, LM
Harish P. Shelat, M
Albert P. Sheppard, LSM
Earl A. Sheridan, LM
Yukio Shibata, LM
Haruo Shiki, LM
Shoji Shinoda, LF
James P. Shipley, LM
Goro Shirai, LM
Koichiro Shoda, LM
Francis R. Shoemaker, LM
Rachad M. Shoucri, LSM
Roy W. Shoup, Jr., M
K.R. Siarkiewicz, LF
John J. Sideravage, LM
Rubens A. Sigelmann, LSM
Thomas W. Sigmon, LF
H.S. Silvus, Jr., LM
Carl F. Simone, LSM
Donald C. Simoneaux, LM
Dolph Simons, LM
Murray Simpson, LF
R.A. Simpson, LM
William A. Sims, LM
Heramb Singh, LM
William A. Skillman, LF
John W. Skooglund, LF
J.C. Skorupski, LM
Walter Skuggevig, LM
Leslie H. Sladen, LM
Douglas C. Smathers, LM
Kenneth B. Smernoff, LM
Archie E. Smith, LM
Douglas B. Smith, LM
Gerald S. Smith, LSM
Harold P. Smith, Jr., LSM
Jeffrey E. Smith, LM
Michael C. Smith, LM
Paul L. Smith, LSM
Richard A. Smith, LM
Robert D. Smith, LM
Robert T. Smith, LSM
Robert T. Smith, LSM
Sherman S. Smith, LM
Theodore J. Smith, LM
Thomas D. Smith, LM
Vernon Z. Smith, LSM
Warren D. Smith, LM
William A. Smith, LM
William H. Smith, LM
Allen W. Smithson, Jr., LM
Ronald C. Snare, LSM
T. Louis Snitzer, LM
Charles Sobel, LSM
P.J. Sokolow, LM
Ricardo J. Solorzano, LSM
Rodney J. Soukup, LF
Phil F. Southern, LM
John H. Spare, LSM
Donald J. Spencer, Ph.D., LM
Stuart M. Spitzer, LM
Ulrich Spycher, LM
Henry S. St. John, Jr., LM
Roger I. Staab, LM
Thomas D. Stade, LM
Peter W. Staecker, LF
Forrest L. Staffanson, LSM
Kenneth Stafford, LM
Ronald J. Stahara, LM
Altan C. Stalker, LM
Bernard A. Stankevich, LM
Richard H. Stanley, LSM
L. Robert Starkey, LM
Malcolm G. Stearns, LM
Roy H. Stehle, LM
Gerhard Steinbrenner, LM
Dave W. Steinmeier, LSM
Odd Steinsto, LM
Edward M. Steudel, Jr., LM
Marc L. Steuer, M
Alfred M. Stevens, LSM
A.C. Stevenson, LSM
Frederick A. Stich, LSM
Jack J. Stiffler, LF
M. A. Stiffman, LM
Michael V. Stimac, LM
John F. Stledger, LM
George Stoepfel, LM
James C. Stoffel, Ph.D., LF
Ronald B. Stokes, LM
William T. Storey, LM
Edmund R. Stoughton, LM
Carl N. Stover, LM
Richard W. Strahan, LM
Bradley J. Strait, LF
Joel A. Strasser, LSM
Robert A. Stratbucker, LSM
Robert D. Strattan, LSM
John D. Stromer, LM
Stephen Suckenic, LM
R. Sudarsanam, LSM
Hisanobu Sugano, LM
F.J. Sullivan, LM
Jerry S. Sullivan, LM
Thomas H. Sumida, LM
Arthur H. Summers, LSM
David Sun, Ph.D., LM
George S. Sunday, LM
David A. Sutton, LM
Clarence K. Suzuki, LM
Donald Y. Suzuki, LM
Yasunobu Suzuki, LM
James E. Svarovsky, LM
Philip H. Swain, LSM
H.W. Swan, LSM
James A. Swetlikoe, LSM
D.W. Swift, LSM
Guy E. Swifte, LM
Kenneth Switzer, LM
Joseph P. Szafranski, LM
Harry Tabak, M
Margaret R. Taber, LSM
Toshihiko Takagi, LM
Akira Takahira, LM
T. Takasuna, LF
Tadasu Takuma, LF
Leon V. Talmage, LM
Yoshihiro Tanada, M
Richard I. Tanaka, LF
Duncan N. Tanner, LM
Alistair W. Taylor, LM
Charles A. Taylor, LM
George P. Tecos, LM
Michael D. Teems, LM
Lewis M. Terman, LF
Ronald J. Texel, LM
James L. Thacker, LM
Douglas J. Theis, LSM
Paul W. Thiede, LM
Talmadge D. Thomas, LSM
Joseph F. Thomason, LM
David L. Thompson, LM
James R. Thompson, LSM
Roger W. Thompson, LM
D.J. Thomson, Ph.D., LF
J.R. Thornton, LM
Peter M. Thorp, LSM
Howard A. Thrailkill, LM
James M. Tien, Ph.D., LF
Kenneth D. Tinto, LM
Robert W. Tiplin, LSM
George D. Tkach, LM
Emery P. Todd, Jr., LM
Takashi Tokuyama, LF
Hideo Tomita, LM
Willis J. Tompkins, LF
Edward M. Tomsic, LSM
P. Torgrimson, LM
John B. Trevor, III, LM
Timothy N. Trick, Ph.D., LF
Bryan C. Troutman, LM
Richard True, Ph.D., LF
Wiwat C. True, LM
Tim Trueblood, LM
Henry P. Trujillo, LM
Henry J. Trussell, LF
John J. Trutwin, LM
Henry K.H. Tseng, LM
George Tsolakakis, LM
Haruhiko Tsuchiya, LSM
Toru Tsuda, LM
Takehiko Tsuiki, LSM
Saburo Tsuji, LF
David M. Turner, LM
Hubbard C. Turner, Jr., LM
P.D. Tuttle, LSM
Frederick J. Twogood, LSM
Katsumi Uchida, LM
Teiji Uchida, LF
Malcolm R. Uffelman, LF
Thomas E. Ullman, LM
Martin A. Uman, Ph.D., LF
Warren W. Umholtz, LM
Gerald S. Ustach, LM
Ramasamy Uthrusamy, LM
Kiminori Utsunomiya, LM
Robert E. Vago, LM
Bernhard U. Vainik, LM
Joseph A. Valent, LM
D.G. Van Coevering, LM
E.C. Van Der Meulen, LF
B.F. Van Dinter, LM
Arthur Van Gelder, LSM
James C. Van Zee, LM
Robert F. Vandak, LM
Kenneth E. Vannice, LM
William A. Vaughan, PE, LM
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James R. Veale, LM
Donald D. Vesely, LM
Alfred E. Victor, LM
Jens Vidkjaer, LM
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Robert S. Vincent, LM
Jacinto Viqueira Landa, LM
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Joseph R. Volpe, Jr., LM
Richard A. Volz, LF
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W.L. Wallace, LM
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Don M. Weigle, LM
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Marc R. Weinberger, LM
Richard T. Weinsberg, LM
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William C. Wells, LM
Richard Werling, LM
David L. West, LSM
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Charles E. Winn, LM
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Ernest E. Witschi, LSM
Horst R. Wittmann, LF
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Lorenzo L. Wong, LSM
R.W. Wong, LSM
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F.L. Wright, LM
James W. Wright, LM
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Goro Yabe, LSM
Hideki Yamamoto, LM
Itsuo Yamaura, M
Cheng Yat-Suen, LM
Robert M. Youngs, LSM
Alexander Yuill-Thornton, II, LM
Robert C. Zak, LM
S. Zelencik, LM
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Neal Zierler, LF
R.E. Zimmerman, LM
F.R. Zitzmann, LSM
Javad Zoroofchi, LM
Victor G. Zourides, LSM

Obituary: George McClure

George Franklin McClure died of natural causes at his home in Winter Park, Florida, on 24 March 2012. He was 79 years old. A native Floridian and lifelong Florida resident, he was a loving husband, father, and grandfather.

McClure received his bachelor's and master's degrees in electrical engineering from the University of Florida. He served as an active duty officer in the U.S. Navy, which included tours of duty as an officer on the deck aboard the *USS Terrebone Parrish* and as a physics instructor at the U.S. Naval Academy in Annapolis, Maryland. Subsequent to his time in active duty, he continued to serve in the Naval Reserves, retiring as a commander. He spent his entire professional career working as an electrical engineer at Martin Marietta (Lockheed Martin) in Orlando, Florida, and retired from the company in 1994.

Throughout his professional life, McClure was a volunteer with the IEEE and was awarded the honor of becoming an IEEE Fellow. Among his major accomplishments, he

- chaired three international IEEE conferences that were both professionally and financially successful
- pioneered the simplification of the criteria and reporting of candidates for large and small section Member and Geographic Activities awards, permitting a better comparison of candidates
- secured Region support for the Urban Grand Challenge, providing funds for a school tour of one of the finalists, a robotic Lotus vehicle
- instituted an annual Outlook article for IEEE-USA's *Today's Engineer*, focusing on technology, energy, cli-



George McClure

mate change, workforce, employment benefits, immigration, infrastructure, and the economy

- As Region director, brought together the Life Members Committee (LMC) and the proposed small radio telescope project. The US\$11,000 LMC grant provided the means for establishing a small radio telescope at the Museum of Arts and Sciences in Daytona Beach, Florida, where it has been available to thousands of school children annually and, through Internet access, linked to other radio telescopes around the country for long-baseline interferometry.

McClure also worked tirelessly on behalf of professional engineers, lobbying Congress every year on issues such as pension portability and limits on H1B visas. He most recently completed his term as chair of the IEEE LMC. He was also active in his community, most recently working to oppose a light rail proposal in Orlando.

He is survived by his wife, Glenda Magee McClure; his son, Stephen Scott McClure and family of Halethorpe, Maryland; his daughter Michele McClure Riley and family of Silver Spring, Maryland; his sister, Linda Kahn of San Francisco, California; and his grandchildren, Kevin and Lauren Riley of Silver Spring, Maryland, and Zachary Warden and Colin McClure of Halethorpe, Maryland. His sister, Louise McClure of Jacksonville, Florida, preceded McClure in death.

In lieu of flowers, donations may be made to the IEEE Foundation (online at www.ieeefoundation.org or via mail to the IEEE Foundation, 445 Hoes Lane, Piscataway, NJ 08854).

Obituary: Burkhard Schneider

Burkhard H. Schneider, 87, of Grosse Pointe Woods and Traverse City, Michigan, passed away unexpectedly on Thursday, 2 February 2012 after returning from the Caribbean. He was born on 25 January 1925 in Wolfenbüttel, Germany, to the late Heinrich and Alice Schneider (Hochhausen).

Schneider was preceded in death by his wife of 57 years, Patricia Mary Grabb. They resided in Grosse Pointe Woods for 41 years. He moved to Traverse City in 2011. He served in the European Theater for the U.S. Army during World War II.

Schneider graduated from Cornell University in 1947 with a degree in electrical engineering. Upon graduation, he came to Detroit, Michigan, where he accepted a job as an engineer for the Detroit Edison Co. He worked his way up in the company, finally retiring at the age of 65 as senior vice president.



Burkhard Schneider

He served in a number of capacities with IEEE including the General Meetings chair (1966–1968), IEEE Board of Directors (1975–1976), IEEE treasurer (1975–1976), IEEE Executive Committee (1975–1976), and chairman of the IEEE Member Benefits Committee (1978–1979), among others.

Community activities were an important part of Schneider's life. He served as chairman of the board for Goodwill Industries and as deacon for the Grosse Pointe Woods Presbyterian Church. He loved playing duplicate bridge, sailing, golfing, traveling, and spending time with his family.

He is survived by his four children, Christine of Traverse City, Steve of Novi, Michigan, Fred of Libertyville, Illinois, and Margaret Alexander of Traverse City, as well as his sister, Marianne Weigel of Kensington, California. He was the loving grandfather of 12 grandchildren and one great grandchild.

Successful and Foiled Plans

I joined the Navy in 1943, was assigned to submarine service, and was sent to the naval station in New London, Connecticut, to study as a submarine radio/radar operator. The radar system was developed to operate with a new waveguide form, which allowed us to determine target ranges accurately and view and interpret transmissions on the radar screen while operating the periscope mast near the water's surface and out of enemy detection.

Following training, I was assigned to the *USS Aspro*, stationed in San Francisco but with operational duties at Midway Island. From Midway, our mission was to conduct submarine operations in international waters surrounding Japan. My primary responsibilities were to operate the radar system, transmitter, intercom, sonar, and receiver systems. In 1945, while on mission near Tokyo Bay, we received a relayed mayday transmission that a U.S. airplane had been shot down. We moved our submarine into Tokyo Bay where we located the airplane and quickly recovered the pilot. The rescue was successful but our biggest problem was that the Japanese were actively searching for the airplane and us. To avoid detection, we submerged, sat on the bottom, and waited until the Japanese moved out of the area. The Japanese moved just as we ran out of breathing air and we



Jerson was stationed on the USS Aspro during World War II.

were forced to surface to periscope depth. At that depth, we traveled to the entrance of the bay and patrolled for any Japanese vessels, destroying one prior to returning to Midway.

While in route to Midway, the United States dropped the atomic bomb on Hiroshima, which signaled the beginning of the end of the Pacific Campaign. Unfortunately, while traveling to Midway, we were engaged by a Japanese "Zero." The Zero shot at our periscope and disabled it to the point where we were incapable of submerging. We called for help from a nearby aircraft carrier, and they provided air and sea security until we reached Midway. With the end of World War II, I left the Navy in 1946 and returned home to Ohio.

After my military service, Boeing Company offered me a job. During my first five years, I worked as an electrical engineer, primarily on U.S. military aircraft. The primary programs I worked on were the B-52, B-49, and B-47 bombers and the RC

tanker platforms. I had transferred to Seattle, Washington, and in 1963, I was asked to transfer again to work for NASA on the Apollo space program. I was offered a position working at the NASA Michoud Assembly plant in New Orleans, Louisiana, where I was the supervising chief engineer on the rocket assembly sections for ten years, up until the completion of the final mission vehicle. Based on my managerial responsibilities while at Michoud, I returned to Seattle in 1972 to become the managing engineer of a new development program, later named the "Jetfoil." The design concept was to develop a maritime vessel that could rise off its hull on the water's surface, with an operating speed of 50 kn and a carrying capacity of 250 passengers.

My position with Boeing changed, and I became the project interface with international marine engineers, traveling throughout Western Europe and Asia, most importantly to China and Hong Kong. The Boeing Jetfoil ultimately failed within the United States, and Boeing sold the design and products to China around 1980 for ferry service between Hong Kong and Macau. I continued to work for Boeing until 1982, when I moved to Oklahoma to retire.

Ted Jerson, LM
Park Hill, OK

Restart Relays

In the spring of 1941, I was selected to be the station chief of the Airway Communication Station in Huron, South Dakota. The predecessor of the current Federal Aviation Administration operated this station around the clock. The staff at the Communication Station operated a nearby loop-type radio range transmitting station with voice capability. The radio range operated in the 200–400 KC band. There were

at least 100 scattered throughout the United States.

The station broadcast current aviation weather hourly on the low-frequency range as well as special weather observations as provided by the local weather bureau office. The station also communicated with aircraft to deliver air traffic control clearances and aviation weather for other locations. It handled flight information by voice communication with the aircraft.

After arriving in Huron, it was found that the low-frequency radio range transmitter would go off the air every time there was an ac power failure. It would stay off until redialing some numbers that operated a Strowger control switch manually restarted it. Power failures happened quite often during the summer thunderstorm season in Huron. The low-frequency radio range provided a radio directional signal that was used

for navigation by aircraft in that era. The radio range was equipped with a restart relay combination to switch the radio transmitter back on the air following a power failure.

This facility was equipped with an engine-generator that started in the event of a power failure and supplied 220–240 V ac power for the radio range site. The engine generator transfer switch had been adjusted to operate at about 60 V ac, or about one fourth of normal voltage. Upon a power failure, the engine-generator would start and take approximately 10 s to come up to speed. The radio transmitter had

a 220–240 V ac power relay, which required about 180 V, or three fourths of the line voltage to operate. Most of the control relays operated from a 48-V dc power supply. The restart relays would operate at about one fourth the supply voltage, or 12 V.

When the engine-generator started from a power failure, and as the ac voltage began to rise, it would operate the transfer switch as it passed about 60 V ac, or one-fourth normal voltage. This low voltage was enough to cause the restart relays to operate but not enough to cause the transmitter relays to pull

in. As a result, the engine-generator was running, but the transmitter was not turned “ON.” This was because when the restart relays operated, there was not enough ac voltage to pull the transmitter relays “ON.”

The problem was solved by readjusting the ac power transfer switch so that it did not operate until the engine-generator voltage passed about 190 V on its way to 220–240 V. This solved a nationwide problem that had perplex the federal agency for some time!

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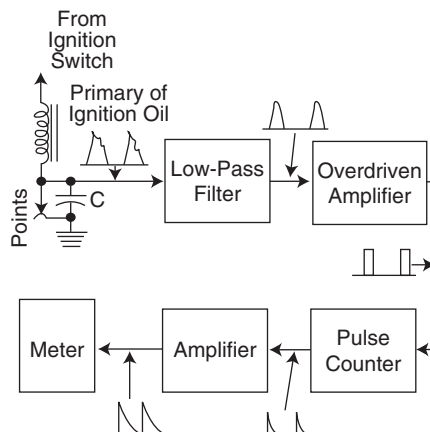
A Tach First

In a late 1957 bull session at the then all-male Massachusetts Institute of Technology (MIT) Grad House, talk turned to cars. Why, one student asked, were tachometers not fitted in American cars as they were in many foreign makes? A mechanical engineering student said that it was due to cost. In the high-volume, competitive American market, adding a tachometer drive cable takeoff on the engine would be prohibitively expensive. That tabled the matter, save for two electronics engineering students who were to become lifelong friends and now, more than 50 years later, write this article.

We wondered if a tachometer had to be mechanical. After all, the ignition systems of cars generated pulse signals proportional to engine revolutions per minute (rpm). There were no diesel cars then, so if we could devise an electronic tachometer, simple arithmetic would suit it to any engine then in use. We both had some experience with transistor circuits in our respective master’s theses; might transistors be the way to go?

Digital circuits convenient for pulse counting had yet to be invented. The circuitry we knew about then was all analog, and we were familiar with analog filters. So we bought two war-surplus 500 μ A to 1 mA meters and started fiddling with circuits in our spare moments.

Our approach was straightforward. The input signal came from the distributor breaker points. First it went into a low-pass filter to remove noise. An overdriven amplifier followed to



Block diagram of the original circuit.

produce a chain of uniform pulses. A pulse counter and an amplifier to drive the meter finished the circuit, in all comprising two transistors, two diodes, and a few capacitors and resistors. We used a laboratory pulse generator to calibrate the circuits, drew new scales for the meters, and installed the tachometers in our cars.

They worked well, so we thought we might publish the circuit. It wasn’t a topic for the *Proceedings of the IRE*, of which we both were members. We didn’t belong to any

professional groups that dealt with such matters, so we wrote up the circuit and submitted an article to *Radio & Television News*. They published it in January 1959, after we both had left MIT, M.Sc. degrees in hand.

For years thereafter, we received reader letters on the tachometer, some with the complaint that rpm indications were irregular in hot weather. That was unsurprising, as we had seen no need for temperature compensation in the chilly Boston winter. The basic circuit was sound and, with added temperature compensation, should work anywhere.

We never tested that, as we went on to careers in fields not related to automotive electronics. With time, electronic tachometers were fitted in American production cars. We don’t know if any were based on our circuit, as we didn’t patent it. If we had, our careers might have differed, and most likely we would not have written this article.

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We welcome articles for this newsletter. In particular, we seek articles about projects that are initiated at the Section and Region level by Life Members as well as “Tales from the Vault,” which should focus on novel or interesting technical issues. The suggested length for “Tales from the Vault” submissions is 500 words.

Acronyms should be completely identified once. Reference dates (years) also should be included. Editing, including for length, may occur. If you wish to discuss a story idea before hand, you may contact Craig Causer, managing editor, by e-mail at lm-newsletter@ieee.org. The deadline to submit an article for possible inclusion in the next issue is 1 October 2012. Please include your Life grade, town, state, country, phone number, member number, and/or an e-mail address with your piece.

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